



INSTITUTE OF CHEMICAL TECHNOLOGY

(Deemed University under section 3 of UGC Act 1956 (Sept 12, 2008) and
Elite Status and Centre of Excellence - Govt of Maharashtra, Assembly Resolution April 20, 2012)

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NAAC

SELF STUDY REPORT

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GENERAL INFORMATION

GENESIS AND GROWTH

Established on October 1, 1933 as the UDCT– University Department of Chemical Technology of the University of Bombay, now well known as the Institute of Chemical Technology (ICT, Mumbai), with the noble intention of advancing India’s knowledge reserves in chemical science and technology, the Institute has grown to become a premier (deemed) university devoted to education, training, research and industrial collaboration in chemical engineering, chemical technology, applied chemistry, pharmacy and biotechnology. The grand 80th year Jubilee was celebrated in the august presence of Shri Pranab Mukherjee, the President of India, on 27th December, 2013. The Indian Institute of Chemical Engineers had also arranged its Annual Conference, Chemcon-2013 during December 27-30, 2013, in the honour of this great institute. More than 2000 delegates and invitees attended this programme. The list of achievements of this great centre of learning is voluminous and ever since its inception, the Institute has been a fertile breeding ground for some of India’s most gifted minds. The Institute’s alumni have distinguished themselves in all walks of life, be it in industry, academia, government or public service in India as well as abroad. This is indeed unique in the history of any institute in India. Some of the rare international honours have been bestowed upon them and some have been role models, serving the nation. On 26th January 2014, the President of India announced award of Padma Vibhushan on Dr R.A. Mashelkar, the Chancellor and Padma Bhushan on Professor J.B. Joshi, the former Director of ICT. On 26th January 2016, the Vic-Chancellor, Professor G. D. Yadav was conferred the Padmashree by the President of India. The former Director Professor M.M. Sharma was conferred Padma Vibhushan in 2001, Dr Mashelkar, Professor Joshi and Professor Yadav are alumni of the ICT and Ph D students of Professor Sharma. The ICT is a rare institute of its kind.

When compared with a large number of engineering and technological institutes, which mushroomed during past 2-3 decades, the genesis of ICT, still popularly called UDCT by many, is beyond fathom and imagination. Its low profile in common man’s vocabulary is both bane and benefit. Even our neighbours have never known what we do or what we stand for- for them it is a ‘dagdi’ (stone) college or a hospital, at the most; they are intrigued and bewildered whereas it is a benefit for us from the academic view point since we continue to work quietly, sans the typical college atmosphere, impart high class education, and conduct research par excellence, having a direct relevance to solving societal problems and adding to quality of life. Philanthropy, visionary leadership of the University of Bombay (now Mumbai), active participation of the industry to create endowments for faculty positions and laboratories, and the support of the then Governor of the Province of Bombay, which extended to almost 10% of India, led to the foundation of the University Department of Chemical Technology on October 1, 1933. The Vice Chancellor Sir Vithal Chandavarkar, an industrialist, educationist and proponent of textile industry, put all his valour behind the fledgling UDCT and assisted in creating a far-sighted roadmap. The Committee constituted by the University for establishing the UDCT was chaired by none other than the great civil engineer Bharat Ratna Sir M. Visvesaraya, and comprised of,

among others, such stalwarts as Sir K.M. Munshi, the Founder of Bharatiya Vidya Bhavan, and Shri Kapilram Vakil, a doyen of inorganic chemical industry in India. Research was incorporated as an integral part of the UDCT right from inception, and the first batch of students for the B. Sc. (Tech.)- a two-year post-B Sc. Course, with Textile Chemistry and Chemical Engineering as the branches, was admitted on 4th August, 1934. With the growth in demands for chemicals, drugs, polymers and materials after World War II, other branches of chemical technology embracing Foods and Drugs, Oils, Plastics, Paints, Varnishes, Intermediates and Dyes, Pharmaceuticals and Fine Chemicals, were added and these courses were later reorganized to give a distinct flavour to all branches of Chemical Technology. Birth of several industries was a direct result of UDCTs' activities. In 1951, Chemical Engineering branched out as a post-Inter Science four-year degree programme, B. Chem. Eng., which has been the most sought after ever since. The B.Sc. (Tech.) courses were converted into post-B.Sc. three-year courses in 1966 and finally further converted into B. Tech. programmes, which are post-HSSC (12th Standard) in 1998.

The ICT is a vibrant and invigorating institute, a symbiosis of academic excellence, culture, ethos, value systems, and an architect of new and useful knowledge, standing tall among all institutes of national importance.

DEEMED UNIVERSITY STATUS

The UDCT grew in stature over the years and was granted partial autonomy by the University of Mumbai in 1985, which was taken to the next echelon under the concept of autonomy propagated by the University Grants Commission (UGC). Financial, academic and administrative autonomy was conferred during the Diamond Jubilee in 1993-1994 for a period of five years, which was extended for next 5 years in 1998, followed by another extension of five years. The University thought it appropriate to rename it as the University of Mumbai Institute of Chemical Technology (UICIT) on 26 January 2002 to distinguish its grander academic programmes and accomplishments surpassing those of a typical University department. The UICIT was granted full autonomy in June 2004 by the State of Maharashtra under the Technical Education Quality Improvement Programme (TEQIP) of the World Bank with complete assistance of the University. Upon a strong recommendation of the UGC through a peer review process, the autonomous institute status was finally converted in to a Deemed-to-be-University by the Ministry of Human Resource Development (MHRD), Govt. of India, on 12 September 2008; a strong recommendation was made that the ICT should be fully supported and its activities strengthened by the Government and the new (deemed) University should commence its functioning from academic year 2009-10. A grand ceremony was launched to mark this occasion on 21st May, 2009. It is a unique Deemed University, with unparalleled record, funded by the State of Maharashtra, receiving various grants and projects from the UGC, DAE, DBT, DST, CSIR, ICMR, MFC, MOEF and other agencies including Indian and foreign industries. Several Centres of Excellence have been created through the support of central agencies, which have been mainly responsible to nurture quality in education and research. In a recent review, of all deemed universities in the country, the MHRD granted in 2012 A grade to the ICT, which is the only one in the State of Maharashtra along with three

institutes – TIFR, TISS and CFRI, all of which are funded by the Central Government ministries.

ELITE STATUS AND CENTRE OF EXCELLENCE OF GOVERNMENT OF MAHARASHTRA

Based on its stellar performance and national and international accolades, the ICT was declared as Elite Institute and Centre of Excellence by Government of Maharashtra on 20th April 2012 in the State Assembly, on par with national institutes of importance such as IITs, IISc and IISERs. This is a unique distinction in India for a state owned university of any kind and it speaks volumes about the sagacity of the government. It has been made possible through dedicated services, hard work and talent of our faculty, students, alumni and support staff. Now as an Elite Institute, we would like to be an INNOVATION UNIVERSITY, in tune with modern concepts and contemporary speed of creation and dissemination of knowledge; a new trinity based on expansion, inclusion and quality will be our soul. We will create new knowledge to solve the problems of chemical, biological, materials and energy industries in service of the nation and in turn the world. Our vision and mission are thus redefined.

ENGINEERING CHALLENGES AND RELEVANCE OF COURSES

To the students who are admitted to this grand institution, which is strictly based on merit, it is assured that the education they shall receive will be of the highest order and, in the years to come, will place them at the cutting-edge of science and technology. No virtual world can be created without materials produced by niche and eco-friendly technologies. We all live in the world of chemicals, molecules, and products, that give quality and longevity to life. In this context, one can refer to the “Grand Challenges”, involving the following.

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|----------------------------------------------------|--------------------------------------------------|
| 1. Advancing health informatics | 2. Engineering better medicines |
| 3. Making solar energy more affordable | 4. Providing access to clean water |
| 5. Reverse-engineering the human brain | 6. Advancing personal learning |
| 7. Engineering tools for scientific discovery | 8. Managing the nitrogen cycle |
| 9. Providing clean energy from fusion | 10. Securing cyberspace |
| 11. Preventing nuclear terror | 12. Enhancing virtual reality |
| 13. Developing new methods of carbon sequestration | 14. Restoring and improving urban infrastructure |

All these challenges are uniquely physicochemical in nature and an education in chemical engineering or chemical technology particularly empowers the students and researchers to tackle these herculean tasks. There is a confluence of chemical sciences and engineering with biological sciences and engineering. The technologies related to producing advanced materials, clean energy generation and storage, medicines, high-end drugs, nutraceuticals, food products, fertilizers, agrochemicals, polymers, surface coating materials, laser dyes, colorants, pigments, adhesives, textiles, fibres, oleochemicals, surfactants, lubricants, water

treatment and purification, air pollution abatement, bio-processing, downstream processing and a myriad of related issues involve high degree of science and engineering. How are we going to feed billions of people, remain in harmony with nature, and develop sustainable processes and technology? What will be their energy and material needs? Life expectancy is getting extended. Addressing these challenges requires multifaceted efforts that traverse the fields of chemistry, engineering, biotechnology, information technology and nanotechnology, engineering mathematics, environmental engineering and the curricula and courses offered at the Institute have judiciously incorporated subjects from all these disciplines. Our courses directly allow being on the forefront of these rewarding careers.

More importantly, the students are instructed by some of the nation's most eminent scientists and engineers who themselves are at the vanguard of research in these fields, thereby ensuring that the knowledge passed onto the students is pertinent based on real experiences and continuously updated. Teaching without research is barren and our planners thus were visionary in bringing research component in our teaching to solve real problems. These researcher-cum-teachers are always on their toes and work longer hours to be on the forefront. This invigorating atmosphere is witnessed in ICT. There is no nine-to-five culture; working extended hours is a habit imbibed by students and teachers alike. Besides, a large number of the ICT faculty acts as consultants/advisors to industry with a strict condition that no institutional material facility is used for these industrial consultations. Research projects investigated in our labs are of both academic sanctity and industrial relevance. So the proverbial 'Practise what you preach' is indeed executed by the faculty; many of them actually earn their salaries through the one-third share of the consultation fees paid to the institute.

National and International Accolades and Ranking

The Institute's strong multi-disciplinary research programmes have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. The ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. All of them deem that ICT is different; distinctly different; incredibly different! They wonder how a small university department, with poor funding has managed to excel and that too without any public glare or publicity? The magic mantra for our success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, and assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation. It is unsurprising thus that the Institute of Chemical Technology is ranked as the best chemical engineering and chemical technology teaching and research institute in India and now stands at number 4 in the world in an annual ranking of chemical engineering programs conducted by the Georgia Institute of Technology, USA in January, 2012. Different authorities have duly recognized our spectacular performance over the years.

The P. Rama Rao Committee appointed by the AICTE as well as the P. Rama Rao IIT Review Committee has recognized the ICT as the best post-graduate technical educational centre in India. The Indian Institute of Management, Bangalore, after surveying a large number of industries in the country, identified the ICT as the best on the basis of its contribution to the development of chemical and pharmaceutical industry. The Directorate of Technical Education, Government of Maharashtra, has awarded Grade 'A+' to the Institute. The National Board of Accreditation (NBA) of the AICTE has accredited all Bachelors and Masters Courses taught by us in February 2008.

ACCOLADES AND RECOGNITIONS GALORE

1. The ICT was established as University Department of Chemical Technology (UDCT) of Bombay University on October 1, 1933 under the recommendation of the Committee headed by Bharat Ratna Sir M. Visvasaraya which included stalwarts like Shri K.M. Munshi, Founder of Bharatiya Vidya Bhavan, Shri Kapilram Vakil, M.D. Tata Chemicals, Shri Katurbhai Lalbhai, Textile Mill Owner and Industrialist. Research was an integral part of education from inception. It was granted partial autonomy in 1985 which was converted to full autonomy in 1994, renamed as University Institute of Chemical Technology in 2002 and granted full autonomy by the Govt of Maharashtra and University of Mumbai in 2004 under the TEQIP programme of the World Bank.
2. Based on its stellar performance, it was granted Deemed University status by the MHRD on recommendations of the State and UGC on 12th September, 2008. Again due to its excellent performance and national and international accolades, the ICT was declared as Elite Institute and Centre of Excellence by Government of Maharashtra on 20th April 2012 in the State Assembly, on par with national institutes of importance such as IITs, IISc and IISERs.

This is a unique honour given to a State funded institute in India. The ICT runs 9 UG, 16 PG (both 2 year and extended 3-year for industry based candidates), 4 M. Sc., 29 Ph D and 1 PG Diploma in Chemical Technology Management (CTM) for Ph D students for development of entrepreneurial skills. Currently there are 983 UG students, 494 PG students and 593 Ph D students.

3. The ICT has filed/acquired 310 patents in last 10 years of which 189 are during the last 5 years.
4. India has 3 Fellows of Royal Society in Engineering of which 2 are chemical engineers and both of them are from the ICT- Padma Vibhushan Prof M. M. Sharma and Padma Vibhushan Dr. R.A. Mashelkar
5. In the 10th BioSpectrum Top BT Schools Survey done in April-May 2013, ICT Mumbai, had emerged as the No.1 Biotech School in India. Biospectrum magazine in August 2011 has also rated ICT's programme as Number One among all biotechnology programmes in the country, two years in succession.

6. The Melinda and Bill Gates Foundation USA has awarded FOUR grants to ICT projects recently which speaks volumes of ICT's standing internationally. Two doctoral students of Professor Vandana Patravale namely Ms. Swati Vyas and Ms. Priyanka Prabhu received a grant of US \$100,000 from the Bill and Melinda Gates Foundation to develop the first ever eco-friendly nanovaccine for nasal immunisation as part of the foundations' Grand Challenges Explorations (GCE) initiative.
7. The MHRD had evaluated all deemed universities in 2009 and granted "A" grade only to 38 universities among 135. The ICT is rated with "A" grade. It is the only one among 4 in the Maharashtra State, the other 3 being centrally funded TIFR, TISS and CIFE.
8. The ICT has also been rated as Number One Institute by National Project Implementation Unit (A Govt. of India Unit for World Bank Assisted Project for Technical education) in its study on 'Impact Evaluation of Technical Education Quality Improvement Program (TEQIP – I)' among 127 World Bank's TEQIP funded Institutes, all over India published in October, 2010. The second phase of TEQIP has begun with several innovative concepts and the ICT has been granted a Centre of Excellence in Process Intensification for Process Industries. The ICT is identified as the lead institute for Innovation Networking and mentoring the other TEQIP Institute in Maharashtra.
9. A survey was published by Professor Jude Sommerfeld of Georgia Tech., USA in showing that the ICT is Number One Institute in India far ahead of several others including IITs, and it is also number 4 in the world in Chemical Engineering. This rank has been maintained since 1970s. The ICT produced 382 research papers in international journals during 2014-15 which is a record in India for a faculty strength of 82.
10. The ICT has produced average of 4.5 papers per faculty at an average expenses of 22 lakhs per faculty in last couple of years. This is a record for a State owned institute/university whose performance is exceptionally outstanding.
11. The UGC decided to recognize faculty who has supervised as single guides at least 15 PhDs, of which at least 5 should be during last 5 years. The ICT has a record of 16 faculty who qualified for special grants. The Vice Chancellor Professor G. D. Yadav is the topmost among all academics with supervision of 77 PhDs. and 88 Masters degree holders and 26 Post-Doctoral Fellows.
12. Professor G.D. Yadav and Professor A. B. Pandit the only two serving faculty members in the State to be Fellows of the TWAS- the Academy of the Developing World, Trieste, Italy, including Fellowship of INSA. He was recently invited by the Royal Society of Chemistry, UK, to be Fellow for his truly outstanding contributions to chemical sciences and particularly as Vice Chancellor and R.T. Mody Distinguished Professor for promotion of ICT.
13. There are three J.C. Bose National Fellows (DST, Govt. of India), former Director Professor J.B. Joshi, Professor G.D. Yadav and Professor A.B. Pandit.

14. Indeed, the ICT, with a meagre budget, is number one in terms of publications and citations per faculty in the country and in world as well.
15. All admissions are on basis of merit and as per government policy in place as regards reservations. No Ph D candidate is admitted without fellowship. There are 340 UG scholarship including merit-cum-means scholarships which range from Rs 10,000 to Rs 1,00,000 per student per annum which have been created through endowments, donations, trusts, philanthropists and industries.
16. The UDCT Alumni Association (UAA) helps the ICT in several activities and have the strongest connectivity with the ICT. UAA has been helping the students in many of their programmes, including interest-free loans.
17. The First Convocation of the ICT was held on March 6, 2012 which was addressed by Hon'ble Shri Prithviraj Chavan, Chief Minister of Maharashtra, Hon'ble Shri Rajesh Tope, Minister for Higher and Technical Education, and Padma Bhushan Dr. R.A. Mashelkar, Chancellor of ICT. It was a grand function witnessed by over 1500 persons including distinguished alumni, parents of graduating students, past directors, past presidents of UAA, well wishers, and industrialists and a galaxy of achievers. The Second Convocation was addressed by Shri Mukesh Ambani, Chairman and Managing Director, Reliance Industries Ltd, and also one of our most Distinguished Alumni and Superstars on 15th March, 2013. Shri Rajesh Tope was the Guest of Honour.

The Maharashtra Government has promised land for a satellite campus in addition to the existing campus. BHARATRATNA Professor C.N.R. Rao, National Research Professor, Linus Pauling Research Professor and Honorary President, Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore was the Chief Guest for the Third Convocation of the Institute held on 8th March, 2014. PADMAVIBHUSHAN Professor M.M. Sharma, Former Director and Emeritus Professor of Eminence, ICT was the Guest of Honour. The Chancellor, PADMAVIBHUSHAN Dr. R.A. Mashelkar presented Institute's first D.Sc. (Honoris Causa) to Professor C.N.R. Rao and Professor M.M. Sharma. The Fourth Convocation function of ICT was held on Monday, February 16, 2015 where Dr. R.A. Mashelkar, Chancellor of the Institute accorded D.Sc. (Hon.Causa) on Shri Mukesh Ambani, Chairman and Managing Director, Reliance Industries Ltd. and Professor George Whitesides of Harvard University. Professor G.D. Yadav, Vice Chancellor of the Institute presented the vision of the Institute. The "Pidilite Multipurpose Pavilion" was inaugurated in the august presence of Shri Narendra Parekh, Joint Managing Director, Pidilite Industries Ltd. before the Convocation. The institute showcased its technological inputs by bringing out fantastic publications of Annual Report, Intellectual Rights and Technologies profile. In all 240 Bachelors, 229 Masters, 8 Post Graduate Diploma in Chemical Technology Management and 81 Doctorate students were awarded degrees. This is a record for the Institute. Shri Ambani had refused honorary doctorates earlier but was delighted to get his first D.Sc. from his Alma Mater.

18. The UGC has started a unique scheme called Faculty Recharge under which 13 positions have been sanctioned during 2012-15 who will receive salaries and benefits like central university faculty. This is again a great achievement. Four INSPIRE fellows of DST have been working on the campus.
19. More than 100 Memoranda of Understanding (MOU) have been signed for academic and research collaboration with foreign and Indian universities, Indian and foreign industries. Purdue University, University of Illinois, Urbana Champaign, University of Saskatchewan, University of British Columbia, University of Waterloo, University of Alberta, Western University, Canada, RMIT, Australia, Bradford University, UK, GEMS, France, are a few foreign universities. The CSIR laboratories- Central Drug Research Institute (CDRI), Indian Institute of Petroleum (IIP) Dehradun, Indian Institute of Chemical Technology (IICT), Hyderabad, National Environmental Engineering Research Institute (NEERI), Nagpur, National Chemical Laboratory (NCL), Pune, Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar, IIT-Bombay, Department of Atomic Energy's Homi Bhabha National Institute (HBNI), Mumbai, Shivaji University, Kolhapur and College of Engineering Pune (COEP) are some of them.
20. In January 2014, Padma list declared by Government of India includes: Padma Vibhushan on Dr R. A. Mashelkar, Chancellor of the institute, and Padma Bhushan on Professor J.B. Joshi, former Director of ICT. In January 2016, the current Vic-Chancellor, Prof. G. D. Yadav was conferred Padmashree by the President of India.
21. Life Time Achievement Award of Indian Council of Chemists (ICC) has been bestowed on Professor G.D. Yadav in the XXXIII Annual Conference at Indian School of Mines, Dhanbad.
22. The American Chemical Society (ACS) - Industrial and Engineering Chemistry Research Journal has just published a Festschrift (10th December, 2014) in honour of Professor G.D. Yadav. The preface gives his career path written by Professor Suresh K. Bhargava (RMIT, U Australia), Dr Lakshmikantam and Dr. B.M. Reddy (IICT Hyderabad). Further more, ACS has appointed him as the Chairman of their international branch in India and bestowed with the Individual award for excellence in volunteer service in recognition of his role and keen interest in the activities implemented in India and effort towards the formation of the ACS India Chapter.
23. Professor Arvind Lali, Head, DBT-ICT Centre for Energy Biosciences alongwith the team from Queensland University of Technology, Australia met Shri Narendra Modi, the Hon'ble Prime Minister of India and gave presentation on 14 November, 2014.
24. Tata Chemicals Best Industry linked Institute in Chemical Engineering Award instituted by AICTE-CII was bestowed on ICT in Delhi by the hands of Hon'ble Smriti Irani, HRD Minister on 20th November, 2014 based on the annual survey conducted by AICTE-CII. This the second consecutive year ICT received this honour.

25. One of our Distinguished Alumnus, Professor Samir Mitragotri has been elected as a member of the U.S. National Academy of Engineering (NAE)!! This is the highest honour an engineer can get in the U.S.

The research funding received by ICT is through a highly competitive peer reviewed processes, for which again all these elite institutes are in the race. These statistics are highlighted to demonstrate the uniqueness of ICT.

QUALITY OF FACULTY

Except three, all members of faculty have doctoral degrees to their credit; several of them have been trained abroad in prestigious institutes after their Ph.D.s, and almost all of them are engaged in research. Over 80% of faculties have been active consultants to industry. Those without Ph.D. are also registered for Ph.D.s. The faculty is highly accomplished, with multi-disciplinary interests and decorated with national and international awards and honours, having live connections with industry. These include: Padma awards of Government of India, Fellowship Royal Society, London, Fellowship of Royal Academy of Engineering, UK, Foreign Associateship of US National Academy of Engineering, Fellowship of TWAS- The Academy of the Developing World, Trieste, Jagdish Chandra Bose National Fellowship, Fellowship of the Royal Society of Chemistry, UK, S.S. Bhatnagar Prizes of CSIR, Young Scientist medals of the Indian National Science Academy, Fellowship of Indian National Science Academy (INSA), Fellowships of the Indian Academy of Sciences, Fellowship of National Academy of Sciences, India (NASI), Fellowship of Indian National Academy of Engineering, Young Engineer award of Indian National Academy of Engineering, Gold Medal of the Society of Dyers & Colourists, UK, etc. Currently three faculty members of Chemical Engineering are fellows of INSA, which is a unique distinction in the country. The honour of rejuvenating and heading the IChE in 2001 came to the author when a record number of 51 national awards were created through endowments. All major awards of the Indian Institute of Chemical Engineers – Hindustan Lever Award, Herdillia Award, HL Roy Founders Lecturers, several Chemcon Distinguished Speaker Awards, Amar Dyechem Award, A.V. Ramarao Best Ph.D. thesis award, and awards and honours from other professional bodies have been bestowed on the ICT faculty. The Home Paper/Design project awards for chemical engineering have been bagged consistently since 1972 every year except one and it could be a record.

Prof. M.M. Sharma, an alumnus and former Director of ICT, was awarded Padma Vibhushan by the President of India in 2001, having already decorated with Padma Bhushan in 1987; he was the only serving faculty in Mumbai University then to be so honoured for his work in the ICT and services to the profession. He also happened to be the second engineer from India, and first chemical engineer, to be elected to the prestigious fellowship of Royal Society. He is the Chairman of Empowered Committee of MHRD to support higher education, and also the Chairman, Board of Governors, IIT-Madras. Another record was created when the Chairman of our Board of Governors and the highly accomplished Dr R.A. Mashelkar was elected to this

fellowship. Dr Mashelkar's Ph D in chemical engineering is from the ICT and he is a public figure. He is currently the Chancellor of the ICT.

Our faculty and alumni have been presidents of several esteemed professional bodies such as Indian Institute of Chemical Engineers, Association of Food Scientists and Technologists, Oil Technologists Association, Colour Society; some of the regional centres of such bodies have been functioning from the premises of our institute.

CULTURE OF Ph.Ds

The first ever Ph.D. degree in Engineering and Technology stream in India was awarded by the ICT in 1941; it was Dr Kudwa, a chemical engineer, who specialized in Polymers and Paints and was a revered paint technologist. In fact, first 5 Ph Ds in Engineering and Technology in India were awarded by Mumbai University for the students of ICT. Since then there is a continuous flow of doctorates and the UGC used to grant 19 Ph D (Tech) fellowships per year up to 2005-06. During 1990s, the number of Ph Ds produced increased to about 40 per year. For several years the output of doctorates from the ICT remained about 55 per year. However, during 2009-10, exactly 100 Ph.D.s were produced, which is the highest in the country in Chemical Science, Engineering and Technology. The ICT will be in an enviable position as a research institute, with production of at least 150 Ph Ds per year in near future.

It has been our policy now that no Ph D student will be admitted without fellowship. This has been possible due to the award of meritorious fellowships under UGC-SAP, various Centres, individual research grants, industrial projects and endowments. Meritorious fellowships are accorded to all UGC- SAP departments as well as non-SAP department every year, which range from 5-20 fellowships per SAP department, depending on their track record of research. The ICT has received 340 such fellowships from the UGC during 2013-14. This is again a record. There are 16 faculty members who have produced more than 15 Ph Ds and 6 of them have produced more than 30 and one more than 75.

We are pro-active and would like to attract talented students and teachers from various engineering colleges for the Ph.D. programmes under the UGC Networking Resource Centre in Chemical Engineering. The AICTE has now identified ICT for QIP for teachers. India needs a lot of Ph Ds in engineering and technology to remain at the forefront to be a developed nation; ICT's role is therefore of grandeur. Several colleges with teachers without Ph.D. will be detrimental for the future of education. Further, those who fall into the category of 'Single Child-Girl, there is a scheme of super-numerary Ph.D. fellowships in all our UGC-SAP departments. The UGC has also introduced Rajiv Gandhi Fellowships for SC/ST, and Minority Students Fellowships. There are DST-INSPIRE fellowships to first rankers in all branches of science and engineering for conducting doctoral research (www.dst.gov.in). Those who are desirous of post-doctoral fellowship should apply for the D.S. Kothari Fellowships of the UGC (www.ugc.ac.in). More information could be gathered from the UGC website. We have also established Pidilite-Professor Man Mohan Sharma Distinguished Doctoral Fellowship in Chemical Engineering, with a fellowship of Rs 30,000/- p.m. BPCL has also sanctioned two doctoral fellowships with incentive of Rs. 5000/- per month in addition to the GOI Scale. We

are in discussion with other Industries to insititute similar fellowships to attract excellent candidates for the Ph. D. programe. This is the highest fellowship offered anywhere in India. There are also schemes by both UGC and DST to offer fellowships to women scientists who have taken a break in their careers. We have attracted a few such candidates including DST's Fast Track Fellowships.

CENTRES OF EXCELLENCE AND COURSES

Upon achieving the Deemed University status, ICT revised all our course curricula; a system of continuous evaluation with 60% of marks during the semester and 40% at the final examination has been adopted with CGPA, with a large number of electives offered across stream every year. The repeat final examination is held within a month. There are tutorials for both UG and PG students. Course work is mandatory even for Ph.D. students.

All Ph.D. students with fellowships are mandatorily required to assist teachers in running labs and conducting tutorials. ICT offers 29 different Ph.D. programmes. A large number of Ph.D. (Science) students also are supervised by faculty of chemical engineering and chemical technology, in inter-disciplinary areas. There are fellowships and facilities created in the institute to generate advanced knowledge.

The ICT functions through 11 full-fledged departments and several centres of excellence, which have a long track record of running quality courses at Master's and Doctoral levels:

1. Department of Chemical Engineering (1933)
2. Department of Dyestuff Technology (1944)
3. Department of Fibres and Textiles Processing Technology (1933)
4. Department of Food Engineering and Technology (1943)
5. Department of Oils, Oleochemicals and Surfactants Technology (1943)
6. Department of Pharmaceutical Sciences and Technology (1943)
7. Department of Polymer and Surface Engineering (1946)
8. Department of Chemistry (1952)
9. Department of Physics (1966)
10. Department of Mathematics (1966)
11. Department of General Engineering (1952)

Every major department of the ICT is recognized by the UGC under its Special Assistance Programmes (SAP) such as COSIST, DRS, DSA and Centre of Advanced Studies (CAS), which are as follows:

1. CAS in Physico-Chemical Aspects in Textiles, Fibres, Dyes, and Polymers (since 1963, currently in Phase VII)
2. CAS in Chemical Engineering (since 1990, currently in Phase IV)
3. UGC Networking Resource Centre in Chemical Engineering (since 2008)

4. CAS in Food Engineering and Technology (since 2008)
5. CAS in Pharmaceuticals Sciences and Technology (since 2009)
6. DRS for Department of Chemistry (2009)

Under the University with Potential for Excellence (UPE) programme of the UGC, the University of Mumbai had received support for establishment of Centre for Green Technology at the Kalina campus, which was mainly based on ICT's contributions and this Centre is now run in a joint collaboration.

Centres of Excellence were established in Energy Engineering due to the initiative of Department of Atomic Energy (DAE) and Department of Biotechnology (DBT), with a specific mandate in view of the expertise and accomplishment of the ICT.

1. DAE-ICT Centre for Knowledge Based Engineering (CKBE) (2002-2009)
2. DBT-ICT Centre for Energy Bio-sciences (2007-)
3. Homi Sethna ICT-DAE Centre for Chemical Engineering Education and Research (Both BARC and IGCAR, 2008-)
4. Centre of Excellence in Process Intensification for Process Industries (TEQIP-II, April 2013-)

Indeed, the ICT has earned the maximum number of collaborative projects with DAE establishments and the DAE acknowledges ICT's contribution to solving real problems, which covers (a) Chemical Engineering, (b) Process Technology, (c) Bio-technology, and (d) Materials Technology. Provision for an intake of 20 Ph.D. fellowships per year is an important feature of this Centre. There is a frequent exchange of scientists and students, leading to mutual benefit. A new building housing academic and energy engineering is planned and its construction will start soon to accommodate the state-of-the art high-end material characterization and instrumental laboratories, lecture and seminar halls, CAD-CAM laboratory and Computer Centre, research laboratories, pilot scale equipment, testing facility and services for the laboratories. We have also signed an MOU with the Homi Bhabha National Institute (HBNI), which is a DAE's deemed university, for academic and research collaboration.

The ICT's innovative work in the area of bio fuels and downstream processing, leading to commercialization, has been highly appreciated by the Department of Biotechnology (DBT), to establish the DBT-ICT Centre for Energy Biosciences, with induction of several faculties in bio area and Ph.D. fellowships. The modernized building and advanced equipment are a main source of attraction for visitors from abroad and industry. MOU was signed with International Centre for Genetic Engineering and Biotechnology (ICGEB) to foster collaboration among faculty, provide opportunities for students, scientists to gain global experience and to facilitate the advancement of knowledge on the basis of reciprocity.

Under the Funding for Infrastructure in Science and Technology (FIST) programme of Department of Science and Technology (DST), Govt. of India, we have received infrastructural support, to build advanced instrumental facilities in Departments of Chemical Engineering (Phase-I and Phase-II), Fibres & Textile Processing Technology (Phase-I), Food Engineering

and Technology (Phase-I), Pharmaceutical Sciences and Technology (Phase-I), Polymer and Surface Engineering (Phase-I).

The DST's PURSE programme had reviewed the research contributions of all universities in India and declared University of Mumbai as one of top universities; the contributions of ICT were overwhelming in research and we have received grant under this programme which will be utilized for renovation of library, e-library and creation databases useful for research and for benefit of chemical and allied industries. The second phase of PURSE has started for which performance of University of Mumbai was considered for the period 2000-2010 during which ICT was part of the research publications considered by the DST which has allotted Rs 15.5 Crore. We should get 50% funds from this programme. Grants have also been received from the AICTE under their various grants-in-aid schemes to remove obsolescence and promote research.

Over the years, because of the above mentioned programmes or schemes, which are highly competitive in nature, our laboratories are equipped with state-of-the-art instruments. Some of the sophisticated equipment which have been acquired and used continuously are:GC-MS, LC-MS, SEM, TEM, AFM, IC, FTIR, HP-TLC, HPLC, GC, XRD, DSC, DTA/TGA, AAS, Laser-Doppler anemometer,, image analysers, pore and particle size analysers, computer workstations, and many others. Advanced instrumental facilities have been created under industry sponsored projects as well. These instruments are operated by research students themselves, giving them a hands-on-training; this practice is greatly appreciated by the funding agencies and industries where they get employment.

All our UG students have to undergo a mandatory six -week in-plant training at the end of the third year in a manufacturing facility, for which handsome stipend is offered by the industry. The value of research at UG level is also recognized and every SAP department accommodates a few second year students as summer research fellows. Several students from other institutes are also accommodated by individual departments including the Summer Fellowship programme of national academies of sciences, operated by the Indian Academy Sciences, Bangalore under the Fellows tutelage.

COURSES OFFERED

BACHELOR'S COURSES

Admissions to B.Chem.Engg. and B.Tech. (Seven branches):

- a) 70% seats based on MT-CET 2015 score at State of Maharashtra Level.
- b) 30% seats based on JEE Main - 2015 score at All India (including Maharashtra) Level.

Admissions to B.Pharm.:

100% seats based on MT-CET 2015 score at State of Maharashtra Level.

- 1. Bachelor of Chemical Engineering (B.Chem.Engg.)**
- 2. Bachelor of Pharmacy (B. Pharm.)**

3. Bachelor of Technology (B. Tech.) in

- a. Dyestuff Technology
- b. Fibres and Textiles Processing Technology
- c. Food Engineering and Technology
- d. Oils, Oleochemicals and Surfactants Technology
- e. Pharmaceutical Sciences and Technology
- f. Polymer Engineering and Technology
- g. Surface Coating Technology

MASTER'S COURSES

1. Master of Chemical Engineering (M. Chem. Engg.)

(Full-time 2 - years & Sponsored 3 - years)

2. Master of Pharmacy (M. Pharm.) (Full-time 2-years) in

Pharmaceutics

Pharmaceutical Chemistry

Medicinal Natural Products

3. Master of Technology (M. Tech.) (Full-time 2-years & Sponsored 3 - years) in

Dyestuff Technology

Fibres and Textiles Processing Technology

Food Engineering and Technology

Oils, Oleochemicals and Surfactants Technology

Pharmaceutical Sciences and Technology

Polymer Engineering and Technology

Surface Coating Technology

Green Technology

Perfumery and Flavour Technology

4. Master of Technology (M. Tech.) (Full-time 2-years) in

Bioprocess Technology

Food Biotechnology

5. M.E. (Plastic Engineering) (Full-time 2-years & Sponsored 3-years)

6. M.Sc. (By Papers) (Full-time 2-years) in

Chemistry

Engineering Mathematics

Physics

Textile Chemistry

DOCTORAL COURSES

1. Ph.D. (TECH.) & INTEGRATED Ph.D. (TECH.) in

Bioprocess Technology
Chemical Engineering
Dyestuff Technology
Fibres and Textile Processing Technology
Food Biotechnology
Food Engineering and Technology
Green Technology
Nanotechnology
Oils, Oleochemicals & Surfactants Technology
Pharmacy@
Pharmaceutical Technology
Polymer Engineering and Technology
Surface Coating Technology

Plastic Engineering

Ph.D. (TECH.) in

Civil Engineering
Electrical Engineering
Electronics Engineering
Mechanical Engineering

@ Ph.D. (Tech.) in Pharmacy has following four branches:

Pharmaceutics
Pharmaceutical Chemistry
Pharmacology
Pharmacognosy

2. Ph.D. (SCI.) in

Biochemistry
Biotechnology
Chemistry (Inorganic/Organic/Physical)
Physics
Mathematics
Food Science
Textile Chemistry

All Ph.D. programmes are now redesigned with course work as per UGC regulations.

POST GRADUATE DIPLOMA

POST GRADUATE DIPLOMA IN CHEMICAL TECHNOLOGY MANAGEMENT (For Ph.D students offered simultaneously)

(1.5 years - 3 semesters) [conducted on Saturdays and Sundays only]

CERTIFICATE COURSE IN CHEMICAL SAFETY AND RISK MANAGEMENT

(Specially designed for all Master's students and offered simultaneously)

CULTURE OF ENDOWMENTS

Right from the foundation of the ICT in 1933, several endowments have been created, through munificent donations by philanthropists, industrial houses and alumni, for supporting maintenance of faculty positions, welfare of support staff, fellowships, visiting faculty, infrastructure, domestic and foreign travel, research, library, scholarships, infrastructure, gardens and emergency services. This is an outstanding attribute of the ICT. There are now 45 visiting faculty/fellowship endowments which have helped us immensely in attracting the best professionals to the Institute from all over the world. Visiting faculty interact with UG and PG students, faculty and alumni. The honoraria range from Rs. 5000 to 1.25 lakhs for a period of one day to 15 days. Some eminent faculty from institutes such as Massachusetts Institute of Technology, Purdue University, University of Twente, Groningen University, Monash University, University of California, Berkeley, University of California, Santa Barbara, National University of Singapore, Montreal, University of Michigan, Michigan State University, University of Alberta, RMIT Australia, IIT-Chicago, Cambridge University, University of Manchester, IIT-Bombay, IIT-Kanpur, IIT-Madras, National Chemical Laboratory, have taught UG and PG courses in ICT under the aegis of these endowments. These lectures form part of audit and credit courses for research students. Besides, public lectures are organized under each endowment.

The Industries and even individuals have instituted endowment chairs to attract best talent from India and Overseas.

1. R.T. Mody Professor of Chemical Technology and Director (1933)
2. Sir Dorabji Tata Reader in Pharmaceutical Chemistry (1943)
3. Singhanee Reader in Chemical Engineering (1936)
4. Singhanee Lecturer in Chemical Engineering (1936)
5. Singhanee Lecturer in Pharmacy (1943)
6. Singhanee Lecturer in Paint Technology (1946)
7. Singhanee Associate Lecturer in Chemical Engineering (1936)
8. Singhanee Associate Lecturer in Food Technology (1945)

9. Sir Homi Mehta Reader in Oil Technology (1943)
10. Sir Homi Mehta Associate Lecturer in Food Technology (1943)
11. Darbari Seth Professor of Inorganic Chemical Technology (1995)
12. BPCL Professor of Chemical Engineering (2001) Changed to Bharat Petroleum Distinguished Professor of Chemical Engineering
13. V.V. Mariwala Chair in Chemical Engineering (2004)
14. J.G. Kane Chair of Oil Technology (2008)
15. M. M. Sharma Distinguished Professor of Chemical Engineering (2009)
16. Narotam Sekhsaria Distinguished Professor of Chemical Engineering (2009)
17. R. A. Mashelkar Chair of Chemical Engineering (2009)
18. K. V. Mariwala - J. B. Joshi Chair of Chemical Engineering (2009)
19. Gunavati Kapoor Chair in Pharmaceutical Technology (2009)
20. Dr. John Kapoor lecturer in Pharmaceutical Technology (2010)
21. RCF Professor of Chemical Engineering (2012)
22. Dr. B. P. Godrej Distinguished Professor of Green Chemistry and Sustainability Engineering

The Institute offers Income Tax benefits to individual donors and industries under following 3 categories :

100% tax benefits under section 80G to individual and institute for general donors for specific purposes.

Donations under Corporate Social Responsibility (CSR) for various programs.

For research purposes under Section 35 within parenthesis & to sections 3C & 3E to support specific research programs including chair professorships and scholarships etc.

We have a grand plan of creating ICT foundation of Rs. 1,000 Cr under various programs and which will benefit the institute and all the stake holders immensely.

Satellite campus of at least 100 acres near the city of Mumbai is being requested from the state government.

COLLABORATIONS WITH OTHER INSTITUTES AND INDUSTRIES

The ICT has been held in high esteem by both Indian and foreign universities and institutes. A large number of Memorandum of Understanding (MOU) have been signed to have faculty and student exchange, research programmes and joint projects and symposia.

MOU from National Academics/Industries

Sr. No.	Name of Company	Year in which it has signed	Departments	National/ International
1.	Bharat Petroleum Corp. Ltd. (BPCL)	March, 2000	Department of Chemical Engineering	National
2.	Bhabha Atomic Research Centre, Department of Atomic Energy, Govt. of India	March, 2003	Department of Chemical Engineering	National
3.	Reliance Industries Ltd *	February, 2007	ICT	National
4.	International Centre for Genetic Engineering and Biotechnology, (ICGEB) New Delhi	February, 2007	DBT-ICT Centre for Energy Biosciences	National
5.	Homi Bhabha National Institute	April, 2007	Department of Chemical Engineering & Department of Pharmaceutical Sciences and Technology	National
6.	Shri V.V. Mariwala Chair in Chemical Engineering	August, 2007	Department of Chemical Engineering	National
7.	Department of Biotechnology, Govt. of India	March, 2008	Department of Chemical Engineering	National
8.	Department of Atomic Energy, Govt. of India	March, 2008	Department of Chemical Engineering	National
9.	Professor M.M. Sharma Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
10.	Dr. R. A. Mashelkar Chair in Chemical Engineering	April, 2008	Department of Chemical Engineering	National
11.	Shri Narotam Sekhsaria Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
12.	Dystar India Pvt. Ltd	March, 2010	Department of Fibres and Textile Processing	National

			Technology	
13.	Lanxess India Private Limited	April, 2010	ICT	National
14.	Hindustan Petroleum Corporation Ltd.	May, 2010	ICT	National
15.	General Mills Operations LLC *	May, 2010	DBT-ICT Centre for Energy Biosciences	National
16.	Tata Chemicals Limited	May, 2010	ICT	National
17.	Chemtrols Industries Limited	May, 2010	ICT	National
18.	Ishaan Industries	May, 2010	Department of Polymer and Surface Engineering	National
19.	Indian Institute of Technology, Bombay	May, 2010	ICT	National
20.	Department of Atomic Energy, Govt. of India	May, 2010	Department of Chemical Engineering	National
21.	TERI University	July, 2010	Department of Chemical Engineering	National
22.	Biotech Consortium India Limited	August, 2010	DBT-ICT Centre for Energy Biosciences	National
23.	Shri Kishore V. Mariwala - Professor J.B. Joshi Chair in Chemical Engineering	October, 2010	Department of Chemical Engineering	National
24.	University of Mumbai	November, 2010	ICT	National
25.	Veermata Jijabai Technological Institute (VJTI)	January, 2011	ICT	National
26.	Sah Petroleums Limited (SPL)	February, 2011	Department of Polymer and Surface Engineering	National
27.	FRP Institute *	March, 2011	Department of Polymer and Surface Engineering	National
28.	Pidilite Professor M.M. Sharma Distinguished Doctoral Fellowship	March, 2011	Department of Chemical Engineering	National
29.	Aker Powergas Pvt. Ltd. *	May, 2011	ICT	National
30.	Ishaan Industries	May, 2011	Department of Polymer and Surface Engineering	National
31.	North-East Institute of Sciences and Technology *	May, 2011	ICT	National
32.	Science for Society (Shri Vaibhav Tidke)	June, 2011	Department of Chemical Engineering	National

33.	Bombay Textile Research Association, Mumbai	June, 2011	Department of Fibres and Textile Processing Technology	National
34.	Bayer Crop Science Ltd.	July, 2011	Department of Chemical Engineering	National
35.	Hindustan Insecticides Ltd.	July, 2011	ICT	National
36.	Saffron Eagle Biofuels	August, 2011	DBT-ICT	National
37.	Rashtriya Chemicals and Fertilizers Ltd. (RCF)	October, 2011	Department of Chemical Engineering	National
38.	Central Institute for Research on Cotton Technology	December, 2011	Department of Fibres and Textile Processing Technology	National
39.	RCF Chair – Professor of Chemical Engineering	March, 2012	Department of Chemical Engineering	National
40.	Queensland University of Technology, Australia	March, 2012	ICT	National
41.	Bio-Rad Laboratories India Pvt. Ltd.	April, 2012	DBT-ICT Centre for Energy Biosciences	National
42.	Wool Research Association, Thane	April, 2012	Department of Fibres and Textile Processing Technology	National
43.	M/s Sanzyme Limited (Formerly Uni-Sankyo Limited)	May, 2012	DBT-ICT Centre for Energy Biosciences	National
44.	Trilok Food India	July, 2012	Department of Food Engineering and Technology	National
45.	Triple Pee Solution Pvt. Ltd. *	July, 2012	Department of Food Engineering and Technology	National
46.	Akzo Nobel India Ltd. (ANIL)	September, 2012	Department of Polymer and Surface Engineering	National
47.	Saife Vetmed Pvt. Ltd.	November, 2012	Department of Pharmaceutical Sciences and Technology	National
48.	Yokogawa, Middle East	November, 2012	ICT	National
49.	Privi Organics Pvt.	November, 2012	DBT-ICT Centre for Energy	National

			Biosciences	
50.	CSIR-Central Drug Research Institute (CDRI)	November , 2012	ICT	National
51.	Homi Bhabha National Institute, Mumbai	November , 2012	ICT	National
52.	Indian Institute of Chemical Technology, Hyderabad	November , 2012	ICT	National
53.	National Environmental Engineering Research Institute (NEERI), Nagpur	November , 2012	ICT	National
54.	National Chemical Laboratory, Pune	November , 2012	ICT	National
55.	Shivaji University, Kolhapur	November , 2012	ICT	National
56.	GlaxoSmithKline Consumer HealthCare Ltd., Gurgaon	November , 2012	ICT	National
57.	India Glycols Ltd. Uttarakhand	December, 2012	DBT-ICT	National
58.	College of Engineering, Pune	February, 2013	ICT	National
59.	Cellworks Research India Pvt. Lt.	February, 2013	DBT-ICT	National
60.	Dr. Netar Prakash Scholarship (Avensa)	March, 2013	ICT	National
61.	Sir Dorabji Tata Reader in Pharmaceutical Chemistry	March, 2013	Department of Pharmaceutical Sciences and Technology	National
62.	Unilever Industries Pvt. Ltd.	April, 2013	ICT	National
63.	Tata Chemical Ltd. for “Darbari Seth Chair of Inorganic Chemical Technology Endowment”	May, 2013	Department of Chemical Engineering	National
64.	CSIR-Indian Institute of Petroleum (IIP)	May, 2013	ICT	National
65.	North Maharashtra University, Jalgaon	June, 2013	ICT	National
66.	Kirloskar Integrated Technologies Ltd.	July, 2013	ICT	National
67.	EID Parry (India) Ltd.	Oct, 2013	ICT	National
68.	Institute of Science, Mumbai	January, 2014	ICT	National
69.	Glenmark Research Centre(Non Disclosure Agreement)	February, 2014	ICT	National
70.	Reliance Technology Group (Non Disclosure Agreement)	February, 2014	ICT	National
71.	Tata Institute of Social Sciences	April, 2014	ICT	National

72.	ONGC Energy Centre Trust	15th October 2014	ICT	National
73.	BURSA Technical University	24th February 2015	ICT	National
74.	Indian Oil Corporation Ltd.	16th April 2015	ICT	National
75.	Asian Paints Limited	16th May 2015	ICT	National
76.	National Institute of Warangal	25th March 2014	ICT	National
77.	Kanoria Chemicals & Industries Limited	30th January 2015	ICT	National
78.	Sinhgad Technical Education Society, Pune	7th January 2014	ICT	National
79.	Shri. Mayur B. Khairat	31st October 2014	DBT-ICT Center for Energy Biosciences	National
80.	Evonik Industries Pvt. Ltd.	11th February 2014	DBT-ICT Center for Energy Biosciences	National
81.	Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy Bhabha Atomic Research Centre (BARC) Trombay, Mumbai - 400 085	21st November 2013	ICT	National
82.	Dr K K G Menon Memorial Lecture Endowment	24th April 2015	ICT	National
83.	Enhancement of the Endowment Corpus of Bharat Petroleum Distinguished Professorship in Chemical Engineering	27th January 2015	Department of Chemical Engineering	National
84.	L'oreal India Pvt. Limited	12th June 2013	ICT	National
85.	Agilent Technologies	1st January 2014	ICT	National
86.	Zim laboratories ltd	16 th June 2014	ICT	National
87.	Department of Biotechnology. Ministry of Science and Technology Government of India. New Delhi	13 th July 2014	ICT	National
88.	Godrej industries Ltd.	2nd	ICT	National

		February 2015		
89.	MRS. PUSHPAL RAMESH MANTRI	15th January 2015	ICT	National
90.	Central pulp & Paper Research institute (CPPRI)	3rd March 2015	ICT	National
91.	Godrej Consumer Products Limited	23rd June 2015	ICT	National
92.	Unilever industries Privet limited	25th February 2015	ICT	National
93.	Evonik India Pvt. Ltd	1st July 2015	ICT	National
94.	Bharat Petroleum corporation limited	7th August 2015	ICT	National
95.	BPCL Senior Research Doctoral Fellowship	27th August 2015	ICT	National
96.	Marathi Vidnyan Parishad	23rd November 2015	ICT	National
97.	University of Petroleum and Energy studies, Dehradun	7th December 2015	ICT	National
98.	Siemens Limited	4th December 2015	ICT	National

List of MOU International Academic and Industries

Sr. No.	Name of Company	Year in which it has signed	Departments	National/ International
1.	University of Saskatchewan	March, 2008	DBT-ICT Centre for Energy Biosciences	International
2.	Dow Chemical International Pvt. Ltd.	July, 2008	Department of Chemical Engineering	International
3.	Queensland University of Technology, Australia	July, 2008	DBT-ICT Centre for Energy Biosciences	International
4.	Borouge Pte Ltd.	July, 2009	Department of Chemical Engineering and Department of Polymer and	International

			Surface Engineering	
5.	Deakin University, Australia *	2010	ICT	International
6.	Microsoft Corporation	2010	ICT	International
7.	University of Illinois at Urbana-Champaign	October, 2010	ICT	International
8.	Groupe Des Ecoles Des Mines (GEM)	December, 2010	ICT	International
9.	Royal Melbourne Institute of Technology (RMIT)	February, 2011	ICT	International
10.	University of Bradford	February, 2011	ICT	International
11.	University of British Columbia *	February, 2011	ICT	International
12.	Eli Lilly and Co.	May, 2011	Department of Pharmaceutical Sciences and Technology	International
13.	Merck Specialties Pvt. Ltd.	July, 2011	Department of Chemical Engineering	International
14.	South Illinois University, Edwardsville *	November, 2011	ICT	International
15.	ONTARIO Universities International	November, 2011	ICT	International
16.	British Council Division, India British High Commission	January, 2012	ICT	International
17.	The University of Nottingham	January, 2012	DBT-ICT	International
18.	Coca Cola Ltd.	November, 2012	ICT	International
19.	Ethiopian Textile Industry Development Institute (TIDI), Ethiopia	February, 2013	Department of Fibres and Textile Processing Technology	International
20.	Washington State University, USA	March, 2013	ICT	International
21.	Michigan State University, USA	June, 2013	ICT	International
22.	ADDIS ABABA Science and Technology University, Addis Ababa, Ethiopia	Sept, 2013	Department of Fibres and Textile Processing Technology	International
23.	Queensland University of Technology, Australia	Nov, 2013	DBT-ICT Centre for Energy Biosciences	International
24.	Universidad De Valencia (Spain)	February, 2014	ICT	International
25.	MAS FABRICS (PRIVATE)	6th August	ICT	International

	LIMITED, Colombo	2014		
26.	The Coco-Cola Company, Delaware, United States of America.	27th June 2014	ICT	International
27.	Essilor International (ESSILOR R&D CENTRE-Singapore)	3rd October 2014	ICT	International
28.	ESSILOR AMERA PTE LTD, Singapore	24th November 2015	ICT	International

AFFORDABILITY OF EDUCATION AND FINANCIAL ASSISTANCE

With regards to affordability of education, the ICT offers the best value for education in the nation. It is the cheaper than nearly all other engineering colleges in Mumbai and this is a remarkable fact given the high quality of the education that ICT offers. The fees are decided by the State Government and are the lowest for the quality of education and facilities provided by us. There are now 340 scholarships for UG students, ranging from Rs. 3000/- to 1.5 lakhs per year. A few scholarships take care of all fees, lodging and boarding. A large reason for this is the generosity of the Institute's huge and accomplished alumni body that includes some of India's leading industrialists, entrepreneurs and businessmen. Their donations have helped create several merit- and need-based scholarships that have helped fulfill the dreams of many students. A few alumni are mentoring some students, not only with monetary support but also continuous monitoring. This number is ever growing. Every student joining the institute should get some assistance. Many of our faculty members hold endowed chairs that have been solely instituted by the largesse of our alumni, philanthropists and industries. A few great souls have ever bequeathed their property to the institute. Additionally, the high impact and original research being conducted in our laboratories has attracted the interest of many industries, funding bodies and government agencies, and research groups have been duly awarded with sizable funds for attracting talented young researchers and graduate students and purchasing state-of-the-art equipment. This has helped the Institute to offer full merit- and need-based scholarships even at the post-graduate level and has greatly aided in keeping education costs at low levels. ICT committed to help students, who need assistance of any kind. This tradition has evolved over the years through the selfless services of the faculty and alumni. No other institution in the nation matches the Institute of Chemical Technology in offering scholarships. Almost 52% students admitted to the ICT are on freeships in tuition fees as per government norms. It has been our endeavour to provide assistance to all needy students. The only expectation is to have a desire to study and sincere efforts to overcome barriers. The Ministry of Finance (Department of Revenue, Central Board of Direct Taxes) has granted the ICT a privilege by which 100% income tax benefits to donors for all donations under 80G. Also under notification issued on 16th April, 2015, under section 35 of Income Tax Act 1961 (clause ii, sub-section (1) with rules 5C and 5E of the IT rules, 1962) for donations for scientific research are eligible for tax benefit which is

175%. The companies can also contribute to the ICT for many of its welfare and societal programmes under the Corporate Social Responsibility (CSR) requirement.

TRAINING AND PLACEMENT

There is no chemical and allied industry in the country that does not employ graduates of the ICT. Alumni are at the helm of affairs of a large number of renowned chemical industries. A placement cell is functional with the participation of the UDCT Alumni Association (UAA) to assist campus placement which begins in the month of July, and continues throughout the year, before the students graduate. The Institute's graduates are highly-sought after by the Indian and global chemical industry and their salaries rank among the highest in the country, even dwarfing the salaries of graduates of the premier branded institutes; placements achieved via campus interviews fetch emoluments ranging from Rs. 3.50 to Rs 14.00 lakhs per annum. What is most striking is that these placements are in hard-core industries relevant to the students training and education. With regards to post-graduate research opportunities, a good number of ICTs graduates are offered admission by some of the world's best universities to pursue graduate studies. The Institute is one of the few institutions in Asia that is regularly represented in the graduate student bodies of prestigious institutes such as the Massachusetts Institute of Technology, Stanford University, University of California, Berkeley, Caltech, UCSB, Princeton, University of Michigan, Ann Arbor, University of Texas, Carnegie Mellon University, Purdue University, University of Massachusetts, Cambridge University, Imperial College, Manchester University, Twente University, Monash University, to name a few. All of them receive full financial support. Several universities write to us to recommend good students. Leading foreign universities have signed MOUs for student exchange through proper support for the exchange. This would not have been without the merit of the students, and reputation of faculty and institute. On an average, about 75 students from various degree programmes get such fellowships. Quite a few Ph.D. holders go abroad for post-doctoral studies in reputed institutes; this is directly linked to the quality of research produced and personal standing of the faculty in international community.

LIBRARY AND INTERNET

The Professor M.M. Sharma Library is a treasure house of books, leading journals, encyclopaedias, reports, theses, abstracts, reference books, microfilms, guides, text-books, and rare volumes, not found in most of the libraries in the country. Except four public holidays in a year, the library is always open for 12 hours on all working days and for 7 hours on public holidays. Several readers including industrialists are frequent visitors to the library and some of them have organizational membership. Although we have adequate intranet and internet facilities (both LAN and wi-fi) in the Information Processing Centre (IPC), we have recently undertaken a massive revamping exercise to enhance bandwidth and accessibility. The students have been provided with smart i.d. cards. to access library facilities. The INFLIBNET, DELNET, and INDEST consortia memberships are also accorded to our library, having access to the latest publications. Plans are afoot to renovate the library building aesthetically and

provide faster e-accessibility for readers. In the IPC, as well as, in all UG and PG labs, we have provided computers with relevant software, numbering over 700. The entire campus is now wired and security surveillance is in place.

DISTINGUISHED ALUMNI AND FIRST GENERATION ENTREPRENEURS

The ICT has been cited as a role model for industry-institute-government relationship. Several first generation entrepreneurs in chemical and allied industries, numbering over 500 are the alumni of the institute. They have pioneered in setting up of many chemical industries in and around Mumbai and in Western India. A galaxy of world-renowned scientists, academics and industrialists including fortune-500 personalities –who’s who- have been our alumni and some of these luminaries are our pride and proponents of the legacy:

Some Distinguished Alumni

Sr. No.	Name of the Person	Company
1	Mr. J. P. Agarwal	Ishita Drugs & Industries Ltd.
2	Mr. M. G. Alexandar	New India Chemical Enterprises
3	Dr A. B. Amin	Aromax Chemicals
4	Dr. R. Y. Angle	Priya Chemicals
5	Dr. R. A Bakshi	Consultant
6	Dr. A. G. Belekar	Esbe chem products
7	Mr. C. G. Bengani	STP limited
8	Mr. Pradip bhat	Jairaj Phospate
9	Mr. N. V. Bhagwat	Quality Industries
10	Mr. G. L. Bhatia	Alliance Engineering Company
11	Mr. G. S. Bhargava	Kohinoor Paper Product
12	Dr. H. V. Borgaonkar	Borg Cheminova Pvt.ltd.
13	Dr. B. H. Chalishazar	Dr. B. H. Chalishazar & Associates
14	Mr. Dinesh Dalal	Corona Chemicals Co.
15	Mr. M. D. Darji	Borg Cheminova Pvt.ltd.
16	Mr. A. J. Desai	Anupam Rasan
17	Mr. U. M. Dewal	Ashu organics (I) Pvt. Ltd.
18	Mr. P. P. Dey	Solar Dye Chem Pvt. Ltd.
19	Mr. N. V. Dhekne	Hercules Speciality Chemicals India Pvt. Ltd.
20	Mr. M. R. Doshi	Progress in paper Recycling
21	Mr. K. R. Ganatra	Palchem Associates
22	Mr. L. N. Gandhi	Modhera Chemicals P. Ltd.
23	Mr. K. H. Gharda	Gharda Chemicals Ltd.
24	Mr. Vineet Gupta	Azide & Allied Chemicals
25	Mr. N. K. Gurka	Thermopads Pvt. Ltd.
26	Mr. H. V. Gogri	Alchemie Laboratories

27	Mr. R. V. Gogri	Arti Organics Ltd.
28	Dr. K. Gokul Chandra	ABR organics Limited
29	Mr. A. C. Gosavi	Kleenair Systems
30	Dr. A. B. Gupta	Armour Group
31	Mr. Saiprasad Jadhav	Avinash Chemicals
32	Mr. M. K. Jadliwala	Panchmahal Dyestuff Industries
33	Mr. G. D. Jasuja	Indian Industrial & management Services
34	Mr. H. M. Jatia	Indian Metal Powder Industries
35	Mr. K. P. Jhamvar	Subhash Chemical Industries
36	Mr. Y. H. Jhaveri	Vasu Chemicals
37	Mr. S. I. Joshipura	Vivid Colors Ind. Pvt. Ltd.
38	Dr. D. H. Kapadia	D. H. Organics
39	Mr. R. M. Kedia	Kedia Chemicals Ind. Pvt. Ltd.
40	mr. P. H. khatiwala	Arlabs Limited
41	Mr. Y. M. Kothari	Alkyl Amine Chemicals Ltd.
42	Mr. N. D. Kulkarni	Ameya Engineers
43	Mr. Vinay Kumar	Micro planet ltd.
44	Mr. S. M. Lagu	Fibro chem
45	Mr. K. G. laijawala	Canning Mitra Phonix Ltd.
46	Mr. S. M. mahadik	Chembond Chemicals Ltd.
47	Mr. A, H, Mahajan	Retrot Chemicals
48	Mr. V. S. Mehata	Krishna Dyestuff Industries
49	Mr. S. B. Mody	J. B. Chemicals & Pharamaceuticals
50	Dr. L. G. K. Murthy	Nuclear Power Corporation
51	Mr. K. narayanswami	Krishna Consultancy Servises
52	Mr. S. S. nayak	Nimisha marketing Agencies
53	Mr. Vilas Nikam	Torna Engineering
54	Mr. J. J. Oswal	Kankoo Paints & Varnish Co.
55	Dr. V. S. Palkar	Nivedita Chemicals Pvt. Ltd.
56	Mr. C. M. Patankar	Retrot Chemicals
57	Mr. M. S. Patankar	Yash consultants
58	Dr. Bakul Patel	Saptrang Industries
59	Mr. S. B. Patel	Dutron Plastics Pvt. Ltd
60	Mr. J. S. Patel	Shankar Chemical Works
61	Mr. P. H. Patil	Crystal Solvents P. Ltd.
62	Mr. P. H. Patil	Link Pharma Chem. Ltd.
63	Mr. Sudhir Patil	Galaxy organics (P) Ltd.
64	Mr. M. B. Parekh	Pidilite Industries Ltd.
65	Mr. K. K. Parikh	Synthetic Drugs & Intermediates
66	Mr. S. M. Parikh	Macro Polymers Pvt. Ltd.
67	Mr. V. P. Pednekar	Nikita Tranphase Adducts Pvt. Ltd.
68	Mr. U. Purohit	Triume Chemicals

69	Dr. V. Purnaprajna	Shri Chem research laboratories pvt. Ltd.
70	Mr. Lalit Raghani	Nishita Techno
71	Mr. S. N. Rao	Supreem pharmaceuticals
72	Mr. Sanjeev Rane	Ayro oil Industry
73	Dr. K. Anji Reddy	Dr. Reddy's laboratories
74	Mr. K. P. Sankhe	Edeq Corporation
75	Mr. P. R. Sanghavi	Rahul Photograph Co. Pvt. Ltd.
76	Mr. M. H. Savla	Valient Chemical Corporation
77	Mr. P. A. Sevekari	Elite management Consultants
78	Mr. A. K. Shah	Vikash Color Agencies (P) Ltd.
79	Mr. S. D. Shah	Aroma Chemicals
80	Mr. P. P. Shah	Beeta paints Industries
81	Mr. J. C. Shah	Shri Rajpipala Amar Carbon & Chemical Ind.
82	Mr. V. D. Shah	Chembond Chemicals Ltd.
83	Mr. R. N. Shah	Metpro Chemicals
84	Mr. K. B. Shamain	R. K. S. Consultancy Services
85	Mr. U. Shekhar	Galaxy organics (P) Ltd.
86	Dr. G. R. Shenoy	Shaper Chemicals Ltd.
87	Mr. Shirsaokar	Brasica Pharma
88	Mr. M. S. Shroff	Nava Plast Ind. Pvt. Ltd.
89	Mr. N. S. Sule	Ameya Engineers
90	Mr. Dhanubhai Upadhyay	J. P. Brothers
91	Mr. M. H. Vekaria	Shri Colosperese Pvt. Ltd.
92	Me. M. D. Vakil	Belami Fine Chemicals P. Ltd.
93	Mr. J. S. Vasani	Bentec Organoclays P. Ltd
94	Mr. Nandkumar Venkatraman	Transtech services
95	Mr. N. G. Walame	Consafe Science (India) Pvt. Ltd

Several of our alumni have come from abject poverty, with limited resources, born of illiterate or semi-literate parents, and having studied in vernacular media; they have excelled themselves in life, attained positions of prominence and made ICT proud by their stellar achievements. Many have created unprecedented value for their companies through their ingenuity and hard work, and some of our alumni are famous CEOs or managing directors of the nation's and world's mega companies and organizations. The reputation of the Institute of Chemical Technology and its graduates is unparalleled in India and abroad and it is not all that surprising to find that our alumni body boasts several Padma awardees (Padma Vibhushan, Padma Bhushan and Padmashree) in its ranks.

On an average, until 1980s, 20-30% of graduates from every class have started their own industries as SME or MMEs; consultancy and design companies. Most of them did not have any family background in business and have literally created empires out of nothing. The ICT

has continued to be an oasis of generating new knowledge and creating wealth. In order to sustain the entrepreneurship culture, a part-time 3-semester certificate course in Chemical Technology Management for Ph.D. students was started in 2001 with the participation and support of the UDCT Alumni Association; it has been converted into a 2-year Diploma course from January 2010. We have also established an Entrepreneurship Development Cell very recently.

THE TECHNOLOGICAL ASSOCIATION (TA)

The Technological Association (TA), established in 1951, is the student body of ICT that conducts co-curricular and extra-curricular activities throughout the academic year. This 23-member strong team is presided by the Vice-Chancellor and a Vice President. Cultural activities, including those related to music, dance, and art, English and non-English literature are organized by the clubs. On-campus, award winning festivals are also held such as the annual technical festival of the institute, Vortex, that allows students from all over the country to present their innovative ideas and research work and also solve industry defined problems. The annual inter-college cultural festival, Manzar has a plethora of programs, specifically concerts and workshops that serve to enrich the cultural aspect of the institute. Also, the intra-college festival, FunTech, is the oldest event on campus and involves several sporting and cultural events for all the students ICT. SportSaga is the annual inter-college sports festival of the institute that includes both, mainstream sporting as well as informal events and also conducts the trademark ICT Marathon each year. The in-house technical journal, Bombay Technologist is also run under the purview of the TA and encourages the art of scientific writing among students. An entrepreneurship cell (E-Cell) was also launched recently that serves to enhance the entrepreneurial culture at ICT. The TA also addresses student grievances and serves as a link between the faculty members and the students.

THE UDCT ALUMNI ASSOCIATION

The UDCT Alumni Association (UAA), founded in 1989, with a current membership of over 5000, not only has past students as members but also several others who are our well wishers, without being formal graduates. Some alumni chose to come to us due to the influence of acquaintances and hearing their success stories, whereas some have landed by a passion to do a course offered by us. Once they become our students, we take care of them by standing with them in times of thick and thin. They have reciprocated to the institute in ample measures. The alumni are one of our greatest strengths. Without their support, love and affection for the institute, the ICT would not have been where it is today. When the alumni of different vintage meet for the first time and come to know they are UDCT alumni, a very affectionate bond is developed instantaneously. The older they grow, the more eager they are to visit the campus and peep through the classrooms and sit on the benches where they sat and had their moorings. They reminisce and enjoy; some have eyes in their tears in gratitude. Some visit the hostels to have nostalgic memories of the mess food and the rooms where they dwelled; some bring their families and meet 'old' professors to catch with time. Some have changed their attires and

accents, look prosperous and happy, whereas some are the same simpletons still fearing the grades they would perhaps get! Let me assure, the value of being an alumnus of this great institute is beyond description. Our class reunions of decades, two decades, silver jubilee, golden jubilee during the month of December is a chance to meet and have fun and frolic. You have to be an alumnus to witness such a great camaraderie. In fact, many current students have sought admission to the institute due to advice of our alumni. All current students can enrol into the membership to carry on the legacy. The UAA has been our constant source of help and inspiration. Financial assistance provided by the UAA in training, placement, factory visits, scholarships, prizes, field trips, sports, intercollegiate festivals and social service is beyond words. The UAA completed its Silver Jubilee and grand function is arranged on 11th May 2014 to coincide with the National Technology Day.

SPLENDOUR AND SERENITY OF CAMPUS

The campus is located in one of the best, quietest, and beautiful neighbourhoods of Mumbai and is in the vicinity of some other prestigious Mumbai schools and institutions. Living in Mumbai is an unforgettable experience and the very fact that it is considered one of the most vibrant cities in the world is testament to this. No city this large is as safe and hospitable. The hostels of the Institute are among the best equipped in the nation and students have access to computing, internet, television and laundry facilities. The Institute has hostels for boys, girls as well as post-graduate students. In addition, we believe that a healthy body is essential for a fertile mind and our campus also boasts of several athletics facilities. A few courses/workshops are conducted for the benefit of the students like yoga, stress management, time management, interpersonal skills, communication skills, presentation skills and interview skills. The Bombay Technologist is an annual technical journal of the Technological Association, started in 1951. The journal publishes technical articles written by the students and the faculty of the Institute. The Institute publishes in-house student magazine, 'The Spirit', in which students contribute on non-technical topics. Dr. B.P. Godrej Students' Centre provides facilities for indoor games. The necessary sports materials as well as music instruments for cultural activities are provided. We have built in 2016 a fully functional and well equipped sport facility within the campus.

The vibrancy of Mumbai rubs onto our students and the cultural events on campus that are organized and coordinated entirely by our students have become local attractions. Our faculty members strongly encourage our students to think creatively and one of the requirements for creative thinking is the ability to express oneself creatively, be it in the classroom, on the playfield or on the stage.

The entire campus is given a face lift in near future to reflect ICT's world-class status. Construction of a new faculty tower, academic and energy engineering block has just begun. A new ladies hostel will also be built. Classrooms, lecture halls and offices are being renovated. To make effective use of the infrastructure, a staggered time table for classes and laboratories will be implemented. A concept of eco-campus incorporating use of solar powered lights and air-conditioning, biogas generation, treatment and reuse of grey water, rain-water harvesting, and LED lighting is being worked out to minimize water and energy usage. One can visit the

homepage of ICT for seeing the 360 degree panoramic view of the entire campus. (www.ictmumbai.edu.in)

IS THE FUTURE AS BRIGHT?

Reaching the zenith is one part of story but remaining there without being complacent is the most difficult part and challenging. Unless we innovate in all aspects of academic, research, administrative and industrial activities, we will not be able to make a dent in future. Technology is a capital and ICT has been fully geared to develop new technology in its sphere of activities to sustain the growth and glitter. You could be part of this process.

I would like to give a glimpse of some the plans which we have made. Thus frontiers of research where we have now focused are:

- Biotechnology & Biomedicine
- Nanotechnology and Materials Science
- Energy Science and Engineering
- Process Systems Engineering
- Green Chemistry and Engineering
- Environmental Protection and Hazardous Waste Management
- Product Engineering

Under the aegis of these areas, our research shall focus on:

- Developing greener chemical processing platforms producing a much wider range of products; green technology; product engineering.
- Developing technologies for generating, storing and transporting unlimited and inexpensive energy sources; energy engineering
- Developing therapy strategies for incurable diseases; pharma and healthcare.
- Designing better materials whose properties can be predicted, tailored and tuned; materials engineering; nanotechnology

Plans for future expansion have been made for creation of a series of Centres of Excellence::

1. Entrepreneurship resource centre
2. Interactive student services portal
3. Centre for Undergraduate Research In Engineering (CURIE)
4. Centre for Process Intensification and Innovation
5. Centre for Product Engineering
6. Centre for Infectious Disease Control and Prevention
7. Technology Incubation Centre
8. Technology Transfer Cell

9. Creation of Visiting Professorships endowments
10. Distinguished Adjunct Professors
11. Group consultations: Adoption of sick industries.
12. Increasing international collaborations (Joint projects with leading institutes (Joint degrees , UG exchange, PG exchange)
13. Creation of institute professorships

The new courses started in 2010-11 were M. Sc. (Chemistry and Textile Processing) and M. Tech. in Green Technology (multi-disciplinary; 4-semester full time; extended 6-semester for industrial practitioners) and in the year 2014 M.Sc (Physics-Materials) is started.

CLOSING REMARKS

Great institutes are not built overnight. My experience as an academic, researcher, consultant to industry, member of several important professional bodies and government committees, and my interactions with alumni, government officials, faculty from leading institutes in India and abroad, have revealed a trend- that is- quality of education, the brand name of institute and future prospects, far outweigh any other consideration on the minds of students and employers alike, while choosing an institute, than the cost of education.

If anybody gets selected through our admission process, which is transparent and strictly on merit, with all government policies in place, my congratulations and best wishes to them. The opportunities that lie in store for them will truly be enormous.

The Rich. The Poor. The Marginal. The Privileged. The Underprivileged They studied here. They made it BIG.

Do not ask how to do. Do it. Underestimate NOT, who you could be. Think Big. Dream Big. Do not dismiss your dreams. To be without dreams is to be without hope; to be without hope is to be without purpose.

Profile of the Institute of Chemical Technology

1. Name and Address of the University:

Name :	Institute of Chemical Technology	
Address :	Nathalal Parekh Marg, Matunga, Mumbai – 400019	
City : Mumbai	Pin : 400 019	State : Maharashtra
Website :	www.ictmumbai.edu.in	

2. For Communication:

Designation	Name	Contact Numbers	Email
Vice Chancellor	Prof. G. D. Yadav	O : 02233611001 M : 9833090510 F : 02233611020	vc@ictmumbai.edu.in
Registrar	Prof. S. S. Lele	O : 02233611016 M : 9619423666 F : 02233611020	registrar@ictmumbai.edu.in
Steering Committee/ IQAC Co-ordinator	Prof. V. G. Gaikar	O : 02233611028 M : 9920446256 F : 02233611020	vg.gaikar@ictmumbai.edu.in

3. Status of the University:

- State University
 State Private University
 Central University
 University under Section 3 of UGC (Deemed University)
 Institution of National Importance
 Any other (please specify)

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

4. Type of University :

- Unitary
 Affiliating

<input checked="" type="checkbox"/>
<input type="checkbox"/>

5. Source of funding:

Central Government

State Government

Self-financing

Any other (please specify)

✓

6. (a) Date of establishment of the University: 12th September 2008

(b) Prior to the establishment of the university, was it a/an:

PG Centre	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Affiliated College	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Constituent College	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Autonomous College	Yes	✓	No	<input type="checkbox"/>

Any other (please specify)

If yes, give the date of establishment: 1st October, 1933

7. Date of recognition as a university by UGC or any other national agency:

	Under Section	Date	Month	Year	Remarks
i	2f of UGC	-	-	-	-
ii	12B of UGC	-	-	-	-
iii	3 of UGC	12	09	2008	MHRD Notification No.F.9-61/2005-U.3 dated 12 th September, 2008 declaring Deemed to be University Under Section 3 of UGC Act 1956.
iv	Any other (specify)	-	-	-	-

8. Has the University recognized?

(a) By UGC as a University with Potential for Excellence?

Yes No

(b) For its performance by any other governmental agency?

Yes No

If yes, Name of the agency: MHRD, GOI, State Government of Maharashtra

Date of recognition: Elite Status by Government of Maharashtra on 12th April, 2012.

9. Does the university have off-campus centres?

Yes No

10. Does the university have off-shore campuses?

Yes No

11. Location of the campus and area:

		Location	Campus area in acres	Built up area in sq. mts
i	Main campus area	Matunga (East)	16 acres	47022.57 sqm
ii	Other campuses in the country	NA		
ii	Campuses abroad	NA		

- **Provide information on the following: In case of multi-campus University, please provide campus-wise information.**

➤ **Auditorium/Seminar complex with Infrastructural Facilities:**

Two Auditoria in the Campus with All required facilities

➤ **Sports Facilities:**

Playground, Gymnasium and Indoor Game Facilities, Lawn Tennis Court, Futsal Ground, Badminton Court, Basketball Court.

➤ **Hostels :**

- **Boys Hostel**

i. **Number of hostels** : 3

ii. **Number of inmates** :

Hostels	Intake Capacity	No. of Students Residing
Hostel No.2	149	159
Hostel No.4	66	62
Hostel No.5	365	331

iii. Facilities : Newspaper, Magazines, Television Room, Internet Facility (24x7), Electricity and Water Supply (24x7), Fire Extinguishers, Lifts in Hostel No.5

• **Girls Hostel**

i. Number of hostels : 2

ii. Number of inmates :

Hostels	Intake Capacity	No. Of Students Residing
Hostel No.1	263	259
Hostel No.3	121	120

iii. Facilities : Newspaper, Magazines, Television Room, Internet Facility (24x7), Electricity and Water Supply (24x7), Fire Extinguishers,

• **Working women's hostel** : Not Available

- **Residential facilities for faculty and non-teaching** : Yes
- **Cafeteria** : Yes (02)
- **Health centre** : Yes
- **Facilities like banking, post office, book shops, etc.** : Available across the street on the main gate
- **Transport facilities to cater to the needs of the students and staff** : The Institute is well connected by public transport
- **Facilities for persons with disabilities** : Ramp and hand rails at crucial places
- **Animal house** : Yes
- **Incinerator for laboratories** : Yes
- **Power house** :
There is no need of separate power house in the campus as in Mumbai electricity is supplied 24x7 and for specialised equipments, battery operated, UPS are installed.
- **Waste management facility** : Yes

13. Number of institutions affiliated to the university

Type of Colleges	Total	Permanent	Temporary
Arts, Science and Commerce	NA	NA	NA

Law	NA	NA	NA
Medicine	NA	NA	NA
Engineering	NA	NA	NA
Education	NA	NA	NA
Management	NA	NA	NA
Others (specify and provide details)	NA	NA	NA

14. Does the University Act provide for conferment of autonomy (as recognized by the UGC) to its affiliated institutions? If yes, give the number of autonomous colleges under the jurisdiction of the University

Yes No Number

15. Furnish the following information:

Particulars	Number	Number of Students
a. University Departments		
Undergraduate	7	983
Postgraduate (Including Ph.D.)	11	1015
Research Centers on the Campus (PG)	2	72(DBT)+(DAE)
b. Constituent colleges	-	NA
c. Affiliated colleges	-	NA
d. Colleges under 2(f)	-	NA
e. Colleges under 2(f) and 12B	-	NA
f. NAAC accredited colleges	-	NA
g. Colleges with Potential for Excellence (UGC)	-	NA
h. Autonomous colleges	-	NA
i. Colleges with Postgraduate Departments	-	NA
j. Colleges with Research Departments	-	NA
k. University recognized Research Institutes/ Centres	-	2

16. Does the university conform to the specification of Degrees as enlisted by the UGC?

Yes No

If the university uses any other nomenclatures, please specify

17. Academic programmes offered by the university departments at present, under the following categories:

Programmes	Number
UG	9
PG	20
Integrated Masters	0
Ph. D.	29
Integrated Ph. D.	29
Certificate	1
PG Diploma	1

18. Number of working days during the last academic year : 280
19. Number of teaching days during the past four academic years : 180 X 2
20. Does the university have a department of Teacher Education?

Yes No

21. Does the university have a teaching department of Physical Education?

Yes No

22. In the case of Private and Deemed Universities, please indicate whether professional programmes are being offered?

Yes No

23. Has the university been reviewed by any regulatory authority?

Yes (National Board of Accreditation)

If so, furnish a copy of the report and action taken there upon.

Please See the Appendix 1 (Pg. No. 848)

24. Number of positions in the University:

Positions	Teaching Faculty			Non-teaching Staff	Technical Staff
	Professor	Associate Professor	Assistant Professor		
Sanctioned by	24	35	40	93	154

UGC/University/ State Government					
Recruited	08	20	31	51	102
Yet to recruit	16	15	09	42	52
Parmanent Endowment positions	9	7	6	-	-
Number of Persons working on contract basis	-	-	-	-	-

25. Qualifications of the teaching staff :

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	7	1	14	4	18	10	54
M.Phil.	-	-	-	-	-	-	-
PG	-	-	1	1	2	1	5
Endowment Teachers							
Ph.D.	8	1	7	-	6	-	22
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-
UGC/FRP Teachers/DBT							
Ph.D.	1	-	-	-	16	12	29
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

26. Emeritus, Adjunct and Visiting Professors :

	Emeritus	Adjunct	Visiting
Number	7	5	102

27. Chairs instituted by the university:

	Chairs
School/Department (Endowment)	22

28. Students enrolled in the university departments during the current academic year, with the following details:

Students	UG		PG		Integrated Masters		Ph. D.		Integrated Ph. D.		Certificate		PG Diploma	
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
From the State where the University is located	141	71	99	92	-	-	33	12	-	-	-	-	-	-
From other States of India	26	7	29	26	-	-	5	3	1	-	-	-	-	-
NRI Students	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Foreign Students	-	-	4	1	-	-	-	-	-	-	-	-	-	-
Total	167	78	132	119	-	-	38	15	-	-	-	-	-	-

*M-Male, *F-Female

29. Unit cost of education :

(a) Including the Salary Component : **Rs. 152873.96**

(b) Excluding the Salary Component : **Rs. 55650.214**

30. Academic Staff College : No

31. Does the university offer Distance Education Programmes (DEP)?

Yes No

32. Does the university have a provision for external registration of students?

Yes No

If yes, how many students avail of this provision annually?

33. Is the university applying for Accreditation or Re-Assessment? If Accreditation, Name the Cycle.

Accreditation: Cycle 1

34. Does the university provide the list of accredited institutions under its jurisdiction on its website? Provide details of the number of accredited affiliated / constituent / autonomous colleges under the university. NA

35. Date of establishment of Internal Quality Assurance Cell (IQAC) and dates of submission of Annual Quality Assurance Reports (AQAR) to Vice-Chancellor

IQAC 17th September, 2009
AQAR 22nd December, 2015

36. Any other relevant data, the university would like to include (not exceeding one page).

CRITERIA-WISE REPORTS

Criterion I - Curricular Aspects
Criterion II – Teaching, Learning and Evaluation
Criterion III - Research, Consultancy and Extension
Criterion IV - Infrastructure and Learning Resources
Criterion V - Student Support and Progression
Criterion VI - Governance, Leadership & Management
Criterion VII - Innovations and Best Practices

CRITERION I : CURRICULAR ASPECTS

1.1 Curriculum Design and Development

1.1.1 How is the institutional vision and mission reflected in the academic programmes of the university?

Vision :

Institute of Chemical Technology shall perennially strive to be a vibrant institute with continuously evolving curricula to brighten the future of the chemical, biological, materials and energy industries of the nation, and rank amongst the very best in the world through active participation and scholarship of our faculty, students and alumni. We shall be creators of sprouting knowledge and design cutting-edge technologies that will have the greatest impact on society and benefit mankind at large.

Mission:

Institute of Chemical Technology shall generate and sustain an atmosphere conducive to create new knowledge at every available opportunity. We shall enabling education to students to devise new solutions to meet the needs of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources.

Our endeavours, while extending well beyond the confines of the classroom, will aim to enhance public welfare and our attempts to disseminate knowledge will spread to a greater multi- and cross-disciplinary platform to conduct research, discovery, technology development, service to industry and entrepreneurship, in consonance with India's aspirations to be a welfare state.

We will provide all our students with a strong foundation to encourage them to be our ambassadors in the professional activities that they choose to undertake in service of society at national and international levels. Through our vision, we will serve the profession and society and strive to reach the summit as a team, and ultimately serve as role models to the younger generation.

These academic & research programmes are designed in areas of chemical, biological, materials and energy sciences keeping in mind needs of relevant industries. The ICT has currently 31 programmes with over 550 full time PhDs with full fellowship, 493 Masters Students with fellowships, and 983 UG students.

Established in 1933 as a Department of Chemical Technology of University of Mumbai, the Institute of Chemical Technology (ICT), has grown into a **Deemed University** on the basis of its outstanding contribution to Chemical Engineering, Chemical Technology and Pharmaceutical Sciences, Biotechnology and allied sciences. ICT is one of the top performing institutions of the country and renowned internationally because of the highest number of PhDs, peer refereed publications in reputed international journals, and patents per faculty, PG/UG ratio and cost-effectiveness of its outcome. The very first Ph D in Engineering and Technology in India was awarded by ICT in 1942. ICT's close relationship to the chemical and allied industry has resulted in relevant research programs with a high level of innovations, large consultancy programs, a dynamic curriculum development process and a high level of involvement from the industry. Its highly motivated and qualified faculty and talented students have an outstanding history of academic achievements. ICT's vibrant research culture is a symbiosis of academic excellence and practical relevance with generation of knowledge in frontier areas of Chemical Engineering and Technology that is put in industrial practice over past 82 years. MHRD, GoI, has rated ICT with **Grade A** along with TIFR, TISS and CFRI, from the State of Maharashtra. Based on its spectacular performance and brand value, the ICT was granted an Elite Status and Centre of Excellence on par with IITs, IISc and IISER by the State of Maharashtra in the State Assembly on April 20, 2012 which will enable to maintain its apex position as an institution *par excellence*.

1.1.2 Does the university follow a systematic process in the design and development of the curriculum? If yes, give details of the process (need assessment, feedback, etc.).

The UG and PG Curricula are revised every five years. The process of revision is initiated at departmental level advisory committee meetings. The role of the Advisory Committee is to assist the Department/Centre in formulating vision, research, **academic programmes**, industrial connectivity, and placement. The Committee meets at least twice in a year to review the performance of the Department/Centre and presents a report to the Board of Management.

The composition is as follows:

1. Senior Distinguished Alumnus or Board Member (Chairman)
2. Two Distinguished Alumni either from industry or academia under the condition that both will not be from the same profession (academia/industry)

3. Renowned Alumnus from other institute
4. Alumnus who graduated within last 10 years
5. Senior faculty from other Department
6. Dean (AP)/Dean (RCRM)
7. One Associate Professor or Assistant Professor from the concerned Department
8. Department faculty members
9. Head of the Department (Member Secretary)

The internal assessment is a direct result of discussions amongst faculty members and other stake holders of the Institute in Staff Meetings and Academic Bodies, such as Undergraduate programme committee, Postgraduate programme committee, Academic council, Feedback from Students and Industry. This has resulted into an analysis of the strengths and weaknesses of the Institute and helped in curricula framing. Based on the suggestions received at every above mentioned levels they are discussed and incorporated in curriculum and finally approved after evaluation and debate in Academic Council.

1.1.3 How are the following aspects ensured through curriculum design and development?

*** Employability :**

The Institute projects a unique combination of basic sciences, engineering and specialized technology areas related to chemical industry, biotechnology and chemical technology. The multidisciplinary courses offered by the Institute are unique and impart the technical education of the finest quality to the students which enables them to acquire position in industry or higher education. The graduates of the Institute are readily absorbed, mostly with full scholarships, in Universities in US and Europe. The skills and training imparted to the graduates inspire them to become entrepreneurs; many of them as the first generation entrepreneurs. On an average, 25% of the graduates of the Institute have started their own businesses, many without having any family business background. The University runs a specialized programme in “Diploma in Chemical Technology Management” which enables the students to acquire job easily in industry.

*** Innovation :**

A systematic curriculum development is a model for the post-graduate education in

Chemical Engineering, Chemical Technology and Allied Technology Disciplines, along with Faculty and staff training in both technical and non-technical areas, refurbishing the postgraduate laboratories and equipments, library and information processing centre enables the institute to perform innovative research projects. Institute has filled over 300 patents in last 10 years. The contribution of ICT in research in Chemical Engineering/Technology areas has been also well recognized because of publications in international reputed journals and number of citations that they draw from peers.

ICT has also embarked on 'Make in India' project with several products being built as import substitutes or completely new products with relevance for social development or improving industrial competence. The students at all levels are being trained in the innovation, thinking differently and in entrepreneurship.

*** Research :**

Undergraduate students are encouraged by faculty to take up internship during summer vacation on suitable research project in the labs of ICT or at other institutions. The curricula are focused on research and development for the industry in support of increased cost-effectiveness, international competitiveness, energy efficiency, environmental management, and the development of technologies for rural populations, disadvantaged sectors of the population, and the large formal and non-formal sectors of the economy. Institute is providing the best of the facilities and intellectually stimulating environment for research. ICT has initiated establishment of new infrastructure for housing the cutting edge technology for research.

1.1.4 To what extent does the university use the guidelines of the regulatory bodies for developing and/or restructuring the curricula? Has the university been instrumental in leading any curricular reform which has created a national impact?

The Guidelines given by regulatory bodies such as AICTE, PCI and other bodies are followed to the extent of 75 to 80%. Since a majority of faculty is involved in basic and applied research (industry based), several research based electives are introduced in the curriculum. These electives are choice based and students can select as per their requirements in future. Several new courses are also initiated such as Laboratory Safety, Research methodology, Process Intensification. Green Technology, Drug

Delivery systems and refresher courses for plant personnel. These are unique and may be first and only in the country.

1.1.5 Does the university interact with industry, research bodies and the civil society in the curriculum revision process? If so, how has the university benefitted through interactions with the stakeholders?

The advisory committees for syllabus consist of alumni from industry. Other committees like Undergraduate programme committee, Postgraduate programme committee, and Academic council consist of outside illustrious members. Their valuable suggestions benefited ICT in framing the syllabi. Many faculty members are the members of various national and international societies and government bodies. Their interaction during meetings has immensely benefited ICT in framing curriculum. Faculty members at ICT are also involved in industrial research projects and consultancy which help them to understand latest requirements of industries which were incorporated in curricula. Some of the faculty members are members of Board of Directors of industries and have thus experience in Corporate Management which is brought in the management of the Institute.

1.1.6 Give details of how the university facilitates the introduction of new programmes of studies in its affiliated colleges.

ICT is state run Deemed University and has no affiliated colleges. Any new programme at ICT is initiated at department level. Advisory committee at departmental level suggests new course which is then routed through Undergraduate programme committee, postgraduate programme committee and academic council.

1.1.7 Does the university encourage its colleges to provide additional skill-oriented programmes relevant to regional needs? Cite instances (not applicable for unitary universities).

Not Applicable

1.2 Academic Flexibility

1.2.1 Furnish the inventory for the following:

* Programmes taught on campus

Sr.No.	Title of Programme	Level	Duration (Years)	Year of starting	AICTE sanctioned Annual Intake	Total Student strength
UG programmes						
1	B.Chem.Engg	UG	4 Years	1934	75	300
2	B.Tech-Dyes Technology	UG		1937	18	72
3	B.Tech- Food Engineering			1937	18	72
4	B.Tech- Fibre Science and Textile Technology	UG		1934	30	120
5	B.Tech- Oils, Oleochemicals and Sufactant Technology	UG		1943	16	64
6	B.Tech- Pharmaceuticals Technology	UG		1943	16	64
7	B.Tech Polymer engineering and Technology	UG		1943	18	72
8	B.Tech Surface engineering & Technology	UG		1943	18	72
9	B.Pharm.	UG		1958	30	120
Total UG strength						
PG Programmes						
10	M.Chem.Engg	PG	2 years	1951	30	60
11	M. Pharm	PG		1964	30	60
12	M.Tech-Dyes Technology	PG		1939	18	36
13	M.Tech.-Foods Engineering &Technology	PG		1939	18	36
14	M.Tech- Fibre Science and Textiles	PG		1936	18	36

15	M.Tech- Oils, Oleochemicals and Sufactant Technology	PG		1945	18	36
16	M.Tech- Pharmaceuticals Technology	PG		1945	18	36
17	M.Tech- Polymer engineering and Technology	PG		1945	18	36
18	M.Tech- Surface engineering & Technology	PG		1945	18	36
19	M.Tech- Food Biotechnology	PG		2012	30	60
20	M.Tech- Bioprocess Technology	PG		1991	30	60
21	M.Tech- Perfumes and Flavor	PG		1995	18	36
22	M.Tech. Green Technology	PG		2010	30	60
23	M.E. (Plastic Engg)	PG		1971	18	36
24	M.Sc.(Chemistry)	PG		2009	20	40
25	M.Sc.(Textile Chemistry)	PG		2011	20	40
26	M.Sc.(Engineering Mathematics)	PG		2012	20	40
27	M.Sc.(Physics)	PG		2012	20	40
	Total PG strength					
	Ph.D.(by research)					
28	Ph.D.(Tech.)	Ph.D.	3-4 years	1962	variable	320
29	Ph.D.(Sci.)	Ph.D.	3-4 years	1960	variable	379
	Total PhD strength					699
30	Post-Graduate Diploma in Chemical Tecnology Management	PGDM	2 years	2007	15	30
31	Certificate course on Safety and Risk Management	CSRM	15 weeks	2015	-	60

- **The first PhD in Engineering and Technology in the country was awarded by ICT*

- * Overseas programmes offered on campus : None
- * Programmes available for colleges to choose from
Not applicable being unitary universities.

1.2.2 Give details on the following provisions with reference to academic flexibility

a. Core / Elective options :

At undergraduate and postgraduate level curricula have core and elective subjects.

To encourage interdisciplinary education, electives are offered to students and they are choice based. Students can select any elective from other departments.

b. Enrichment courses :

Training and placement cell offers aptitude classes that enable the students to attend campus interviews with ease. Students undergo group discussions; personal interviews, debates etc., during the communication skills classes. The training and placement cell periodically hosts mock placement tests/interviews with experts from the industry and academia. Additional skill training programmes are arranged for the students.

c. Courses offered in modular form

All courses are offered in modular form.

d. Credit accumulation and transfer facility

Credits earned from the first semester to the 8th semester at UG level are used for computing CGPA and awarding the degree.

Credits earned from the first semester to the 4th semester PG level are used for computing CGPA and awarding the degree, following University regulations in this regard.

R.9 Credit System and Mode of evaluation

1. Introduction

All the courses at ICT are credit based and the evaluation is grade based.

Credit system is a systematic way of describing an educational programme by attaching credits to its components. The definition of credits may be based on different parameters, such as student workload, learning outcomes and contact hours. It is a student-centric system based on the student workload required to achieve the objectives

of a programme. It should facilitate academic recognition of the courses and mobility of the students. Credits assignment is based on the principle that Credits can only be obtained after successful completion of the work required and appropriate assessment of the learning outcomes achieved. As per the AICTE norms 2L/week of lectures are 2 credits, while 2h/week of practicals/tutorials are 1 credit. This may be taken as the basis.

Student workload consists of the time required to complete all prescribed learning activities such as attendance at lectures/practicals, seminars, projects, etc. Credits are allocated to all the educational components of a study programme and indicate the quantity of work each component requires to achieve its specific objectives.

Evaluation is an important component of any teaching-learning process. The Institute gives emphasis on continuous evaluation with considerable freedom to the teacher in deciding the mode of evaluation of the students. The performance of the student is documented by a grade at the end of the semester. The grading scale ranks the students on a statistical basis. Therefore, statistical data on student performance is a prerequisite for applying the grading system.

2. Course Credits

In general a certain quantum of work measured in terms of credits is laid down as the requirement for a particular degree. The student acquires credits by passing courses every semester, the amount of credit associated with a course being dependent upon the number of hours of instruction per week in that course.

There are mainly two types of courses in the Institute - lecture courses and laboratory courses. Lecture courses consist of lecture (L) and tutorial (T) hours. Laboratory courses consist of practical (P) hours. The credit (C) for a course is dependent on the number of hours of instruction per week in that course, as given below:

1h/week of lecture (L) or tutorial (T) = 1 credit

(2) 2h/week of Practicals (P) = 1 credit

(3) Credit (C) for a theory course = No. of hours of lectures per week + No. of hours of tutorials per week = L + T

(4) Credits (C) for a Laboratory course = $\frac{1}{2}$ x No. of hours of laboratory course per week

Credits are assigned to In-plant training, Seminar, Projects and other mandatory course requirements and these are mentioned in the respective syllabi. There may be some non-credit requirements. A student is required to earn credits as mentioned in the syllabus.

3. Evaluation

3.1. Weightages* of different modes of assessments shall be as under.

	In-Semester evaluation		End-Semester-Exam	Components of continuous mode
	Continuous mode	Mid Semester-Exam		
Theory	30%	30%	40%	Quizzes, classtests (open or closed book), home assignments, group assignments, viva voce assignments, discussions, Presentations)
Practicals	50%	-	50%	assignments, project, experiments, tests

* Subject to change

3.2 In-Semester Evaluation:

- a. It is expected that the teacher would conduct at least two assessments under the continuous mode in a Semester.
- b. The teacher will announce at the beginning of the respective course the method of conducting the tests under the continuous mode and the assignment of marks
- c. In-semester performance of all students should be displayed and sent to the academic office by the teacher at least 15 days before the end-semester examination.
- d. For the theory courses, there will be one mid-semester test for each course to be held as per the schedule fixed in the Academic Calendar.
- e. For mid -semester examinations in theory papers, duration of examination will be 1 hour for 3 credit courses and 2 hours for 4 credit courses.

3.3 End-Semester examination:

- a. The End- semester examination will cover the full syllabus of the course and will be conducted as per the Institutional time table at the end of each semester.
- b. For End- semester examinations in theory papers, duration of examination will be 1 hour for 3 credit courses and 2 hours for 4 credit courses

3.4 Passes and Failures

- a. The candidates who obtain 40% and more marks of the total marks of a subject head shall be deemed to have passed the respective subject head.
- b. The candidates who obtain marks less than 40% of the total marks of a subject head shall be deemed to have failed in the respective subject head (Grade FF).

3.5 Grades:

- a. The performance of a student shall be documented by a Letter grade. Each letter grade has a Grade point associated with it. The Grades and Grade points shall be assigned to each head of passing and both will be indicated in the mark-list of the semester examination.
- b. The total marks (in-semester + end-semester) of a candidate in a subject head are converted into a letter grade, based on the relative (and sometimes the absolute) performance of the student.

Letter Grade	Grade Point
AA	10
AB	9
BB	8
BC	7
CC	6.5
CD	6
DD	5.5
EE	5

- c. In view of our elite status 6 out of 10 CGPA will be first class. Thus (CGPA x 10) formula will be used to calculate % and class

Repeat examination in Practicals subject is permitted to the students in the following cases :

1. Candidate has obtained 50% marks in Continuous Assessment and appeared for regular End semester practical examination and Failed. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
2. Candidate has obtained 50% marks in Continuous Assessment and could not appear for regular End Semester practical examination due to valid Medical reason and or family bereavement. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
3. The candidates not fulfilling above two criteria will be given year drop.

Distinction, (70%)

First Class (60-69.99)

Second Class (50-59.99)

will be used like old ICT cut-out marks.

- d. The grades to be allotted in the case of students who fail or do not appear at the end-semester examination shall be as under.

Letter	Grade	Explanation
FF	0	The candidate fails in subject head. The candidate will be allowed to take end-semester repeat or subsequent examinations as per rule.
XX		The candidate has not kept term for the subject head due to attendance less than requisite. Further see 3.5(h) below. In the above cases, the candidate has to repeat the respective course by paying the fees.
I	0	The candidate has kept term for the subject head, has taken all the internal examinations with satisfactory performance, but has failed to take the end-semester examination or repeat examination due to genuine reasons. The candidate will be allowed to take end-semester repeat or subsequent examinations as per rule.
FR	0	The candidate has exhausted all the permissible chances to clear the end semester examinations. The candidate has to register for the respective semester again for all the subject heads or will be out of the respective degree course as per the rules.

DR	0	(i) The candidate hasn't participated in academic programme. (ii) The candidate has taken a drop for the subject head; - provided he/she intimates the same (i or ii) at least 7 days in advance of the commencement of the end-semester examination for the respective year.
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- e. Grades FF and I are place-holders only and do not enter into CPI/SPI calculations directly. These grades get converted to one of the regular grades after the end-semester examination.
- f. A candidate with an FR grade is not eligible for any repeat examination in that course and has to re- register for that semester by paying the appropriate fees.
- g. The grade I will not be continued beyond the permissible number of end-semester/repeat examinations [Refer to current Regulation R.9 (9) and R.9 (10)]. In the six consecutive exams conducted by the institute, irrespective of whether the candidate fails to take any of these exams.
- h. 'XX' Grade: The grade XX in a course is awarded if - (i) candidate does not maintain the minimum 75% attendance in the Lecture/Tutorial/Practical classes, (ii) candidate receives less than 20% of the combined marks assigned for continuous assessment and mid-semester examination, and (iii) candidate indulges in a misconduct/uses unfair means in the examination, assignments, etc., of a nature serious enough to invite disciplinary action in the opinion of the teacher.

(Note: Award of the XX grade in the case of h (iii) above shall be done by Disciplinary Action Committee (DAC)).

- i. The names/roll numbers of students to be awarded the XX grade should be communicated by the teacher to the Academic office as per academic calendar before the last date of submission of the application for end-semester examination.

3.6 Awarding the grades

The grading scale ranks the students statistically on the basis of the overall performance of the students of a given class in the given subject head.

Therefore, statistical data on students' performance is a prerequisite for applying the grading system. While assigning grades in a given subject head, it is essential to know the average marks (AM) obtained by the students who have passed the subject head and the highest marks (HM) obtained in the same subject head.

3.6.1 If the average marks (AM) obtained by the students who have passed the subject head is $<60\%$, the interval AM shall be awarded grade CC and the other grades shall be decided as follows:

i. AA, AB, BB, and BC grades shall be decided between the AM and HM by dividing the range in equal intervals.

ii. CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.

3.6.2 If the average marks (AM) obtained by the students who have passed the subject head is such that $60\% \leq AM < 70\%$, the interval AM shall be awarded grade BC and the other grades shall be decided as follows:

i. AA, AB, BB grades shall be decided between the AM and HM by dividing the range in equal intervals.

ii. CC, CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.

3.6.3 If the average marks (AM) obtained by the students who have passed the subject head is $\geq 70\%$, the interval AM shall be awarded grade BB and the other grades shall be decided as follows:

i. AA and AB grades shall be decided between the AM and HM by dividing the range in equal intervals.

ii. BC CC, CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals

SPI and CPI

a) Semester Performance Index (SPI): The performance of a student in a semester is indicated by Semester Performance Index (SPI), which is a weighted average of the grade points obtained in all the courses taken by the student in the semester and scaled to a maximum of 10. (SPI is to be calculated up to two decimal places.)

A Semester Grade Point Average (SGPA) will be computed for each semester as follows:

Where

'n' is the number of subjects for the semester,

'ci' is the number of credits allotted to a particular subject, and

'gi' is the grade-points awarded to the student for the subject based on his performance as per the above table.

SGPA will be rounded off to the second place of decimal and recorded as such.

b) Cumulative Performance Index (CPI): An up to date assessment of the overall performance of a student from the time he entered the Institute is obtained by calculating Cumulative Performance Index (CPI) of a student. The CPI is weighted average of the grade points obtained in all the courses registered by the student since he entered the Institute. CPI is also calculated at the end of every semester (upto two decimal places).

Starting from the first semester at the end of each semester (S), a Cumulative Grade Point Average (CGPA) will be computed as follows:

Where

'm' is the total number of subjects from the first semester onwards up to and including the semester S, 'ci' is the number of credits allotted to a particular subject, and

'gi' is the grade-points awarded to the student for the subject based on his performance as per the above table.

CGPA will be rounded off to the second place of decimal and recorded as such.

c) The CGPA, SGPA and the grades obtained in all the subjects in a semester will be communicated to every student at the end of every semester / beginning of the next semester.

d) When a student gets the grade 'FF' or 'I' in any subject head during a semester, the SGPA and CGPA from that semester onwards will be tentatively calculated, taking only 'zero' grade point for each such 'FF' or 'I' grade. When the 'FF' grade(s) has / have been substituted by better grades after the repeat examination or subsequent semester examination, the SGPA and CGPA will be recomputed and recorded.

e. Lateral and vertical mobility within and across programmes, courses and disciplines

For M. Tech. admission student from any branch of B.Tech. is eligible to take admission to any branch of M. Tech. Also at Ph.D. level admission mobility is allowed.

Detail of the eligibility criteria are given below;

MASTER'S DEGREE PROGRAMMES

COURSES OF STUDIES, ADMISSION CRITERIA AND CAPACITY

All Full- time Master's courses (other than M. Sc. courses) are Two-Years programmes [partly by papers (two semesters) and partly by thesis (two semesters)] with fellowship for GATE/ GPATqualified candidates.

All Sponsored Master's courses (other than M. Sc. courses) are Three-Years programmes for sponsored candidates [partly by papers (four semesters) and partly by thesis (two semesters)] without fellowship.

All M.Sc. courses are Two- Years programmes (four semesters) only by papers. (See Table 3.3.1 below for different courses).

TABLE 3.3.1 : MASTERS DEGREE COURSES

SR. NO.	DEGREE	BRANCH	INTAKE	Available for this year*
1.	M. Chem. Engg. (Full-time 2-years)	Chemical Engineering	30	30

2.		Dyestuff Technology	18	10
3.		Fibres & Textile Processing Technology	18	18
4.		Food Engineering & Technology	18	10
5.		Oils, Oleochemicals & Surfactants	18	18
6.		Pharmaceutical Technology	18	08
7.	M. Tech.	Polymer Engineering & Technology	18	18
8.	(Full-time 2-years)	Surface Coating Technology	18	18
9.	M. Pharm.	Pharmaceutics	18	18
10.	(Full-time 2-years)	Pharmaceutical Chemistry		
11.		Medicinal Natural Products@		
12.	M.E. (Plastic Engg.) (Full-time 2-years)	Plastic Engineering	18	10
13.		Bioprocess Technology	30	30
14.		Food Biotechnology	30	10
15.	M. Tech.	Green Technology	30	30
16.	(Full-time 2-years)	Perfumery & Flavour Technology	18	10
17.	M. Chem Engg. (Sponsored 3	Chemical Engineering	10	10
18.	M. Tech.	Dyestuff Technology	10	05
19.	(Sponsored 3-	Fibres & Textile Processing Technology	10	10
20.	years)	Food Engineering & Technology	10	00
21.		Oils, Oleochemicals & Surfactants	10	10
22.		Pharmaceutical Technology	10	04
23.		Polymer Engineering & Technology	10	10
24.		Surface Coating Technology	10	10
25.	M.E. (Plastics	Plastics Engineering	10	05
26.	M. Tech.	Green Technology	10	10
27.	(Sponsored 3-years)	Perfumery & Flavour Technology	10	02
28.	M.Sc.	Chemistry	20	20
29.	(Full-time 2-years)	Engineering Mathematics	20	20
30.	(by papers)	Physics (Material Science)	20	20
31.		Textile Chemistry	20	20

The actual number to be admitted will be subject to number of fellowships requirement of individual department and availability of Research Guide.

+ The tentative seat distribution given is for intake (Sr. No. 1-12 in Table 3.3.1) of GATE/ GPAT qualified candidates eligible to receive UGC Fellowship (Subject to

sanction). The Vice-Chancellor, ICT reserves the right to change the course/ branch wise distribution of these fellowships, based on availability of the candidates.

The selection for the UGC Fellowships shall be based on the GATE/ GPAT score (Level 1- Table 3.3.2) and the performance in the Institute's written test (Level 2 and Level 3 - Table 3.3.2), as the case may be.

@ "Medicinal Natural Products" includes the subjects related to Pharmacognosy and Pharmacology.

The seat distribution given is for intake (Sr. No. 13 in Table 3.3.1) of GATE/ GPAT qualified candidates eligible to receive DBT Fellowship.

€ The seat distribution given is for intake (Sr. No. 14 in Table 3.3.1) of GATE qualified candidates eligible to receive DBT Fellowship.

ß (Sr. No. 15 in Table 3.3.1). Efforts are underway to get fellowships sanctioned. At the moment, the ICT cannot guarantee any fellowship for this programme.

¥ (Sr. No. 16 in Table No. 3.3.1) Subject to availability of fellowships from PAFAI, ICEOFF

No fellowships are available for Sponsored 3 - years Master's courses (Sr. No. 17 - 27 in Table 3.3.1), which are meant only for industry / academic - sponsored candidates having relevant experience. Also, no fees concessions, as applicable to unemployed Reserved Category Students, can be availed and full fees need to be paid by the candidate. (See Section 3.3.1.8).

Please note that no scholarship or fee concession will be available to employed candidates for any courses even if they belong to backward class category.

No fellowships are available to any of the M. Sc. Courses by papers (Sr. No. 28 - 31 in Table 3.3.1).

The number of seats mentioned against full time 2 yrs. course (Sr. 1 to 16) are the intake as per the AICTE guidelines.

Reservation policy will be applicable as per the norms by Govt. of Maharashtra.

Eligibility Criteria for the Admission (Indian Nationals)

M.Chem.Engg., M.Tech.

(Sr. Nos. 1-8 Full time 2-years and Sr. Nos. 17-24 Sponsored 3-years in Table 3.3.1)

The candidate should have passed any one of the following Bachelor's degrees of the ICT or any equivalent examination of a post-HSSC four-year degree course of IIT/NIT or any University/ Institute recognized by the UGC/ AICTE, with 60% marks in aggregate or equivalent CGPA. [55% marks in aggregate or equivalent CGPA for the backward class candidate].

Additionally, Candidates from the following different courses will be eligible for admission to M. Chem. Engg. course at ICT only if they have undergone "minimum 120 hours of class-room teaching /contact hours of Mathematics course(s) at the UG level.

- B.Chem.Engg. or B.E. / B.Tech. in Chemical Engineering/ Biotechnology/ Biochemical Engg.
- B.Sc. (Tech.) (Technology of Intermediates and Dyestuff) / B.Tech. (Dyestuff Technology).
- B.Tech. (Textile Processing/ Textile Chemistry), B.Sc. (Tech.) (Textile Processing / Chemistry), B.Text. (Textile Chemistry), B.E. (Textile Chemistry or Textile Technology), B.Tech. (Textile Chemistry or Textile Technology), B.Tech. (Fibres and Textile processing Technology/ Fibre Technology) with significant emphasis on chemical processing of textiles.
- B.Tech. (Food Engineering and Technology) or B.E./ B.Tech. in Food Engineering/ Food Technology/ Food Science/ Food Process Technology/ Food Process Engineering, or B.Sc. (Tech.) (Food Technology).
- B.Sc. (Tech.) (Oils Technology) or B. Tech. (Oils, Oleochemicals and Surfactants Technology).
- B.Sc. (Tech.) (Pharmaceutical and Fine Chemicals) or B. Tech. (Pharmaceutical Chemistry and Technology).
- B.Tech. (Polymer Engineering and Technology /Surface Coating Technology); B.Sc. (Tech.) (Technology of Plastics or Technology of Paints), B.Sc. (Tech.) (Rubber Technology), B.E. (Polymer Engg. / Plastic Engg.), B.E. (Petrochemical Engineering/ Technology).

- B.Sc. (Tech.) (Paints Technology / Plastics Technology), B.Tech. (Paints Technology / Polymer Engineering and Technology), B.Chem.Tech. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology), B.E. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology / Plastic Engineering).

M.Pharm. (Sr. Nos. 9-11 Full time 2-years in Table 3.3.1)

The candidate should have passed the Bachelor's degree in Pharmacy (B. Pharm.) of the ICT or any UGC recognized University/ Institute, with 60% marks in aggregate or equivalent CGPA. [55% marks in aggregate or equivalent CGPA for the backward class candidate].

The following THREE specializations are offered for M. Pharm.

- Pharmaceutics (Sr. No. 9 in Table 3.3.1)
- Pharmaceutical Chemistry (Sr. No. 10 in Table 3.3.1)
- Medicinal Natural Products (Sr. No. 11 in Table 3.3.1)

For specialization, option form will be given at the time of admission offered. Once a candidate is offered a seat in any one specialization, according to the availability of seats at the time of allotment and in the order of merit and preference given by the candidate, no request for any transfer or change of preference shall be entertained. However, if seat falls vacant, the candidate shall be transferred to the higher preference and it shall remain binding on the candidate.

M.E. (Plastic Engineering) (Sr. No. 12 Full time 2-years and Sr. No. 25 Sponsored 3-years in Table 3.3.1)

The candidate should have passed B.E. or B.Tech. in Mechanical engineering/ Electrical Engineering/ Plastics engineering / Polymer engineering / Production Engineering /Chemical Engineering/ Chemical Plant Engineering of any post-HSSC four year degree course of IIT/NIT or any University/ Institute recognized by the UGC/ AICTE, with 60% marks in aggregate or equivalent CGPA. [55% marks in aggregate or equivalent CGPA for the backward class candidate].

M.Tech. (Food Biotechnology) (Sr. No. 14 Full time 2-years in Table 3.3.1)

The candidate should have passed B. Tech degree in Food Engineering and Technology of the ICT or any other equivalent degree of any University recognized by the UGC of four-year degree course after HSSC/Std. XII, with 60% marks in aggregate or equivalent CGPA. [55% marks in aggregate or equivalent CGPA for the backward class candidate].OR

B. Tech. / B.Sc. (Tech.) / B.E. in Food Engineering and Technology/ Food Engineering/ Food Technology / Food Science/ Food Process Technology/ Food Process Engineering/ Dairy Technology/ Biotechnology/Biochemical Engineering/ Pharmaceutical Technology/ Oil Technology or any equivalent degree of full four year duration of any University recognized by the UGC. Three year degree programs in these disciplines are not recognized for admission.

M.Tech. (Green Technology)

(Sr. No. 15 Full time 2-years and Sr. No. 26 Sponsored 3-years in Table 3.3.1)

The candidate should have passed any one of the following Bachelor's/Master's degrees of ICT or any equivalent examination of IIT/NIT or any University recognized by the UGC, with 60% marks in aggregate or equivalent CGPA). [55% marks in aggregate or equivalent CGPA for the backward class candidate].

B.Chem. Engg./ B. Sc.(Tech.)/B.Tech - in any branch of Chemical Technology/biotechnology/ B. Pharm.

OR

M.Sc. (Chemistry, Biotechnology, Biochemistry).

M.Tech. (Perfumery and Flavour Technology)

(Sr. No. 16 Full time 2-years and Sr. No. 27 Sponsored 3-years in Table 3.3.1)

The candidate should have passed B. Sc. (Tech.)/ B. Tech. Degree in Dyestuff Technology/ Food Engineering & Technology / Food Engineering/ Oils, Oleochemicals & Surfactants Technology/ Pharmaceuticals Technology of the ICT or any equivalent examination of four-year degree course of any University recognized by the UGC,after HSSC/Std. XII, with 60% marks in aggregate or equivalent CGPA. [55% marks in aggregate or equivalent CGPA for the backward class candidate].

Master's [(Sponsored 3- Years courses Sr. Nos. 17-27 in Table 3.3.1)]

These courses are meant only for industry / academic - sponsored candidates. Candidates must possess two years teaching or industrial experience. The eligibility criteria shall be as described in Section 3.3.1.1, 3.3.1.3, 3.3.1.6 and 3.3.1.7 above, as applicable.

All regular admissions criteria are applicable to these candidates and the fees applicable per year shall be at par with those for Master's 2-year regular courses. In addition, for such candidates, the following shall be applicable:

The candidate should be full time industrial/ R & D employee with at least two years experience in a chemical or allied industry or dealing with chemical business or a permanent teacher having full time teaching experience of at least two years in Engineering and Technology College.

The industry/ college/ University/ Institute management should undertake the responsibility of releasing the candidate for course work (Theory Classes), experimental work (Laboratory work) or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.

The candidates taking admission to these courses will have option to attend the lectures/practicals over a total span of two years and clear the examinations, third year being utilized for thesis work.

Candidates can work in the ICT laboratories during holidays (with a prior permission to work on holiday/ late working) and also after their office hours. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his/ her supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.

Part of the experimental work could be allowed to be done in their premises (concerned industry/ institute) for which their management will provide them with necessary facilities.

M.Sc. (Chemistry) by papers, Full time 2-years (Sr. No. 28 in Table 3.3.1)

The candidates who have taken the post-H.S.C. 3-year degree course of Bachelor of Science with Chemistry as a major subject and Mathematics at H.S.C. level and passed the bachelor examination with at least 60% of the marks in aggregate of equivalent grade average. [55% for the backward class candidates only from Maharashtra State] are only eligible to apply.

The candidates must have cleared the bachelor's examination in one sitting i.e. repeaters shall not be eligible for the admission.

The admissions will be done strictly on the basis of merit, based on the marks obtained in the qualifying entrance examination.

M.Sc. (Engineering Mathematics) by papers, Full time 2-years (Sr. No. 29 in Table 3.3.1)

The candidate should have passed B.Sc. with Mathematics or B.Tech./B.E./B.Sc. (Statistics) with at least four mathematics courses from a UGC/AICTE recognised university / Institute, and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent CGPA (50% for the students from reserved category only from Maharashtra State) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

M.Sc. (Physics) (Material Science) by papers, Full time 2-years (Sr. No. 30 in Table 3.3.1)

The candidate should have passed with post-HSSC 3-year degree course of B.Sc. with Physics at the third year of the course of any University recognized by the UGC; and passed the qualifying examination with at least 55% marks in aggregate or equivalent CGPA (50% marks in aggregate or equivalent CGPA for the backward class candidates) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

M.Sc. (Textile Chemistry) by papers, Full time 2-years (Sr. No. 31 in Table 3.3.1)

The candidate should have passed with post-HSSC 3-year degree course of B.Sc. with Chemistry at the third year of the course of any University recognized by the UGC; and

passed the qualifying examination with at least 55% marks in aggregate or equivalent CGPA. [50% marks in aggregate or equivalent CGPA for the backward class candidates] are only eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

DOCTOR OF PHILOSOPHY (Ph.D.) PROGRAMMES

Courses of Doctoral Studies

Table 3.4.1 shows the various doctoral programmes (by research) in various disciplines in Science and Technology. Apart from original research, all Ph.D. programmes have a course work component effective from September 2009.

TABLE 3.4.1: DOCTORAL (Doctor of Philosophy) DEGREE COURSES

Sr. No.	DEGREE	COURSE
1.	Ph.D. (Tech.) in Technology	Bioprocess Technology
2.		Chemical Engineering
3.		Dyestuff Technology
4.		Fibres and Textile Processing Technology
5.		Food Biotechnology
6.		Food Engineering and Technology
7.		Green Technology
8.		Nano Technology
9.		Oils, Oleochemicals & Surfactants Technology
10.		Perfumery and Flavour Technology
11.		Pharmacy@
12.		Pharmaceutical Technology
13.		Polymer Engineering and Technology
14.		Surface Coating Technology
15.		Plastic Engineering
16.		Civil Engineering
17.		Electrical Engineering
18.		Electronics Engineering
19.		Mechanical Engineering
20.	Ph.D. (Sci.)	Biochemistry
21.		Biotechnology
22.		Chemistry
23.		Food Science
24.		Mathematics
25.		Physics

Intake Capacity: There is no prescribed intake capacity for any of the Doctoral courses/branches since the number of available fellowships and the requirement by the research supervisors varies every year. Several research projects, either funded by various government agencies or private industries, have provisions for fellowships. ***No admission to a Ph.D. course is done without fellowship***, although the amounts vary depending on the source of funding and the candidate's qualifications.

@Ph.D. (Tech) in Pharmacy is offered in four different branches: (i) Pharmaceutics, (ii) Pharmaceutical Chemistry, (iii) Pharmacology and (iv) Pharmacognosy. Candidates shall fill up a single form for all these courses. Separate written tests will be conducted for each of the above branches. Candidates may appear for written tests in one or more of these and a separate merit list will be prepared for each.

Candidates admitted to Ph.D. (Tech.) in Technology (Sr. No. 1 - 15) conduct research under the recognized faculty from the Department of Chemical Engineering, all Departments of Chemical Technology, DBT-ICT Centre for Energy Bio-sciences and ICT-DAE Centre for Chemical Engineering Education & Research.

Candidates admitted to Ph.D. (Tech.) in Technology (Sr. No. 16 - 19) conduct research under the recognized faculty from the Department of General Engineering.

There will be combined entrance test for Ph.D Science in Biotechnology (Sr No. 21) and Ph.D Science in Biochemistry (Sr No. 20). Shortlisted Candidates will be eligible for admission to Ph.D. Science Biotechnology (Sr No. 21) and Ph.D Science Biochemistry depending upon availability of fellowship.

Candidates admitted to Ph.D. (Sci.) in Food Science (Sr. No.23) conduct research under the recognized faculty from the Department of Food Engineering & Technology.[See Section 3.4.3.1]

Candidates admitted to Ph.D. (Sci.) in Mathematics (Sr. No. 24) conduct research under the recognized faculty from the Department of Mathematics.

Candidates admitted to Ph.D. (Sci.) in Physics (Sr. No. 25) conduct research under the recognized faculty from the Department of Physics.

Candidates admitted to Ph.D. (Sci.) in Textile Chemistry (Sr. No. 26) conduct research under the recognized faculty from the Department of Fibres & Textile Processing Technology. [See Section 3.4.3.1]

Note: A Single form has to be filled for Ph.D Science in Biotechnology (Sr No.21) and Ph.D Science in Biochemistry (Sr No.20). Candidates should mention Biotechnology/Biochemistry on the Form.

Fellowships for Doctoral Programmes

UGC-SAP Meritorious Fellowships for Ph.D. Programmes:

The Empowered Committee of the UGC has taken several innovative steps to encourage Science and Technology research and building of infrastructure in Universities and Colleges. Thus, UGC has been providing these fellowships to all Departments recognized under Special Assistance Programme (SAP) or Non-SAP Departments. The number of fellowships sanctioned by UGC for a particular department depends on its track record of producing Ph.D.s, number of publications in peer reviewed journals, and the SAP status. TO AVAIL UGC-SAP FELLOWSHIP, CANDIDATE MUST SECURE 60% MARKS OR EQUIVALENT CGPA (55 % MARKS OR EQUIVALENT CGPA IN CASE OF RESERVED CATEGORY) IN MASTER'S DEGREE.

1. 20 UGC-SAP fellowships in Department of Chemical Engineering
2. 15 UGC-SAP fellowships in the Centre for Physico-chemical Aspects of Textiles, Fibres, Dyes and Polymers to be distributed among the Dept. of Fibres & Textile Processing Technology, Dept. of Dyestuff Technology and Dept. of Physics).
3. 15 UGC-SAP fellowships in Department of Food Engineering & Technology
4. 15 UGC-SAP fellowships in Department of Pharmaceutical Sciences & Technology
5. 10 UGC-SAP fellowships in Department of Chemistry
6. 05 UGC-SAP fellowships in Department of Polymer & Surface Engineering
7. 02 UGC-Non-SAP fellowships in Department of Oils, Oleochemicals & Surfactants Technology
8. 15 UGC-SAP fellowships for Green Technology (with University of Mumbai)

Note: Additional fellowships for single girl child are available in UGC-SAP programme (01 fellowship per 05 UGC-SAP fellowships in each).

Inspire Fellowship from Department of Science and Technology, Govt.of India

First Rank holders in Bachelor's degree or Master's degree in Engineering/ Technology/ Pharmacy/Science of any UGC/ AICTE recognized Indian University or Institute/ Statutory Body in India can apply for award of INSPIRE FELLOWSHIP, a scheme of the Government of India to avail research grants for a period of five years for doing research leading to Ph.D. degree. The Bachelor's degree holders with INSPIRE FELLOWSHIP need to register for Integrated Ph.D. degree from the beginning of the research. Application format and necessary documents for application are available on the website www.inspire-dst.gov.in. Eligible candidates should apply directly to DST and after getting provisional acceptance, they may be considered for admission at ICT, subject to fulfillment of other criteria.

Eligibility Criteria for the Admissions:

A Eligibility Criteria for Admission to Ph.D. (Tech.)/ Ph.D. (Sci.)

PhD (Tech.) course at **Sr. No. 1 in above Table 3.4.1** must have passed

- i) Bachelor degree (12+4) in Engineering/Technology/Pharmacy or equivalent thereto
AND
- ii) Master's degree examination in the Chemical Engineering/Bioprocess Technology/ Chemical Technology (any branch at ICT)/Pharmacy/M. Tech. Biotechnology/Biochemical Engineering/ or any other UGC recognized university as equivalent there to with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) course at Sr. No. 2 in Table 3.4.1, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT/ [(M.E in Petrochemical Engineering/ Environmental Engineering) (Provided Bachelor Degree in Chemical Engineering)] or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) courses at Sr. No. 3, 4 and 7 -15 in Table 3.4.1, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical

Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D (Tech.) course at Sr. No. 5 in Table 3.4.1 must have passed the

- i) Bachelor's degree (12+4) in Food Engineering and Technology or Biotechnology/ Food Biotechnology of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category) AND
- ii) Master's degree in Food Engineering and Technology / Food Technology/ Biotechnology/ Food Biotechnology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category.

For Ph. D (Tech.) course at Sr. No. 6 in Table 3.4.1 must have passed the

- i) Bachelor's degree (12+4) in Food Engineering and Technology or equivalent thereto AND
- ii) Master's degree in Food Engineering / Food Technology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category

For Ph.D. (Tech.) courses at Sr. No. 16-19 in Table 3.4.1, the candidate must have passed the Master's degree examination in Civil/ Electrical/ Electronics/ Mechanical/ Production/ Industrial/ Instrumentation Engineering from any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph. D. (Sci.) courses at Sr. No. 20 and 21 in table 3.4.1, the candidate must have passed the Master's degree examination in any biological faculty of science of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% MARKS OR EQUIVALENT CGPA in case of reserved category).

For Ph.D. (Sci.) courses at Sr. No. 22, 24 and 25 in Table 3.4.1, the candidate must have passed the Master's degree examination in the respective Subject of any

University recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 23 in Table 3.4.1, in Food Science the candidate must have passed the M. Sc examination in Food Science, Food Processing, Nutrition, Home Science, Post harvest Technology, Horticulture, Dairy Science, Biochemistry, Microbiology, Organic Chemistry of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 26 in Table 3.4.1, in Textile Chemistry, the candidate must have passed the M. Sc. examination in Textile Chemistry/ Textile Clothing/ Life Sciences/ Biochemistry/ Microbiology/ Chemistry of ICT or of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50 % marks or equivalent CGPA in case of reserved category).

Further, candidates from any of these streams must clear the written test and interviews of the institute which are based on the syllabus of M.Sc. (Textile Chemistry).

The candidates who have passed the Master's degree by Research of any University recognized by UGC may be considered for admission only if they hold fellowship from any recognized funding agency.

In addition, the candidates must undergo institutional written test and interview to qualify for admission through merit.

The candidates qualified in NET/ GATE/ GPAT/ CSIR/ DBT/ - JRF examinations or other equivalent examinations and holding valid fellowship will be preferred.

1.2.3 Does the university have an explicit policy and strategy for attracting international students?

At department level MOU are signed to admit international students

1.2.4 Have any courses been developed targeting international students? If so, how successful have they been? If 'no', explain the impediments.

Textile department has MOU with Government of Ethiopia and train student at Master and Ph.D. level. These courses are successful.

1.2.5 Does the university facilitate dual degree and twinning programmes? If yes, give details.

Yes. After graduation student is allowed to get admitted for dual degree programmes and at the end student get both master and Ph. D. degrees.

1.2.6 Does the university offer self-financing programmes? If yes, list them and indicate if policies regarding admission, fee structure, teacher qualification and salary are at par with the aided programmes?

Not Applicable

1.2.7 Does the university provide the flexibility of bringing together the conventional face-to-face mode and the distance mode of education and allow students to choose and combine the courses they are interested in? If 'yes,' give operational details.

No, the university does not allow the flexibility of combining conventional face to face and distance mode of education for students to choose the courses/combination of their choice. However the institute is taking all necessary steps by publishing details in admission handbook.

1.2.8 Has the university adopted the Choice Based Credit System (CBCS)? If yes, for how many programmes? What efforts have been made by the university to encourage the introduction of CBCS in its affiliated colleges?

University has adopted CBCS for elective subjects. University does not have affiliated colleges.

1.2.9 What percentage of programmes offered by the university follow:

- Annual system 0%
- Semester system 100%
- Trimester system 0%

1.2.10 How does the university promote inter-disciplinary programmes? Name a few programmes and comment on their outcome.

At PG level University encourages inter-disciplinary programmes. For example, M. Tech. in Bioprocess technology is inter-disciplinary programme which include students from Chemical engineering, Pharmacy and food technology background. Other inter-disciplinary programmes at P.G. level are M. Tech. (Green Technology), M. Tech.

(Perfumery and Flavors Technology), M. E. (Plastic Engineering) and Pharmaceutical Biotechnology. In addition, ICT-DAE centre offers Ph. D. (Tech.) in Chemical Engineering to M. Sc. Students with Chemistry, Physics and Mathematics background.

1.3 Curriculum Enrichment

1.3.1 How often is the curriculum of the university reviewed and upgraded for making it socially relevant and/or job oriented / knowledge intensive and meeting the emerging needs of students and other stakeholders?

Curriculum at both UG and PG levels are reviewed after every five years. There is an advisory board at every department level which includes faculty alumni and experts from industry. While framing curriculum, importance is given to stake holder's opinion including intermediate past students, current students and industry feedback.

1.3.2 During the last four years, how many new programmes at UG and PG levels were introduced? Give details.

- Inter-disciplinary : M. Tech. in Green Technology
- Inter-disciplinary : M. Tech. in Pharmaceutical Biotechnology
- programmes in emerging areas : M. Sc. In Textile Chemistry
- programmes in emerging areas : M. Sc. In Mathematics
- programmes in emerging areas : M. Sc. in Physics(Material Science)

1.3.3 What are the strategies adopted for the revision of the existing programmes? What percentage of courses underwent a syllabus revision?

At departmental level advisory board suggests revision which is approved by Undergraduate programme committee and Post-graduate programme committee. Final approval is obtained from the Academic Council.

1.3.4 What are the value-added courses offered by the university and how does the university ensure that all students have access to them?

At UG level subject of Value education is made compulsory to all B.Tech. students. For al master's students certificate course in Safety and Risk Management is introduced.

For Ph.D. students Post graduate diploma in Chemical Technology Management is offered.

1.3.5 Has the university introduced any higher order skill development programmes in consonance with the national requirements as outlined by the National Skills Development Corporation and other agencies?

University has stated new certificate course on Safety and Risk Management which will enable student to understand health, environment and safety. These students may serve as trainers to train their students. University is also conducting soft skill training programmes for student to enable them to acquire job in industry. The students are also trained in Innovation and Entrepreneurship skills.

1.4 Feedback System

1.4.1 Does the university have a formal mechanism to obtain feedback from students regarding the curriculum and how is it made use of?

Yes. Alumni of University are part of advisory committee and involve in curriculum framing.

1.4.2 Does the university elicit feedback on the curriculum from national and international faculty? If yes, specify a few methods such as conducting webinars, workshops, online discussions, etc. and its impact.

The Feedback of Alumni, working in national and international organisations is sought during revision of syllabi. Review also sought on research conducted by faculty from international experts, particulars for nomination of faculty for awards.

1.4.3 Specify the mechanism through which affiliated institutions give feedback on curriculum enrichment and the extent to which it is made use of.

Not applicable

1.4.4 What are the quality sustenance and quality enhancement measures undertaken by the university in ensuring the effective development of the curricula?

University has strong alumni association and faculty of university is actively involved in industry interaction. While framing curricula university involves participation of alumni from industry and academia.

CRITERION II: TEACHING-LEARNING AND EVALUATION

2.1 Student Enrolment and Profile

2.1.1 How does the university ensure publicity and transparency in the admission process?

The University is Deemed to be University (State Government funded, Government of Maharashtra). We follow the direction of Director of Technical Education, Government of Maharashtra for Admission process for UG admission.

Publicity

Admission notification is hosted on University Websites and published in leading news papers. The notification contains detailed information about the programmes offered, eligibility criteria and process of admission as well as academic support facilities.

Transparency

University follows academic calendar of events, giving last date for receipt of application. The last date is fixed for admission based on date of declaration of UG and PG results.

Written and oral examinations are conducted for PG and Ph. D. admissions. Dates for written and oral examinations are displayed on the university website. The results of examinations are also displayed on website. The list of eligible candidates is available on the website.

2.1.2 Explain in detail the process of admission put in place by the university. List the criteria for admission: (e.g.: (i) merit, (ii) merit with entrance test, (iii) merit, entrance test and interview, (iv) common entrance test conducted by state agencies and national agencies (v) other criteria followed by the university (please specify).

Admission Process to UG Programmes

Once the results of the +2 examinations are announced, the Government initiates the process of admissions through Directorate of Technical Education(DTE), Government of Maharashtra. for under-graduate courses (B.Chem. Eng., B.Tech. and B. Pharm.).

The process is done by DTE. The ICT fills in 30% seats of B. Chem. Engg. And B. Tech. courses based on IIT-Mainscore at ICT. The merit list is displayed on the the website.

Criteria for admission to Master's and Ph. D. Courses

The admission to PG programmes are based on merit at undergraduate level and merit at entrance or GATE examination.

Admission to Ph. D. Programme is conducted through a two stage process of written test and technical interview by a panel.

2.1.3 Provide details of admission process in the affiliated colleges and the university's role in monitoring the same.

Not applicable

2.1.4 Does the university have a mechanism to review its admission process and student profile annually? If yes, what is the outcome of such an analysis and how has it contributed to the improvement of the process?

Yes, there is a mechanism in the university to review the admission process and student profiles annually.

A comparative analysis of starting and closing cut-off marks of student admitted to our own institute is done on year on year basis to understand the quality of admission. Such analytical study does give feedback on quality of admissions and preferences among new students.

Once the Directorate of Technical Education approves the list of provisionally admitted students to various programmes, it will be deemed that the process of admission is completed for that year. The admission committee, subsequently, as an annual feature, analyses the admitted students of the programmes in various aspects like admitted strength against sanctioned strength, gender wise admission, cut-off marks secured in the qualifying exams, place and name of the institution last studied, the students' socio-economic and cultural background.

The profile of each student containing this information is collected in a format by the admission committee. This analysis helps the university to know the reason for the

demand or not for that program in that year. The lacuna, if any, in the system of admission is identified and remedied. Suitable steps are undertaken by the admission committee to intensify the publicity for the admission for such programmes and based on the need and demand, increase in intake in the existing programmes and new programmes are introduced.

The ICT has also initiated diagnostic test for every new entrant to gauge the preparedness of the students for the professional courses and plan additional preparatory programmes, if necessary.

Outcome:

As a result of these activities in the last few years, the university has noticed a continuous growth of students in all disciplines. The students either got placed into renowned industries or got admission to good university for higher education.

2.1.5 What are the strategies adopted to increase / improve access for students belonging to the following categories:

During the counseling round at DTE, students from SC/ST/SCA/MBC/BC/BCM/Differently abled and sports category are allotted seats as per the reservation policy followed by the state Government and University from time to time.

*** SC/ST * OBC**

During the counseling round, as per government norms, certain percentage of seats is reserved for students from the disadvantaged community and OBC.

*** Women**

The college does not discriminate on the gender basis. In the current academic year 2015-2016, more than 1/3 rd of the strength is women students.

*** Persons with varied disabilities**

As per the government norms, 3% of the seats are reserved for the physically challenged students.

*** Economically weaker sections**

The college fairly assists the students in getting scholarships for all category of students from the private and government agencies.

- * Outstanding achievers in sports and other extracurricular activities

The University is providing scholarship for the deserving candidates.

Also the UDCT Alumni Association are providing scholarships to the economically weaker section students.

- * Minority community

Not applicable.

Any other (First generation graduates/students)At UG level 70% admission are for at state level students and 30% are for all India level students. We admit students from various parts of the country and needy students are supported from various scholarships at university level.

2.1.6 Number of students admitted in university departments in the last four academic years: (Including All UG, PG and Ph. D.)

Categories	Year 1 2015-16		Year 2 2014-15		Year 3 2013-14		Year 4 2012-13	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	28	24	31	30	35	14	35	26
ST	9	5	10	4	1	2	5	1
OBC	51	26	55	35	37	22	37	42
General	187	122	192	104	197	128	212	108
Other	22	12	25	5	27	8	23	4

2.1.7 The university conducted any analysis of demand ratio for the various programmes of the university departments and affiliated colleges? If so, highlight the significant trends explaining the reasons for increase / decrease.

Programmes	Number of applications	Number of students admitted	Demand Ratio
M.Chem.	197	31	6.35 : 1
M.Pharm.	196	18	10.88 :1
M. Tech. (Textile)	37	18	2.05 : 1
M. Tech. (Polymer)	56	17	3.29 : 1
M. Tech. (Surface)	21	4	5.25 : 1
M. Tech. (Pharma.)	30	5	6 : 1
M. Tech. (Foods)	112	10	11.2 : 1
M. Tech. (Oils)	55	18	3.05 : 1
M. Tech. (Dyes)	5	4	1.25 : 1
M. Tech. (BPT)	194	30	6.46 : 1
M. Tech. (Perfumery)	43	9	4.77 : 1
M. Tech. (FBT)	83	10	8.3 : 1
M. E. (Plastic)	11	3	3.66 : 1
M. Sc. (Chemistry)	212	19	11.15 : 1
M. Sc. (Physics)	25	4	6.25 : 1
M. Sc. (Textile Chemistry)	40	10	4 : 1
M. Sc. (Engg. Maths.)	19	7	2.71 : 1

The UG Admissions are conducted centrally through Common Admission process by DTE.

2.1.8 Were any programmes discontinued/staggered by the university in the last four years? If yes, please specify the reasons.

No

2.2 Catering to Student Diversity

2.2.1 Does the university organize orientation / induction programme for freshers? If yes, give details such as the duration, issues covered, experts involved and mechanism for using the feedback in subsequent years.

The university organizes orientation programme for freshers. This programme is of one week duration and it begins with address by Vice chancellor followed by lectures by faculties of departments giving overviews of the course and visit to various facilities including Labs, hostel, etc.

2.2.2 Does the university have a mechanism through which the “differential requirements of the student population” are analysed after admission and before the commencement of classes? If so, how are the key issues identified and addressed?

Every UG/PG student undergoes an analytical ability test with the help of professionals. Report of this test is given to the student and informed to take necessary corrective actions as case may be. University also conducts various programs for improving their weakness.

2.2.3 Does the university offer bridge / remedial / add-on courses? If yes, how are they structured into the time table? Give details of the courses offered, department-wise/faculty-wise?

To help the students to have an easy transition from the education system of schools to the rigor of higher education, the institution has adopted the following strategies:

Bridge course - Fundamentals of Mathematics are refreshed over a period of 15 to 25 hours. Mathematics concepts are taught for students to cope with the subject.

Add-ons in the form of communication skills practice is conducted by the English faculty.

Remedial classes are conducted throughout the semester in the form of tutorial classes. Tutoring system is in place to address the knowledge gap and to better understand the curriculum.

Value-added Courses – The Institute conducts various Value-added courses for all the students starting from the second semester to enhance their employability capability.

Experts and scientists from the industries and research are invited for giving lectures to bridge the knowledge gap of the enrolled students.

Industrial visits are arranged to the students every year for all departments to build their strong practical knowledge to meet the future needs of the industries.

Faculty members put in extra efforts by giving information on contents beyond syllabus to enrich the knowledge of students. Every UG students is sent by the institute for six weeks of Inplant Training.

2.2.4 Has the university conducted any study on the academic growth of students from disadvantaged sections of society, economically disadvantaged, physically handicapped, slow learners, etc.? If yes, what are the main findings?

Yes, The Institute follows the the progress of the students throughout their stage in the University. The remedial courses are arranged accordingly.

2.2.5 How does the university identify and respond to the learning needs of advanced learners?

A majority of faculty members is doing high quality research and interacts on regular basis with industry. Faculty members interact closely with students and respond their need by providing seminar and project on latest advancement in the area. Many faculty members teach beyond the syllabus in the class.

The advanced learners are identified based on

- Performance in internal tests
- Regular attendance to classes
- The performance in lab and continuous evaluation tests
- Their participation in symposiums and seminars
- Their Performance in Co-Curricular and Extra Curricular
- activities.

University adopts the following measures to give higher challenges to the learning needs of such students:

- Opportunity are provided to be office bearers of different Co-curricular activities.
- Opportunities to interact with VIPs, Industry experts and celebrities during the events.

- Depute them to attend seminars and workshops on and off the campus.
- Students are encouraged to appear for GATE and other competitive examinations such as Civil Services, UPSC GRE, etc.
- Students are encouraged to take research projects along with the faculty members and to present papers at seminars and conferences.
- Special elective courses are offered as per the request.
- Advanced learners from PG classes are given opportunities to take Labs at UG level and help the slow learners.
- Advising to participate in classroom seminars, group discussions, technical quizzes to develop analytical and problem solving abilities in them and thereby, to improve their presentations skills.
- Motivating to access latest journals, reference material, helping the students to understand the emerging trends in the field of study and training them to use audio visual aids like PowerPoint, charts, models, etc., for effective presentation.
- Providing opportunities to develop their creativity by organizing intercollegiate as well as national level technical competitions.

2.3 Teaching-Learning Process

2.3.1 How does the university plan and organise the teaching, learning and evaluation schedules (academic calendar, teaching plan, evaluation blue print, etc.)?

Academic Calendar

Academic Calendar is prepared By the University academic committee. Academic calendar is published in the university diary and also displayed on the notice board.

Course Plan

A Course Plan includes the course objectives, contents of the course and how they are planned to be covered, reference books and the expected course outcomes from the students by undergoing the course. Apart from these details, the Course Plan also incorporates the Programme Educational Objectives, Programme Objectives, alignment of Course Outcomes with The Programme Outcomes and the contents which are about to be covered by the faculty apart from those specified in the curriculum, with

relevance to the course. The course plan is prepared by the respective faculty members at the beginning of each semester. It provides a better insight of the course.

1. Evaluation

Weight ages* of different modes of assessments shall be as under.

	In-Semester evaluation		End-Semester- Exam	Components of continuous mode
	Continuous mode	Mid Semester Exam		
Theory	30%	30%	40%	Quizzes, class tests (open or closed home assignments, group assignments, voice assignments, discussions, presentations
Practicals	50%	-	50%	Attendance, viva -voce, journal, project, experiments, tests

* Subject to change

2.3.2 Does the university provide course outlines and course schedules prior to the commencement of the academic session? If yes, how is the effectiveness of the process ensured?

Yes, the University provides a CD containing curriculum details along with students diary at the time admission. Course outlines and course schedules are given in the CD. This helps student to understand the content and, thereby help them to prepare more effectively.

2.3.3 Does the university face any challenges in completing the curriculum within the stipulated time frame and calendar? If yes, elaborate on the challenges encountered and the institutional measures to overcome these.

Yes, Public holidays are amended at the last minute by the state government. In such cases faculty members, conduct classes on Saturday to cover the lost time. As per the time-table every Saturday is a non-instructional day and it is utilized.

2.3.4 How is learning made student-centric? Give a list of participatory learning activities adopted by the faculty that contributes to holistic development and improved student learning, besides facilitating life-long learning and knowledge management.

The University provides various resources and practice sessions to ensure student centric learning and independent learning:

Resources:

Class rooms are equipped with Wi Fi LCD Projection Systems, Screens and green board. These facilities enhance lecture delivery and effective communication.

Access to large number of online technical journals such as IEEE, springer, Elsevier etc., enhances the level of understanding.

Lecture notes are distributed/discussed after each module is covered in the class.

Faculty performance is closely monitored through student feedback.

Encourage faculty to develop new experiments beyond syllabus.

Promotion of techno-cultural environment through various Departmental associations runs by faculty members.

Industrial visits are organized to interact with the people in the field and know the practical utilization of their knowledge.

Central computing facilities, e-Library facilities help students in self-learning process.

Guest lectures by eminent experts from industry and academia are organized.

Analytical courses are allotted with a tutorial class of one hour per week.

Usually the faculty members are instructed to make the class more interactive so that the students will have a better understanding of the subject. The University has Wifi campus to support the students for online learning.

2.3.5 What is the university's policy on inviting experts / people of eminence to deliver lectures and/or organize seminars for students?

University has several endowments through which various eminent experts are invited. Several national and international symposia are also conducted at department level to enrich student and faculty knowledge.

Students and faculty members are exposed to advanced level of knowledge and skills by organizing the expert lectures, seminars and workshops:

Guest Lectures by experts from Industry/Academia: All Departments of the college encourage conducting guest lectures for students and faculty from the experts from various industries, research organizations and from the field of academics. These lectures improve the professional knowledge of students and faculty.

Various Departments have their departmental technical associations. Each association has been conducting various technical competitions at intra and inter- college level. Students are encouraged to participate in various events.

2.3.6 Does the university formally encourage blended learning by using e-learning resources?

Yes,

Google Apps for Education

The institute has the tie-up with Google for educational applications. Under this facility, our faculty and students are able to meet mail facility along with all other educational apps like Calendar, Docs, Drive, Sites, etc.,

There are various licensed softwares purchased to understand fluid flow dynamics, simulation, chemical reaction kinetics, drug design etc. The students routinely use many of these packages to add a value to themselves.

University has good library which has digital component apart from hard copies. Some e-journals are subscribed and to all faculty and students can access the digital content.

2.3.7 What are the technologies and facilities such as virtual laboratories, e-learning, open educational resources and mobile education used by the faculty for effective teaching?

Virtual laboratories:

Several licensed softwares are used to understand reactor simulation and chemical kinetics. Drug design is also made using computer added drug design softwares.

E-learning and open educational resources:

University has been subscribing to several e-journals and few books which can be accessed by students and faculty from anywhere in the campus.

These resources are useful in effective teaching to students.

2.3.8 Is there any designated group among the faculty to monitor the trends and issues regarding developments in Open Source Community and integrate its benefits in the university's educational processes?

Yes, the Library Committee of the University monitors the issues regarding open source and integrate its benefits alongwith the usage of e-learning resources by the students and the faculty.

2.3.9 What steps has the university taken to orient traditional classrooms into 24x7 learning places?

University is in a process to record lectures and upload them on its web site.

On a trial bases, video cameras are mounted in two rooms and lectures are recorded. Recorded lectures can be seen by the student at any time. In addition, the students are encouraged to participate in crafting the contents for their own class consumption using e-groups.

2.3.10 Is there a provision for the services of counsellors / mentors/ advisors for each class or group of students for academic, personal and psycho-social guidance? If yes, give details of the process and the number of students who have benefitted.

A full time professional counselor is available on the campus to support students with psycho-social counseling. she interacts with the students in routingly and interacts with the parents of the students who need counseling support.

The difficulties that are identified during the counseling process include interpersonal problems, academic difficulties, personality problems, family problems, adjustment problems and physiological issues.

2.3.11 Were any innovative teaching approaches/methods/practices adopted/put to use by the faculty during the last four years? If yes, did they improve learning? What were the methods used to evaluate the impact of such practices? What are the efforts made by the institution in giving the faculty due recognition for innovation in teaching?

OHPs, LCD Projector, Audio-Video resources etc., are used for supplementing the teaching practices.

Staff members have adopted the new pedagogy of computer – aided teaching during the last four years. The course content presented through multi- media approach accelerates the attention span of the students.

Teachers encourage collaborative learning in the fast learners and the slow learners interact with each other clarifying conceptual difficulties which arise during the time of exchanging one's academic strengths and weakness. The teacher acts as subject guide and supervisor.

Extensive use of online-content and NPTEL and other Video lectures strengthen classroom teaching.

The members of faculty are using the following assessment tools which were introduced in the past 4 years:

Pre-Analysis Survey

Post Analysis Survey

Micro Analysis

Impact:

Students quality has increased in terms of their performance in qualifying examination.

Performance of students in various co-curricular and extra-curricular activities in other institutions has increased.

Improvement in the overall skills of the graduates has been observed.

Interest has been shown by students to join higher studies and undertake funded research projects.

The services of innovative teachers are duly acknowledged by awarding Best Teacher award on the basis of election by the students themselves.

The university periodically deposes the faculty to attend FDP/Seminar/Workshops related to Educational Technology conducted by national reputed institutions.

2.3.12 How does the university create a culture of instilling and nurturing creativity and scientific temper among the learners?

Faculty at ICT conduct continuous evaluation by giving them quizzes, class test, home assignments, viva voce assignments etc. These evaluation procedure ensures creative thinking.

The scientific temperament is derived by given seminars and laboratory project.

2.3.13 Does the university consider student projects mandatory in the learning programme? If yes, for how many programmes have they been (percentage of total) made mandatory?

During final of B. Tech. course, projects are made mandatory

* Number of projects executed within the university :

Every year over 140 B. Tech. students undertake experimental project work while 75 B. Chem. Engineering students prepare a complete techno economical feasibility of a plant designed individually as a final year project.

* Names of external institutions associated with the university for student project work:

Sometimes national institutions and industries are associated in project execution along with faculty of ICT. Most examiners for the projects are invited from industry.

* Role of faculty in facilitating such projects :

Faculty members generate ideas after discussion with student, provides facilities and mentor the entire project.

2.3.14 Does the university have a well qualified pool of human resource to meet the requirements of the curriculum? If there is a shortfall, how is it supplemented?

University has 82 well qualified teaching faculty having expertise in a wide variety of subjects in the area of chemical engineering, chemical technology, pharmaceutical and pharmaceutical technology, biotechnology, basic sciences and all branches of basic engineering subjects. Even though there is 40% vacancies of the teaching staff of the approved posts this vacancy is does not affect the requirement of the quality faculty as institute has instituted many endowment faculty chairs supported by Industries, well wishers and philanthropists. In addition, Departments of Science and Technology, Department of Biotechnology and University Grants Commission have instituted many

faculty positions in the form of Faculty Recharge, DST-Inspire fellows and DAE-Scientists in the institute. This faculty also help in a big way to fill the shortfall of faculty vacancies in government approved positions.

2.3.15 How are the faculty enabled to prepare computer-aided teaching/ learning materials? What are the facilities available in the university for such efforts?

Most of the faculty of the institute are well experienced in use of computer aided teaching/learning materials. The new faculty recruits are encouraged to join pedagogy training workshops organised by the university and outside institutions where they are trained to use advanced pedagogy tools using computers.

University also organises such type of inhouse programmes for the faculties time to time. Institute has provided remote controlled LCD Projector facilities in each of the class rooms and the seminar hall where the teaching learning activities are performed. This LCD Projector are having the facility of Projecting Powerpoint Presentation and the short films with Audio-Video capability.

2.3.16 Does the university have a mechanism for the evaluation of teachers by the students / alumni? If yes, how is the evaluation feedback used to improve the quality of the teaching-learning process?

At the end of every semester students are required to provide evaluatory feedback about the teachers for every subject wherein the information related to the adequacy of the syllabus for the course, methodology used by the teachers for teaching subjects, evaluation techniques used by the teachers and their relevance to the testing of skills of the students, quality of the teaching learning process and other relevant information is collected centrally. This students feedbacks are evaluated thoroughly by the Deans committee and the required cases of the faculty who need improvement in their performance are referred to the committee for taking necessary action which will help in improving the quality of teaching learning process by such faculty. This review of the feedback is being conducted regularly after every semester.

2.4 Teacher Quality

2.4.1 How does the university plan and manage its human resources to meet the changing requirements of the curriculum?

Teachers are encouraged to update their teaching and presentation skills by making them attend effective teaching workshops conducted at various management as well as technical institutes. Occasionally an expert in teaching is invited for a day or two to address the faculty, informing them about the latest development in teaching methodologies and communication skills. The students feedback which is collected every semester is shared with the faculty by along with the recommendations and advices of the senior faculty to identify their lucane and improve their teaching skills in terms of language, projects, quizzes and assignments to involve the students-teachers interactions. Every year four to five young and mid level faculty are sent to these effective teaching workshops which are paid for by the institutes. The faculty is encouraged to arrange expert seminars by the visiting scientist/researchers so that they can include the latest findings in their undergraduate and postgraduate teaching. The Curriculam is periodically (every 4-5 years) revised, by taking into account the feedback from the industry, alumni, past students to make the curriculam dynamic and relevant.

2.4.2 Furnish details of the faculty :

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	7	1	14	4	18	10	54
M.Phil.	-	-	-	-	-	-	-
PG	-	-	1	1	2	1	5
Endowment Teachers							
Ph.D.	8	1	7	-	6	-	22
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-
UGC/FRP Teachers/DBT							

Ph.D.	1	-	-	-	16	12	29
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

2.4.3 Does the university encourage diversity in its faculty recruitment? Provide the following details (department /school-wise).

Yes, through the DST-inspire programme and UGC faculty recharge programme we have employed faculty with the expertise in allied areas in different departments to explore the possibility and opportunity of interdisciplinary research. As an example A faculty who is Ph. D in Physics works with chemical Engineering faculty to enhance the landscape of research of chemical engineering including a subject such as Nanotechnology. A faculty with a Ph. D in Polymers and chemical Engineering is encouraged to participate in the teaching and research of technology in Oleochemicals. Similarly New Postgraduate Courses (M. Tech. In Green Technology, M. Tech. In Perfumery and Flavor Technology) are formulated and conducted involving faculty from different departments working together.

Department / School	% of faculty from the same university	% of faculty from other universities within the State	% of faculty from universities outside the State	% of faculty from other countries
Department of Chemical Engineering	About 80%	About 5%	About 5%	10% (where Ph. D is acquired from other Counties)
Department of Chemistry	About 70%	About 10%	About 10%	10% (where Ph. D is acquired from other Counties)
Department Dyestuff Technology	About 70%	About 10%	About 10%	10% (where Ph. D is acquired from other

				Countires)
Department of Oil, Oleochemicals & Surfactans Technology	About 70%	About 10%	About 10%	10% (where Ph. D is acquired from other Countires)
Department of Food Engineering & Technology	About 60%	About 20%	About 20%	-
Department of Pharmaceutical Sciences & Technology	About 60%	About 20%	About 20%	10% (where Ph. D is acquired from other Countires)
Department of Fibres & Textile Processing Technology	About 90%	About 10%	-	-
Department of Polymer & Surface Coating	About 80%	About 20%	-	-
Department of General Engineering	About 60%	About 10%	About 20%	-
Department of Physics	0	About 40%	About 60%	-
Department of Mathematics	0	About 10%	About 90%	-
DBT-ICT Centre	About 5%	About 30%	About 65%	-

2.4.4 How does the university ensure that qualified faculty are appointed for new programmes / emerging areas of study (Biotechnology, Bio-informatics, Material Science, Nanotechnology, Comparative Media Studies, Diaspora Studies, Forensic Computing, Educational Leadership, etc.)? How many faculty members were appointed to teach new programmes during the last four years?

Since the Institute of Chemical Technology deals only with chemical sciences subjects related to Biotechnology, Bioinformatics, Material Science and Nanotechnology are included by bringing in faculty with a credible background (through Publications and learned seminars/lectures) following the procedure as recommended by

AICTE/UGC/DHE involving eminent national and international experts in the respective areas. More than 30 faculty having a variety of expertise, not available previously in the departments have been recruited in the past four years. The faculty is also periodically (as per the UGC norms) are allowed to avail sabbaticals to international universities to improve their skills further.

2.4.5 How many Emeritus / Adjunct Faculty / Visiting Professors are on the rolls of the university?

More than 114 as visiting professors, Emeritus professors (about 7), Adjunct faculty (about 4) are on rolls of the university.

Visiting Faculty 2014-15

Sr. No.	Name of the Faculty	Department /Branch
1	Dr. Smita Limaye	Pharma.
2	Dr. Krishnapriya Mohanraj	Pharma.
3	Mr. I. K. Khan	Pharma.
4	Mr. M. H. Navlur	Pharma.
5	Mrs. Radha Joshi	Pharma.
6	Mr. V. Y. Sane	Pharma.
7	Dr. K. S. Mallikarjuna Rao	Mathematics
8	Ms. Ritika M. Sachdev	Mathematics
9	Ms. Aparna B. Patil	Mathematics
10	Dr. Ashok Nag	Mathematics
11	Dr. Ashok Pandit	Mathematics
12	Mr. Madan Mohan Aggarwal	Mathematics
13	Mr. Mangesh L. Mokashi	Oils
14	Dr. Sitaram Dixit	Oils
15	Dr. Kishor Ambawade	Oils
16	Dr. Sushil Dubal	Oils
17	Mrs. Poonam Dhake Kolhe	Oils
18	Prof. P. R. Kulkarni	Oils
19	Dr. A. V. Joshi	Oils
20	Prof. V. V. Mahajani	Green Tech.
21	Mr. Javed N. Sheikh	Fibres & Textile
22	Mrs. Lipika S. Nair	Fibres & Textile
23	Dr. Veena Khilnani	Chemistry
24	Dr. Lakshmy Ravishankar	Chemistry
25	Ms. Elizabeth Joseph	Chemistry
26	Prof. Bipin Mehta	Chemistry
27	Dr. Hemant Khanolkar	Chemistry

28	Dr. Indraneel Chatterjee	Chemistry
29	Prof. N. V. Thakkar	Chemistry
30	Mr. Dilip Bedekar	Perfumery and Flavor
31	Mr. Amol Kulkarni	Perfumery and Flavor
32	Mrs. Amrita G. Walavalkar	Perfumery and Flavor
33	Mr. S. R. Iyer	Perfumery and Flavor
34	Mr. Sitaram Dixit	Perfumery and Flavor
35	Dr. Rashmi Kolhe	Food Engineering & Tech.
36	Dr. J. R. Bandekar	Food Engineering & Tech.
37	Dr. Joseph I. Lewis	Food Engineering & Tech.
38	Prof. Mandar Bhanushe	Mathematics
39	Prof. S. Sivaji Ganesh	Mathematics
40	Mr. Madam Mohan Agarwal	Mathematics
41	Dr. Ashok Sabale	Fibres & Textile
42	Mr. Saptarshi Maiti	Fibres & Textile
43	Dr. Hormaz Patwa	Food Engineering & Tech.
44	Dr. Shruti Baadkar	Food Engineering & Tech.
45	Dr. Smita Kandar	Food Engineering & Tech.
46	Dr. M. Tippanna	Polymer & Surface Engg.
47	Dr. M. A. Shenoy	Polymer & Surface Engg.
48	Mrs. Gomathi Shridhar	Chemistry
49	Prof. D. D. Kale	General Engineering
50	Prof. Yogesh Anvekar	Common Subject
51	Dr. Dilip G. Udas	Dyestuff Technology
52	Prof. P. A. Sathe	Chemistry
53	Dr. Ameeya Bhagwat	Physics
54	Prof.(Mrs.) Jyoti Rao	Physics
55	Dr. Subhendu Roychaudhari	Physics
56	Prof. H. S. Kalsi	Physics
57	Prof. N. C. Debnath	Physics
58	Mr. Abhimanyu Yadav	Chemistry
59	Mr. V. C. Gupte	Fibres & Textile Processing Technology
60	Mrs. Vibhuti Barve	Fibres & Textile Processing Technology
61	Dr. Ashok Sable	Fibres & Textile Processing Technology
62	Dr. G. V. G. Rao	Fibres & Textile Processing Technology
63	Dr. Madhura Nerurkar	Fibres & Textile Processing Technology
64	Dr. Vilas Shirhatti	Food Engineering & Tech.
65	Dr. Shyam R. Asolekar	Food Engineering & Tech.
66	Ms. Smita Kandar	Food Engineering & Tech.
67	Mr. D. R. Rangaprasad	Food Engineering & Tech.

68	Dr. V. Malathy	Food Engineering & Tech.
69	Dr. Sharvari Ghayal	Food Engineering & Tech.
70	Dr. Lambert Rodrigues	Food Engineering & Tech.
71	Dr. Parag Saudagar	Food Engineering & Tech.
72	Prof. K. Niranjan	Food Engineering & Tech.
73	Dr. Gollakota V. V. Hemasunder	Mathematics
74	Mrs. Hiyasini T.	Mathematics
75	Dr. Manoj Mishra	Mathematics
76	Dr. Narayana Derapaneni	Mathematics
77	Dr. D. K. Deshpande	Oils, Oleochemicals & Surfactants
78	Dr. Renuka Thergaonkar	Oils, Oleochemicals & Surfactants
79	Dr. Adinath Mahadeo Ware	Oils, Oleochemicals & Surfactants
80	Dr. A. T. Mirajkar	Oils, Oleochemicals & Surfactants
81	Dr. Shrikant S. Sakhalkar	Pharmaceutical Sci. & Tech.
82	Dr. Ajit Gorakshakar	Pharmaceutical Sci. & Tech.
83	Prof. Jyoti Rao	Physics
84	Dr. S. Roy Chowdhury	Physics
85	Mr. Shekhar Deodhar	Physics
86	Dr. Suchitra Roy Chowdhury	Pharmaceutical Sci. & Tech.
87	Dr. Vrushali Keer	Pharmaceutical Sci. & Tech.
88	Mrs. Surjeet Kaur	Pharmaceutical Sci. & Tech.
89	Dr. Madhura Vaidya	Pharmaceutical Sci. & Tech.
90	Dr. Arti Prabhu	Pharmaceutical Sci. & Tech.
91	Dr. Jyoti Baliga	Pharmaceutical Sci. & Tech.
92	Dr. V. Chandrasekharan	Pharmaceutical Sci. & Tech.
93	Dr. Krishnapriya	Pharmaceutical Sci. & Tech.
94	Dr. Vaidehi Limaye	Pharmaceutical Sci. & Tech.
95	Ms. Shefali Chutke	Pharmaceutical Sci. & Tech.
96	Dr. Rupali Redkar	Pharmaceutical Sci. & Tech.
97	Ms. Namita Hegde	Pharmaceutical Sci. & Tech.
98	Dr. M. Sriram	Chemical Engineering
99	Dr. Om Prakash Goyal	Chemical Engineering
100	Dr. Yogesh Anvekar	Chemical Engineering
101	Ms. Anjali Majumdar	Chemical Engineering
102	Shri. Mahesh Aradhye	Polymer & Surface Engineering
103	Shri. S. P. Joshi	Polymer & Surface Engineering
104	Dr. Tanuja Parulekar	Chemistry
105	Dr. N. V. Thakkar	Chemistry
106	Dr. P. P. Tekale	Chemistry
107	Mr. S. K. Sharma	Chemistry
108	Prof. P. K. Pujari	Chemistry

109	Prof. Pushpa kulkarni	Perfumery & Flavor Technology
110	Dr. Lubna Mansuri	Common
111	Dr. Sheela Philip	Common
112	Mr. V. V. Bhujle	Green Technology
113	Mr. Dilip G. Udas	Dyestuff Technology
114	Mr. Virupaksha A. Bastikar	Mathematics

Adjunct Faculty

Sr. No.	Adjunct Professor
1	Prof. Asfiya Contractor
2.	Prof. P. K. Ghosh
3.	Prof. J. B. Joshi
4.	Dr. Kaustubh Joshi
5.	Prof. A. K. Kalkar
6.	Prof. S. V. Panse
7.	Prof. M. R. Sawant

Emeritus professors

Sr. No.	Name of the Faculty	Department
1.	Prof. J. B. Joshi	Department of Chemical Engineering
2.	Shri. S. B. Patel	Department of chemical Engineering
3.	Dr. M. V. Karwe	Department of Food Engineering & Technology
4.	Shri. S. M. Mokashi	Department of Chemical Engineering
5.	Dr. A. Sapre	Department of Chemical Engineering
6.	Dr. Shriram Manohar	Department of Chemistry
7.	Dr. N. V. Iyer	Department of Oils, Oleochemicals and Surfactants Technology

2.4.6 What policies/systems are in place to academically recharge and rejuvenate teachers (e.g. providing research grants, study leave, nomination to national/international conferences/seminars, in-service training, organizing national/international conferences etc.)?

As can be seen from the annual reports past four years of the Institute. All the faculty is actively involved in procuring research grants, avail sabbatical/study leaves, are nominated and funded to attend national and international conferences and are provided in service training (even non-teaching faculty) during their stay at ICT.

The Details can be seen from the annual report of the institute available on the website.

2.4.7 How many faculty received awards / recognitions for excellence in teaching at the state, national and international level during the last four years? (2011-2015)

Date	Name	Accomplishment
14/12/2015	ICT	FICCI Awards – For Research and Best Quality faculty
	Prof G D Yadav	National Eminence Award – in the sadabhishekam Mahotsavam of His Holiness Jayendra Saraswathi
	Prof.S S. Lele Prof.A.M. lali	UAE-ICT distinguished Alumni Award -2015- Academic category
	Prof. Rekha Singhal	Professor Man Mohan Sharma Award for Science and Technology –Marathi Vidnyan Parishad- 2015
	Prof. A.B. Pandit	Elected for the Fellowship of TWAS 2015
	Prof . P .A. Mahanwar Dr. Sadhana Sathye Dr. V. K. Rathod	Elected as fellows of Maharashtra Academy of Sciences - 2015
	Prof. Vandana Patravale	OPPI Woman Scientist Award for the year 2015
	Dr. S. S. Arya	Selected as 2016 ILSI – International Life Science Institute- Malaspina International Scholar
	Prof. S. S. Bhagwat	Delivered an invited lecture at the Asian conference on colloid and interface science in Japan in November 2015
	Dr. Parag Gogte	Delivered invited lecture at AOSS- 2 – second Asia Oceania sonochemical society conference in Kulalampur, Malaysia in July 2015 Visited Istanbul under the INSA- Turkish academy of sciences exchange programme October 2015
	Dr. Anant Kapadi	Appointed as the Associate Editor of RSC advances - a royal society journal
	Dr. Akshay Rane	Went as a resource person for CSIR NET training programme held at ISC Mumbai
	Dr. Dipanwita Das Dr. Satyagit Saha	Received DST- SERB (Science and Engineering Research Board) start up research grant in Sep. 2015
01/07/2015	Dr. A. R. Kapdi	Received 54,000 Euro from the AVH foundation for the period of 3 years
15/05/2015	Prof. G.D.Yadav	A project proposal submitted to the Kolhapur Municipal Corporation for handling the pollution of the Rankala Lake of Kolhapur was approved
	Dr. Prakash Vaidya	received University of Liverpool - India Fellowship

		Award 2015
	Dr. D. V. Pinjari	Received Fulbright OLF Award 2015 sponsored by CIES and OIE (state Departments, Federal Government, USA) in January 2015
	Dr. V. B. Patravale	Received Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists - 2013 by Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) in January 2015
	Dr. Akshay Rane	Invited talk at an international conference ICMACS held at Don bosco College, Kannur, Kerela
15/01/2015	Prof. G. D. Yadav	American Chemical Society (ACS) published a Festschrift in Industrial and Engineering Chemistry Research Journal in honor
	Prof. G. D. Yadav	Elected as Chair of ACS India International Chemical Sciences Chapter
	Prof. G. D. Yadav	The Indian Chemical Council of Chemist gives Life Time Achievement award and a Gold Medal on 15 th December 2014 at Dhanbad
	Prof. G. D. Yadav	The Indian Institute of Chemical Engineers and Reliance Industries awarded "Dhirubhai Ambani Oration Award CHEMCON-2014, Chandigarh
	Prof. V. B. Patravale	Dr. P. D. Patil Best Pharmaceutical Scientist of the year Award – 2014 by (APTI) M.S.
	Prof. B. N. Thorat	VASVIK award in chemical Science and Technology
	Prof. Pandit	Wipro Earthian Award 2013.
	Prof. S. S. Bhagwat	8 th Bry Air Awards for excellence in HVAC and R (2013)
	Prof. A. M Lali	VASVIK award in Biological Science and Samshodhanvikas Kendra Technology award by Vividhalakshi Audyogik, Mumbai
	Prof. B. M. Bhanage	Prof. M.M. Sharma Sci. & Tech. Award" by Marathi Vidnyan Parishad for the year 2014
	Dr. J. M. Nagarkar	Elected as Fellow of Maharashtra Academy of Sciences
	Dr. Parag Gogate	Elected as Fellow of Maharashtra Academy of Sciences Received SCEJ Award for outstanding Asian researcher and engineers in Japan
	Dr. D.V. Pinjari	Young Engineer Award for 2014-2015 "Wipro Earthian Award 2013" by Wipro foundation Banglore and Dr. M. P. Chary Memorial Award 2013 by IICChE

		Elected as “Young associate” to Maharashtra Academy of Sciences.
	Dr. D.V. Pinjari	Swiss Government Excellence Scholarship and Fullbright Neharu International Fellowships for postdoctoral studies 2013-2014
	Dr. Sujit Jogwar	Late (Mrs.) Padma Kelkar endowment award
	Dr. Neetu Jha	DAE ICT Young research scientist award
	Dr. Parag Nemade	DAE ICT Young research scientist award A project grant through DBT-Bill and Melinda Gates foundation for the project Re-Invent the Toilet Challenge (RTTC)
	Dr. Ratnesh Jain	N. R. Kamath book Award for the book entitled Nanoparticle Drug Delivery : Perspective on the Transition from the Laboratory to Market’ (Woodhead Publishing Series in Biomedicine, Elsevier, 2014)
31/05/2014	Prof. G. D.Yadav	Vice Chancellor, has been recommended an extension of his tenure as Vice Chancellor and R.T. Mody Distinguished Professor for a further period of five years i.e. up to 28 th May, 2019
	Prof. G. D.Yadav	Delivered a series of lectures at the Imperial College, London Elected as a member of the editorial board of Green chemistry, a RSC journal
	Prof. Pandit	Delivered M.G.Subbarao memorial lecture at NIT, Suratkal and Prof.Gopal Tripathi memorial lecture at IIT-BHU on 7 th February 2014 and 11 th April 2014 respectively
	Prof. Teli	Received the ‘Textile Association India- Ratna’ award on 9 th April 2014
	Dr. Ajit Kumar	Co author of two books (i) ‘A basic course in real analysis and (ii) Calculus using sage’
	Dr Parag Gogate	Outstanding Asian Engineer and Researcher award from the Society of Chemical Engineers, Japan(SCEJ) in March 2014
	Dr. Anant Kapdi	Received the DAAD scholarship for a Visiting Scientist to carryout collaborative research at Technische University at Munchen, Germany
16/01/2014	Prof. G. D.Yadav	Received the “B.P.Godrej Life Time Achievement Award” of IChE for the year 2013 on 27 th December 2013
	Prof. G. D.Yadav	Bestowed with I.C.C. D. M. Trivedi Lifetime Achievement Award for his Contributions to Indian

		Chemical Industry (Education & Research) for the year 2012.
	Prof. V. Patravale	Received a grant from Melinda Gates foundation for their work on eco-friendly nano vaccine for nasal immunization.
	Prof. P. Devarajan	Selected for Prof. C.J. Shishoo award for research in pharmaceutical sciences by the association of pharmacy teachers of India
	Prof. N. Sekar	Elected as the Members of the Maharashtra Academy of Sciences
	Dr. V.N. Telvekar	Elected as the Members of the Maharashtra Academy of Sciences
	Dr. S. T. Maske	Elected as the Young associate of the academy.
	Prof. A. M. Lali	The vasavik award in the category of biological sciences and technology from the Vividlakshi Audyogik Samshadan Vikas Kendra
	Prof. A. B. Pandit, Dr. S. P. Deshmukh Dr. D. V. Panjari	Received the Wipro Earthian award. They would be the Mentors of the municipal solid waste energy and environment project
18/12/2013	Prof. V. G. Gaikar	D.O.S.T. Medal and Distinguished Speaker Award of IChE
16/07/2013	Prof. G. D. Yadav	Shri. D.M. Trivedi Lifetime achievement award of ICC in education and research
31/05/2013	Prof. N. Sekar	DST will be part of a bilateral three years programme between India and Argentina. He will be visiting the University of Buenos Aires in June 2013 to deliver a series of talks under this programme
	Prof. A.R. Juvekar	Received the best research paper award from the AI Ameen College of Pharmacy. This award was given to her in the 17 th Annual Convention of APTI at Manipal.
	Dr. G.U. Chaturbuj	Received a post doctoral fellowship for one year from the UGC under the Obama – Singh Knowledge Initiative scheme – 2012
	Dr. Anant Kapdi	Recipient of the Alexander Von Humboldt fellowship is at Germany from 25 th May – 25 th July 2013
	Dr. S.T. Maske	Received the Third National Award for Technology Innovation from the Ministry of Chemicals and Petrochemicals, Government of India
	Dr. Prajakta Dandekar Jain	Received the Biocare Award for Women Scientists for the year 2013 from the DBT
31/12/2012	Prof. S.S. Bhagwat	received IChE NOCIL Award for excellence in design of process equipment for 2012 on 27 th

		December 2012
	Prof. P.V. Devarajan	nominated as a member of on the board of scientific advisors of the Controlled Release Society of USA
	Prof. A.B. Pandit	The INSA Teacher Award-2012 (under the age of 55).
	Dr. A. W. Patwardhan	Elected as fellow of Maharashtra Academy of Sciences.
	Dr. Vandana B. Patravale	Got the BV DUPCP- Pharma Teacher Award for the year 2012
	Dr. Prajakta Dandekar Jain and Dr. Ratnesh Jain	Received DAE Young Scientist Award (2012). Young Associateship of the Maharashtra Academy of Sciences
	Dr. Anant Kapdi	The INSPIRE FACULTY AWARD Elected as a Young Associate of the Maharashtra Academy of Sciences He also received a return fellowship by Alexander Van Humboldt foundation to visit Germany
	Dr. Parag Gogate	Invited to deliver lectures at 18 th Advance Oxidation Technology Conference at Florida, USA. He has also been invited to deliver lectures at the process intensification workshop, Ireland
	Prof. G.D. Yadav	Appointed to the Council of Deemed Universities with the Minister of Human Research Development as the Chairman
03/07/2012	Dr. Ratnesh Jain	Jan-2012 Ramanujan Fellowship April 2012- Ramlingaswamy re-entry fellowship INSPIRE faculty fellowship
	Dr. Prajakta Dandekar-Jain	Dr. Jonh Kapoor Assistant Professor of pharmaceutical Technology Ramanujan Fellow, DST, GOI

2.4.8 How many faculty underwent staff development programmes during the last four years (add any other programme if necessary)?

Academic Staff Development Programmes	Number of Faculty/Staff Member
Refresher Courses	28
HRD Programmes	88
Orientation Programmes	28

Staff Training conducted by the University	30
Staff Training conducted by the other institutions	151
Summer/Winter schools, workshops, etc.	4

2.4.9 What percentage of the faculty have

- **been invited as resource persons in Workshops / Seminars/ Conferences organized by external professional agencies?**

50% of Assistant Professors and 100% of Associate Professors and Professors.

- **participated in external Workshops / Seminars /Conferences recognized by national / international professional bodies?**

80% to 100%

- **presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies?**

80% to 100%

- **teaching experience in other universities / national institutions and other institutions?**

30%

- **industrial engagement?**

80%

- **international experience in teaching?**

20%

2.4.10 How often does the university organize academic development programmes (e.g.: curriculum development, teaching-learning methods, examination reforms, content / knowledge management, etc.) for its faculty aimed at enriching the teaching learning process?

Curriculum Development : Every 6 years

teaching-learning methods : Every 2 years

examination reforms : Every year

content / knowledge management : Every 6 years

But the faculty is sent to professional development on continuous basis.

2.4.11 Does the university have a mechanism to encourage

- **Mobility of faculty between universities for teaching?**

Yes faculty conducts specific courses related to their expertise in emerging and young technology institutes and also industries for their skill upgradation.

- **Faculty exchange programmes with national and international bodies?**

ICT has a large number of MOUs signed between national and international university/institutes through which regular teacher and students exchange programmes are conducted for postgraduate degrees.

If yes, how have these schemes helped in enriching the quality of the faculty?

These interactions have resulted in improving their understanding of the societal needs and how their expertise can be utilized for nation building.

2.5 Evaluation Process and Reforms

2.5.1 How does the university ensure that all the stakeholders are aware of the evaluation processes that are in place?

Prospectus: All the information about examination rules, marking / grading scheme, formula to calculate CGPA and SGPA etc. is given in the handbook prospectus.

Website: Website also gives all the information mentioned in the prospectus. Apart from that information, Examination time table, filling up of examination form, assessment rules, results etc is also displayed on the website. We have also provided ID and Password to the parents that they can see the progress and attendance of their ward(s) online.

Notice Board: The information given in the handbook and website is also displayed on the notice board for the benefit of students who do not have more frequent access to the website. This

2.5.2 What are the important examination reforms initiated by the university and to what extent have they been implemented in the university departments and affiliated colleges? Cite a few examples which have positively impacted the examination management system.

Paper Assessment: Answer sheets are shown to the students and discussed. Then a final mark list is prepared and submitted to the examination section by the concerned

examiner. A unique verification system which ensures satisfaction of the student and transparency in assessment.

Provision of Repeat Examination: Students who have failed / been absent in the regular / scheduled examination, can appear for repeat Semester examination which is held within a month after the declaration of End Semester results. This provides unique opportunity to the weaker students to make up their academic progress as such students need not wait till the next year. In many cases, this repeat End Semester examination is found to be helpful as the ATKT burden is reduced or not carried forward. Students can concentrate on their regular semester work and thereby improving overall academic performance.

Examination Audit: Examination Audit Committee comprising CoE's of external Universities / Institutes have been constituted to monitor the evaluation process.

2.5.3 What is the average time taken by the university for declaration of examination results? In case of delay, what measures have been taken to address them? Indicate the mode / media adopted by the university for the publication of examination results (e.g. website, SMS, email, etc.).

After completion of examination, results have always been declared in not more than 30 days. The institute required results to be declared within 30 days of completion of examination. The institute has never experienced any delay as there is a streamlined and efficient system of examination and evaluation in place.

Examination results are declared / published on the website of the Institute as well as on the notice board.

2.5.4 How does the university ensure transparency in the evaluation process? What are the rigorous features introduced by the university to ensure confidentiality?

Transparency in evaluation process: Answer sheets are shown to the students and discussed. Then a final mark list is prepared and submitted to the examination section by the concern examiner. A unique verification system which ensures satisfaction of the student and transparency in assessment.

Confidentiality: All examination related stationary is kept in the custody of senior office Admin staff and monitored. Two sets of question papers are invited from the teachers and anyone of the paper is selected for examination purpose. The printing / photocopying of papers is done in the examination section only where CCTV camera are fitted. Students are strictly prohibited from entering into the examination section.

2.5.5. Does the university have an integrated examination platform for the following processes?

Yes. An examination committee is headed by Dean (AP) and Co-Chaired by CoE has senior faculty as a members of the committee and Administrative staff (deputed for exams) looks into the various processes related to examinations.

- Pre-examination processes – Time table generation, OMR, student list generation, invigilators, squads, attendance sheet, online payment gateway, etc.

Time table, students lists are displayed in advance. Invigilators are allocated blocks immediately before the start of examination.

Examination fees is collected during admission.

- Examination process – Examination material management, logistics, etc.

The Administrative staff controls usage of examination stationary and monitors it.

Two sets of question papers are invited from the paper setters (paper setters names are provided by the HOD and is then approved in the meeting) and any one of them is selected and printed. This ensures confidentiality of the papers.

Invigilators are called 30 min before the scheduled examination and they are given proper instructions and also a printout containing instructions to be readout in the examination hall. Invigilators reach examination hall 15 to 20 minute before the scheduled time to distribute the answer sheets so that students get enough time to write their details such as examination roll numbers, course code and name etc. Then administrative staff carries packed bundles of question papers to deliver in each class room before 5 minutes of the scheduled time.

- Post-examination process – Attendance capture, OMR-based exam result, auto processing, generic result processing, certification, etc.

After assessment by individual teacher final mark-sheets are displayed by the examination section. Result generation is computerized and done in house. Mark-list are printed in the institute through a computerized software. A software assigns unique hologram numbers to each mark-sheet and holograms are pasted on the mark-sheet. They hologram record is maintained for verification purpose in future.

2.5.6 Has the university introduced any reforms in its Ph.D. evaluation process?

Ph. D. students are supposed to take two credit and three audit courses as per UGC guidelines. Students have freedom to select credit and audit courses of their choice and

related to their Ph. D. problem.

After the completion of experimental/table work student gives colloquium in the department in presence of departmental students and faculty members. The colloquium notice is given at-least one week before the scheduled date. Colloquium notice is displayed on the website as well as on the notice board. The colloquium notice contains title of the proposed thesis and abstract of the research work done. Interested students and faculty members from other departments attend this colloquium. These colloquium ensures that sufficient experimental work has been carried out by the student. If student receive any suggestions during the colloquium, additional experimental work may be carried out and then a synopsis is submitted to the academic office. Research Recognition Committee (RRC) of each department is conducted quiet frequently (minimum two in a year) and suitable referees are appointed by the committee to evaluate thesis work. We have initiated a practice where all these will have the same format. Initially spiral bound two copies of the thesis are prepared by the students, which are sent to the two referees for the evaluation. After receiving favorable comments from both the referees, one of the referee is invited to conduct viva-voce and the question raised by the other referee are also asked. We have introduced open defense system for Ph. D. students. After successful completion of open-defense, the student is asked to make necessary changes/corrections in the thesis as suggested by referees. The changes made by the student in the final (hard bound) copy of the thesis are seen and verified by the Dean (AP) before submitting it to the thesis section for record. We have started keeping soft copies of theses in the CD form as well.

2.5.7 Has the university created any provision for including the name of the college in the degree certificate?

N. A.

2.5.8 What is the mechanism for redressal of grievances with reference to examinations?

Assessed papers are shared with students. The marking scheme is discussed openly in the class. This gives a forum to students to settle any grievances in assessment. Besides this, a grievance redressal cell exists to address other issues, if any.

2.5.9 What efforts have been made by the university to streamline the operations at the Office of the Controller of Examinations? Mention any significant efforts which have improved the process and functioning of the examination division/section.

COE is accessible to solve queries, if any.

Administrative staff is available for information related to examination.

Relevant software and hardware are provided and upgraded for smooth conduct of examination processes.

Meetings of examination committee are held regularly to discuss exam related matters.

Student body is consulted while preparing exam schedule.

2.6 Student Performance and Learning Outcomes

2.6.1 Has the university articulated its Graduate Attributes? If so, how does it facilitate and monitor its implementation and outcome?

The graduates of ICT is expected to employ his/her knowledge in solving problems in real life situations. The Success of implementation of these graduate attributes can be judged on the basis of Continuous demand in campus placements of graduates and postgraduates, post doctoral fellowships in foreign universities, in general showing the increasing employability of ICT student community.

2.6.2 Does the university have clearly stated learning outcomes for its academic programmes? If yes, give details on how the students and staff are made aware of these?

As can be seen from the subject documents of the syllabi of the academic programme, each subject, in terms of its expected outcomes and deliverables and its role in the over all degree programme, is well defined. These documents are prepared by the teacher/faculty teaching the specific subject.

2.6.3 How are the university's teaching, learning and assessment strategies structured to facilitate the achievement of the intended learning outcomes?

The flow of information in each program is structured in stepwise and interconnected manner to achieve the necessary attributes in the graduates. The periodic revision of curriculum and the students/alumni feedback also ensures that the learnings are implemented in continuous manner to update the requirements in the dynamic landscape of the technology.

2.6.4 How does the university collect and analyse data on student learning outcomes and use it to overcome the barriers to learning?

The data related to the employment record, examination performance in each subject is available as a soft copy (also hard copy) which is shared with the subject teachers and barriers, if any are overcome in consultation with all the stakeholders i.e. faculty, Dean (academic programme), students.

2.6.5 What are the new technologies deployed by the university in enhancing student learning and evaluation and how does it seek to meet fresh/ future challenges?

The first step in the learning was to get the students to the class to at least hear and listen carefully to the teachers. ICT employed a computerised attendance system for students as well as faculty which is periodically reviewed by the Deans committee and appropriate action is taken such as informing the parents about the progress of their ward, deficiency in teaching/curriculum to meet the future challenges and take proactive actions.

Newly available computational tools, such as molecular simulation, CFD, COMSOL and properly prediction are now exhaustively used in teaching in core courses.

ICT has also promoted activities where student learn new packages and conduct simulations on their own to add significant value to their abilities.

CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

The process of promoting research culture among faculty and students is ensured by facilitating participation in research and related activities, providing resources and other facilities. ICT is regarded as a research Institute even for UG students.

3.1.1 Does the university have a Research Committee to monitor and address issues related to research? If yes, what is its composition? Mention a few recommendations which have been implemented and their impact.

A progress review committee is set up for every Ph.D student which monitors the work of the student. On frequent basis atleast one presentation to the committee is required in a year.

As a criterion for upgradation of fellowship from JRF to SRF, the progress is monitored by a committee consisting of Dean (RCRM), Head of the Department, research supervisor and an industry expert. This is mandatory for all funding agencies such as UGC, DST, DBT etc. and even the industry.

3.1.2 What is the policy of the university to promote research in its affiliated/constituent colleges?

ICT does not have any affiliated or constituent colleges. Hence this point is not applicable.

3.1.3 What are the proactive mechanisms adopted by the university to facilitate the smooth implementation of research schemes/projects?

The Institution facilitates its faculty to undertake research by providing research funds (seed money)

There are funds organized under Golden Jubilee Endowment through which seed money is provided to young faculty. A list of faculty who were given these awards and the amount for the last three years is given in below.

Year	Name of the Faculty	Department	Research Title	Research Fund Amt. in Rs.
2013-14	Shri. Adarsh Rao	Department of Polymer and Surface Engineering	Effect of acrylic triblock copolymers on the properties of polyester	60,000/-
	Shri. Vivek.R.Gaval	Department of General Engineering	Development of fly ash based engineering thermoplastics composites for automotive applications.	50,000/-
	Dr. Sadhana Sathaye	Department of Pharmaceutical Sciences and Technology	Evaluation of medicinal phytoconstituents for their antiepileptic potential.	75,000/-
2014-15	Prof. Mariam S. Degani	Department of Pharmaceutical Sciences and Technology	Fabrication of Dry Glove Box for Medicinal Chemistry Lab.	75,000/-
2015-16	Mrs. K. V. Marathe	Department of Chemical Engineering	Functionalization of polymer membrane for enhanced performance.	60,000/-
	Professor A. R. Juvekar	Department of Pharmaceutical Sciences and Technology	Neuroprotective effects of polyphenols against β -amyloid induced toxicity in PC12 cells	70,000/-

Young faculty are encouraged to apply for funding, create opportunities to improve their research profile and enter into collaborations both within the country as well as overseas, encourage industrial collaborations, make infrastructure available as per their needs

Grants are made available for travel to attend conferences and to get research funding and writing books for which younger faculty are given preference.

Faculty appointed under UGC-FRP and DST INSPIRE get seed money above Rs. 5.00 lakhs to get started.

Senior faculties often share their resources (financial, intellectual and material) to facilitate research for younger ones. They also suggest contacts and places where some analyses can be outsourced and help in networking to facilitate research.

There are few funding agencies which sponsor projects with respect to technology transfer to society such as BIRAC, RGSTC etc. ICT has received many projects under these schemes and also successfully transferred the technology through basic and applied research.

Provision for research facilities in terms of laboratory equipment, research journals, and research incentives are made available to the faculty

Equipments and instruments for research are available at the departmental level as well at the Institutional level. Inter-departmental facilities are also accessible. The list of equipments available at ICT is detailed in **Appendix 2 (Pg. No. 852)**

All faculty and students have access to search engine, SCOPUS as well as printed copies of many of the journals. The library is open throughout the year except on public holidays. Softwares for checking plagiarism are also available

There are many awards instituted by many bodies for proficiency in teaching and research and these are selected by the students themselves. This is listed in **Appendix 3 (Pg. No. 863)**

Besides, Indian Specialty Chemicals Manufacturing Association (ISCMA) has instituted a cash award of Rs. 25,000/- for 'Outstanding Professor' for maximum research output as seen from publications arising out of research. This has been in place since the last three years and the awardees have been Prof. B. M. Bhanage (2011), Prof. G. D. Yadav (2012) and Professor Rekha S. Singhal (2013). The Paper work for 2014 has been completed.

3.1.4 How is interdisciplinary research promoted?

The institution encourages and promotes a research culture (eg. teaching work load remission, opportunities for attending conferences etc.)

All faculty and research students (both at masters and doctoral level) are encouraged to attend and participate in conferences either through poster/paper/oral presentations and developing contacts with professionals in their area of interest. Funds for the same are also provided through Golden Jubilee travel grants, other endowments created in the Institute, and through TEQIP. International travel has also been supported in many deserving cases. This information is compiled for the last three years in **Appendix 4** (Pg. No. 866)

Teaching load for all faculty is as per AICTE norms (16, 14 and 12 h for Assistant Professor, Associate Professor and Professor, respectively). A 2h concession is given to Heads, Deans and other senior administrators (Controller of examination, Registrar, TEQIP Coordinator, Course Coordinators etc).

Flexibility to exchange lectures with colleagues in their absence is built in to the system so that the interest of the students is protected while the faculty can pursue research interests and attend other demanding commitments.

Faculty who did not have a Ph.D were encouraged to do Ph.D. Three faculty members took up the chance offered to them and some of them have even completed the Ph. D. In 2014-15. They have now started supervising Ph.D students.

New areas of research such as computational chemistry, nanotechnology, material science, process control among many others has been initiated by young faculty, and is bound to bring laurels in future. All facilities and provisions such as duty leave and training expenses were made available for the same.

All faculty members are encouraged to utilize their full potential as evident from their participation in:

- i) Industrial consultancy,
- ii) Handling masters and doctorate students,
- ii) Developing links with other academic institutions,

- iv) Applying for grants from funding agencies - both at national and international level,
- v) Encouraging participation in conferences and workshops, and
- vi) Training in areas as per their desire (research and/or pedagogy)
- vii) Encouraging collaborative work with other departments in the University

Undergraduates are exposed to summer research projects which is voluntary for students after Sem IV. Summer projects are conducted in national and even international laboratories. The students work under the supervision of a faculty and are paid a fellowship of Rs. 3000/-. This was facilitated through TEQIP and UGC-Networking Resource Centre. A list of recipients of this fellowship from TEQIP is given in **Appendix 5 (Pg. No. 871)**.

The undergraduates are also encouraged to participate in industry sponsored technical interactions and competitions where they are encouraged to find innovative solutions to industry defined problems, present posters and give oral presentations. Competitions are also organized to develop models of equipments, a process flow sheets etc.

At the masters level, electives are offered to each student as per his/her choice. A course on 'Critical review of research paper' has been introduced at Masters level to develop critical, logical and analytical thinking in the Sem I itself. Similarly, a course on 'Critical review of research project' is introduced in Sem II so that the student focuses on the available literature, gathers thoughts on the proposed research topic and starts planning for the same. This is evaluated by a group of faculty which enables positive suggestions for improvement of the proposed work. The research work is evaluated after Sem III which allows streamlining the projects, understanding the difficulties faced by a student and giving suggestions to overcome them, corrective measures towards their project, if required. The student submits a thesis after 1 year of laboratory work which is evaluated by an external examiner on the basis of following points:

- i) Understanding of research area
- ii) Problem formulation / experimental design / mathematical modeling
- iii) Quality of work done
- iv) Analysis and interpretation of results
- v) Quality of thesis submitted

- vi) Quality of presentation
- vii) Answers to questions raised during open defence

The thesis is then graded accordingly. Masters students and their supervisors are encouraged to write research papers based on their work in peer reviewed international journals. Younger faculty are counseled to take negative decisions constructively and improve their approach to their work.

To inculcate the culture of scientific writing, ICT publishes an e-journal, Bombay Technologist on the platform of Technological Association which is manned by senior faculty from the University

All doctorate students have to undertake 3 credit and 3 audit courses during their study, of which 'Research methodology' is mandatory. The students have freedom to choose these courses in consultation with the supervisor. These courses help the students to orient themselves to their research work and broaden the horizons of their thinking.

3.1.5 Give details of workshops/ training programmes/ sensitization programmes conducted by the university to promote a research culture on campus.

ICT has research as its integral part right from its inception and the activity continuous in full rigour in the Institute. The workshops are routinely conducted by every department through several endowment lectures in collaboration with industries, other government organizations etc. A detailed account is given in **Appendix 16 (Pg. No. 983)**

3.1.6 How does the university facilitate researchers of eminence to visit the campus as adjunct professors? What is the impact of such efforts on the research activities of the university?

ICT has always had a culture of promoting researchers of eminence to visit the campus and share their expertise and experience with colleagues and students. Many endowment chairs have been created to invite eminent person from academic and industry. All efforts are made to appoint distinguished scientists and faculty through industry endowments.

- The list of such endowments chairs is given below:

Sr.	Post	Designation	Name
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No.			
1.	Professor	R. T. Modi Professor Of Chemical Technology & Vice-Chancellor	Prof. G. D. Yadav
2.	Professor	U.G.C. Research Scientist 'C' (Professor grade Distinguished)	Prof. A. B. Pandit
3.	Professor	BPCL Professor Of Chemical Engineering	Prof. V. G. Gaikar
4.	Associate Professor	Sir Homi Mehta Associate Prof. In Tech. of High Polymers	Dr. V. V. Shertukade
5.	Associate Professor	Sir Dorabji Tata Associate Professor in Pharmaceutical Chemistry	Dr. (Smt.) M. S. Degani
6.	Associate Professor	RCF Associate Professor in Chemical Engineering	Dr. P. D. Vaidya
7.	Assistant Professor	Singhane Assistant Professor in Pharmacy	Prof. (Smt.) P. D. Amin
8.	Assistant Professor	Singhane Assistant Professor in Chemical Engineering	Dr. A. M. Lali
9.	Assistant Professor	Dr. R. A. Mashelkar Assistant Professor in Chemical Engineering	Dr. Vishwanth Dalvi
10.	Assistant Professor	J. G. Kane Assistant Professor In O.F.W.	Dr. Chandu S. Madankar

• **List of Endowment Positions created in ICT for visiting faculty**

ENDOWMENTS

1. GENERAL

1. Professor B.D. Tilak Distinguished Lectureship
2. Professor B.D. Tilak Visiting Fellowships.
3. Golden Jubilee Visiting Fellowships.

4. Dr. Balwant S. Joshi Distinguished Visiting Professorship in Chemical Engineering
Chemical Technology / Applied Chemistry “
5. Shri. B. S. Rajpurohit Visiting Faculty and Oration Endowment
6. Shri D. M. Trivedi Lecture in Green Chemistry and Technology Endowment
7. Annual Oration in the name of the Late Professor W. B. Achwal Endowment

2. Department of Chemical Engineering

8. Dr. G.P. Kane Visiting Professorship in Chemical Engineering.
9. The Dow Professor M.M. Sharma Distinguished Visiting Professorship in Chemical Engineering.
10. Shri V.V. Mariwala Visiting Professorship in Chemical Engineering
11. Shri G.M. (alias Dada) Abhyankar Memorial Distinguished Fellowship in Chemical Engineering
12. Professor R.A. Rajadhyaksha Memorial Lecture series.
13. Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship in Chemical Engineering
14. K. J. Somaiya Visiting Professor of Chemical Engineering Endowment
15. Professor Arun S. Mujumdar Visiting Fellowship

3. Department of Dyestuff Technology

16. K.H. Kabbur Memorial Silver Jubilee Lectureship.
17. Professor K. Venkatraman Lectureship.
18. Pidilite Industries Ltd. Visiting fellow in Dyestuff Science & Technology.
19. Dr. KKG Menon Memorial Lecture Endowment

4. Department of Fibres and Textile Processing Technology

20. Professor G.M. Nabar Endowment Lectureship.
21. L.N. Chemicals ICT Diamond Jubilee Visiting Fellow
22. Class of 1966 Visiting Fellowship.

5. Department of Food Engineering and Technology

23. Professor A. Sreenivasan Felicitation Lectureship.
24. Marico Industries Visiting Fellowship
25. ICT - Lupin Visiting Fellowship for Bioprocess Technology

6. Department of Oils, Oleochemicals and Surfactants Technology.

26. Professor J.G. Kane Visiting Professorship in Chemical Technology
27. Professor J.G. Kane Memorial Lectureship

7. Department of Pharmaceutical Sciences and Technology

28. CIPLA Distinguished Visiting Fellowship in Pharmaceutical Sciences
29. Themis Medicare - ICT Diamond Jubilee Distinguished Fellowship in Pharmaceutical Sciences
30. Professor (Mrs.) Malati R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology
31. AAIPS- Dr. R. S. Baichwal Pharmaceutical Seminar
32. Dr. S.K. Pradhan Endowment
33. Professor V.M. Kulkarni Endowment Fund in Pharmaceutical Science and Technology

8. Department of Polymer Engineering and Technology and Department of Surface Coating Technology

34. Shri K. S. S. Raghavan - Chemical Weekly Visiting Professorship in Polymer Science and Technology
35. Indian Plastics Institute (IPI)-ICT Diamond Jubilee Visiting Fellowship in Polymer Processing
36. Chemimpex Rastogi-ICT Diamond Jubilee Visiting Fellowship in Surface Coatings.
37. Synpol-ICT Diamond Jubilee Distinguished Visiting Fellow in Science & Technology of Pigment
38. Tipco-ICT Diamond Jubilee Distinguished Visiting Fellow in Thermosets
39. Jayvee Organics & Polymers(P)Ltd. Visiting Fellowship in Polymer Additives and Compounding
40. Parmanand F. Parikh Endowment
41. Shri B.S. Rajpurohit Visiting Professorship in Polymer Science and Technology Endowment

9. Department of Chemistry

42. Dai-Ichi Karkaria Ltd. Visiting Fellowship
43. The Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry
44. The (Late) Shri. G.D.Gokhale Endowment Lectureship
45. Spinco-Biotech - Ramanathan Lectureship

10. Department of Physics

46. Dr. Mooljibhai Shivabhai Patel Trust Visiting Fellowship in Polymer Physics
- Many faculty from Universities abroad conduct courses and are appointed as adjunct professors. A list is given below:

Sr. No.	Adjunct Professor
1	Prof. Asfiya Contractor
2.	Prof. P. K. Ghosh
3.	Prof. J. B. Joshi
4.	Dr. Kaustubh Joshi
5.	Prof. A. K. Kalkar
6.	Prof. S. V. Panse
7.	Prof. M. R. Sawant

Many distinguished and renowned academicians are invited to serve ICT as professors of eminence and visiting faculty. Some of them associated with ICT during the last four years are as follows:

- Dr. Pushpito Ghosh, Former Director, CSMCRI, Bhavnagar
- Dr. M. Laxmikantam, Former Director, CSIR-IICT, Hyderabad
- Prof. J. B. Joshi, Former Director, ICT
- Prof. M. M. Sharma, Former Director, ICT
- Prof. P. R. Kulkarni, Former Head, Food Engineering and Technology Department, ICT
- Prof. A. K. Kalkar, Former Head, Applied Physics Department, ICT
- Prof. D. D. Kale, Former Head, Department of Polymers and Surface Engineering
- Prof. M. A. Shenoy, Former Head, Department of Polymers and Surface Engineering
- Prof. K. Niranjana, University of Reading, UK
- Prof. V. V. Mahajani, Rajiv Gandhi Science and Technology mission, Govt of Maharashtra
- Prof. M. Sriram, Ex-General Manager, Hindustan Organic Chemicals
- Prof. O. P. Goyal, Hindustan Petroleum Corporation Ltd.
- Dr. S. M. Mokashi, Ex-Davy Power Gas

3.1.7 What percentage of the total budget is earmarked for research? Give details of heads of expenditure, financial allocation and actual utilization.

Institute of Chemical Technology is Government of Maharashtra State funded Deemed University. Institute Receives only Salary Grants from the State Government and the government does not provide any other type Block grant to the Institute. In view of above institute does not earmark any amount as a separate research fund in its annual budget. However, Institute is supported by Central Government Institutes such as UGC through its CAS programme, DST, CSRI, AICTE and individual faculty Government and Industrial projects for the research work. Presently there are about more 750 full time research students and about 5 full time Post doctoral fellows pursuing their research work with fellowships from the bodies mentioned above. The funds raised by these schemes are used for purchasing of research equipments, consumables, travel grant and other miscellaneous expenses required for the research work.

3.1.8 In its budget, does the university earmark funds for promoting research in its affiliated colleges? If yes, provide details.

Not Applicable to ICT

3.1.9 Does the university encourage research by awarding Post Doctoral Fellowships/Research Associateships? If yes, providedetails like number of students registered, funding by the university and other sources.

The University encourages research by awarding postdoctoral fellowship and research associateship by providing fellowships under various schemes of the UGC under CAS, DAE, DBT, AICTE, TEQIP and through Industrial collaborative projects.

There are about 5 Post Doctoral fellows and more than 750 Full time Research students pursuing their Ph. D and Post doctoral work.

3.1.10 What percentage of faculty have utilized the sabbatical leave for pursuit of higher research in premier institutions within the country and abroad? How does the university monitor the output of these scholars?

The institution has a good percentage of faculty who have utilized sabbatical leave for pursuit of higher research in premier institutions within the country and abroad.

All faculty are permitted to go on sabbatical as and when required within the framework of rules of the organization. A list of faculty who went on sabbatical and other relevant details are given in the following table.

Faculty on study/sabbatical leave from 2011 till date

Sr. No.	Name	Designation	Sabbatical Leave	Period	Where/Which Place
1.	Dr. Sadhana Sathaye	Asstt. Prof. Selection Grade under CAS	Sabbatical Leave	01/07/2011 to 16/04/2012	Offer letter from Dr. Kenneth Van Golen (Director, Cytoskeleton Physiology Laboratory) Dept. of Biological Science, University of Delaware, USA as a Visiting scientist.
2.	Dr. U. S. Annapure	Asso. Prof. in Food Chemistry	Study Leave	30/07/2010 to 07/02/2011	Washington State University Pullman, Washington, USA (Dept. of Biological system Engineering)
3.	Dr. P. R. Gogate	Asstt. Prof.	Study Leave	01/01/2010 to 12/05/2010	Visiting Associate Professor at the Chem. Engg. Dept. of the Purdue university USA for their spring semester of the academic year 2009-10.
4.	Dr. G. U. Chaturbhuj	Asstt. Prof.	Study Leave	01/09/2013 to 31/08/2014	Visiting scientist at the Dept. of Pharmaceutical science & centre for Drug discovery Northeastern University, Boston, USA.
5.	Dr. R. R. Deshmukh	Asso. Prof. under CAS	Study Leave	02/02/2009 to 12/03/2010	Visit the Dept. of Chemistry & Biochemistry, University of Texas, Arlington, USA
6.	Prof. B. N. Thorat	Prof. of Chem. Engg.	Sabbatical Leave Extension of Extraordinary Sabbatical Leave	01/07/2011 to 30/06/2012 01/07/2012 to 30/06/2013	To commercialize the Technology Developed at ICT under the project sponsored by Rajiv Gandhi Commission for Science & Technology Government of Maharashtra.
7.	Prof. A. B. Pandit	UGC Research Scientist 'C' (Prof. of Chem. Engg.)	Sabbatical Leave	29/01/2013 to 20/04/2013	To teach a course at university of California at Santa Barbara, USA.

8.	Dr. (Smt.) J. S. Waghmare	Asstt. Prof. in OFW	Study Leave	04/02/2010 to 04/02/2011	Post Doctoral fellow at Dept. of Chemistry, Purdue University School, Indianapolis, USA
9.	Dr. P. D. Vaidya	RCF Associate Professor in Chem. Engg.	Study Leave	December 2015 to June 2016	Visiting Lectureship at University of Liverpool, UK

3.1.11 Provide details of national and international conferences organized by the university highlighting the names of eminent scientists/scholars who participated in these events.

Please refer **Appendix 6 (Pg. No. 876)**

3.2 Resource Mobilization for Research

The University provides support in terms of financial, academic and human resources required and timely administrative decisions to enable faculty to submit project proposals and/ approach funding agencies for mobilizing resources for Research. The institutional support to its faculty for submitting Research projects and securing external funding through flexibility in administrative processes and infrastructure and academic support are crucial for any institution to excel in Research. The faculty are empowered to take up research activities utilizing the existing facilities. The institution encourages its staff to engage in interdisciplinary and interdepartmental research activities and resource sharing.

3.2.1 What are the financial provisions made in the university budget for supporting students' research projects?

Financial provisions are made in the institution's budget for supporting student's research projects

- All UG students have an experimental project in the final semester, for which the funds are spent from the Departmental grants.
- There are endowments created at ICT where students are given travel grants to present their work in conferences.
- In many cases, consumables of the post graduate and doctoral students are also used to support their professional interests.

- Prof. M. M. Sharma Endowment for doctoral fellowship has been created for supporting Ph.D students with substantially higher fellowships.
- Dr. R. Y. Mantri Distinguished Masters Fellowships in Perfumery and Flavour Technology has been created to support 5 M.Tech (Perfumery and Flavours) students **(Appendix 7) (Pg. No. 898)**
- Industries such as BPCL, Uniliver are supporting Ph. D. Students by the way of Senior Research Fellowships.

3.2.2 Has the university taken any special efforts to encourage its faculty to file for patents? If so, how many have been registered and accepted?

All faculty are encouraged to file patents. More than 189 patents have been filed in the last five years.

Patents

Year	Filed	Granted	Licensed
2014	69	10	0
2013	59	5	0
2012	33	10	2

3.2.3 Provide the following details of ongoing research projects of faculty:

Please Refer **(Appendix 8) (Pg. No. 900)**

3.2.4 Does the university have any projects sponsored by the industry/corporate houses? If yes, give details such as the name of the project, funding agency and grants received.

Yes, there are many projects sponsored by the industry. A detailed list of all such projects in all the departments of ICT can be seen in the annual reports available on the ICT website. **(Appendix 17) (Pg. No. 986)**

3.2.5 How many departments of the university have been recognized for their research activities by national / international agencies(UGC-SAP, CAS; Department with Potential for Excellence; DST-FIST; DBT, ICSSR, ICHR, ICPR, etc.) and what is the quantum of assistance received? Mention any two significant outcomes or breakthroughs achieved by this recognition.

The institution has recognized Research centres (National and international, eg. UGC, ICSSR, ICHR, ICPR, DST, DBT, UNESCO, UNICEF).

- Eight Departments are supported under UGC-SAP and DST-FIST.
- Virtual centres encompassing two or more departments have been created which facilitates sharing of infrastructure and which further accentuates the quality of research.
- We have two networking programs operating in the University with other academic organizations, one on the platform of UGC, and the other on the platform of TEQIP. Under the UGC Networking Centre, students from other institutes come and do their summer research projects under supervision of our faculty, and faculty from other institutes can enroll for Ph.D with our faculty as supervisors. Under the TEQIP Networking Centre, funds are provided to develop new innovative products based on expertise from multiple disciplines and which are in tune with 3 Es of the present times - economic, ecofriendly, and energy-efficient.
- The DBT-ICT Centre for Energy Biosciences has been created by DBT itself and is recognized internationally.
- The DAE-ICT Centre in Chemical Engineering Education and research is working in the ICT and supported by DAE (BARC).
- New centres of excellence are being proposed to be set up as soon as space is made available. This would attract not only talented students but talented faculty as well from all over the country. A list of proposed centres is attached herewith (**Appendix 9**) (**Pg. No. 929**)

The institution receives a significant quantum of research grants from external agencies for major and minor projects.

There are many projects from external agencies such as DST, DBT, DAE, BRNS, UGC, AICTE, RGSTC etc. A detailed list of all such projects in all the departments of ICT can be seen in the annual reports available on the ICT website.

3.2.6 List details of

- a. Research projects completed and grants received during the last four years (funded by National/International agencies).**
- b. Inter-institutional collaborative projects and grants received**
 - i) All India collaboration**
 - ii) International**

Refer to Appendix 8 as per point 3.2.3

3.3 Research Facilities

Required infrastructure in terms of space and equipment and support facilities are available on the campus for undertaking research. The institution collaborates with other agencies/ institutions/research bodies for sharing research facilities and undertaking collaborative research.

3.3.1 What efforts have been made by the university to improve its infrastructure requirements to facilitate research? What strategies have been evolved to meet the needs of researchers in emerging disciplines?

- ICT has almost all the state-of-art analysis facilities which are shared by all the departments. Many other academic organizations and industries also use the facilities as and when required. The research infrastructure available with ICT helps to get more research projects from industry. Please see **Appendix 2 (Pg. No. 852)** for the details of equipments and instruments available in different departments of ICT. The research environment itself attracts quality students to enroll for higher education in ICT.
- Overseas students come to ICT for training for various periods of time as directed by their parent organization as well as funding source.
- The space available for expansion is a constraint at the Institute level but maximum possible utilization is done. This is seen from **Appendix 10 (Pg. No. 931)** which shows the lab space and that available for classrooms and faculty rooms at ICT.

3.3.2 Does the university have an Information Resource Centre to cater to the needs of researchers? If yes, provide details of the facility.

University has specialised Information Processing Centre having modern computers and different licensed softwares with internet connectivity. Institute has subscribed to

hundreds of National and International Journals of repute for E-resources. Institute is also part of the INFLIBNET programme of the UGC. Institute is also subscribing annually for a number of journals in hard copies. With these resources students are able to utilise library and the internet facilities for carrying out the literature survey and analysis.

3.3.3 Does the university have a University Science Instrumentation Centre (USIC)? If yes, have the facilities been made available to research scholars? What is the funding allotted to USIC?

Institute has many departments where ultramodern instruments are being used to carry out the experiments and result analysis for their research work. The instruments/equipments of these departments are available to research scholars 24X7, for performing their research work. These facilities are created using the project funds of the individual faculty and through the grants of FIST and CAS programmes or through various industrial project and consultancy work. There are no separate funds allocated in the budget of the institute for USIC.

3.3.4 Does the university provide residential facilities (with computer and internet facilities) for research scholars, post-doctoral fellows, research associates, summer fellows of various academies and visiting scientists (national/international)?

Residential facilities (with computer and internet facilities) for research scholars, post-doctoral fellows, research fellows of various academies and visiting scientists (national/international) are available.

- Residential facilities for faculty are available. In addition, a new faculty tower is ready for occupation.
- Five hostels for research scholars and UG students are already available, two of which are for girls. Efforts are made to organize accommodation in nearby areas as paying guests or in other hostels.
- Guest houses are available on campus which is used by the visiting academics and scientists. Some cases the arrangements are done by the Institute elsewhere.

3.3.5 Does the university have a specialized research centre/workstation on-campus and off-campus to address the special challenges of research programmes?

ICT has a central computing facility (IPC) where students can work anytime during the working hours

3.3.6 Does the university have centres of national and international recognition/repute? Give a brief description of how these facilities are made use of by researchers from other laboratories.

The following centres exist at ICT:

- DBT-ICT centre for Energy Biosciences funded by Department of Biotechnology, Government of India.
- Centre for Green Technology, Bioprocess Technology, Technology for Perfumery and Flavours, as well as Centre for Nanotechnology are created in the ICT campus, the first three being virtual and the last being physically present.
- Centre of Excellence in process Intensification for process Industries (CoE-PI) (TEQIP Phase II).
- ICT-DAE Centre for Chemical Engineering Education and Research
- UGC Networking Resource Centre in Chemical Engineering (UGC-NRC-CE)
- Innovation Networking of TEQIP Institutes in Maharashtra

All these centres are working with a very decent and enviable output.

3.4 Research Publications and Awards

Exploration and reflection are crucial for any teacher to be effective in his/her job. Quality research outcome is beneficial for the discipline/ society/ industry/ region and the nation. Sharing of knowledge especially theoretical and practical findings of research, through various media enhances quality of teaching and learning.

3.4.1 Does the university publish any research journal(s)? If yes, indicate the composition of the editorial board, editorial policies and state whether it/they is/are listed in any international database.

Institute publishes a yearly journal naming Bombay Technologist wherein UG and PG students are encouraged to write the journal papers about their experimental and research work carried out by them. A majority of the papers published in this journal depicts research work of UG students of the Institute. The Editorial board of this journal consist of faculty and students from UG as well as PG courses. For publishing papers in the journal, students are encouraged to send their research papers which are then thoughtrly reviewed and scrutinized by senior faculty of the Institute and only upon final corrections they are accepted for publication. This journal is not listed in any international database.

3.4.2 Give details of publications by the faculty: (2011-15)

- **Number of papers published in peer reviewed journals (national / international) - 2806**
- **Monographs - 6**
- **Chapters in Books - 29**
- **Books edited - 25**
- **Books with ISBN with details of publishers - 8**
- **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, EBSCO host, etc.) - 2037**
- **Citation Index – 26,498**
- **SNIP – Appendix 11 (Pg. No. 944)**
- **SJR - Appendix 11 (Pg. No. 944)**
- **Impact Factor – range / average – Appendix 11 (Pg. No. 944)**
- **H-index - 63**

3.4.3 Give details of

- **Faculty serving on the editorial boards of national and international journals**

Prof. G. D. Yadav	Member, Editorial Board, Green Chemistry (RSC, UK), Member, Editorial Board, ACS Journal of Sustainable Chemistry and Engineering, USA, Member, Editorial Board, Advanced Porous Materials, Member, Editorial Board, The Scientific World Journal, Bentham Science Publishers, Member, Editorial Board, Current Catalysis, Bentham Science
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	Publishers, Member, Editorial Board, Clean Technologies and Environmental Policy, Springer, USA, Indian Chemical Engineer, JMC
Prof. A. B. Pandit	Ultrasonics sonochemistry, Biochemical Engineering Journal, Elsevier, UK. Canadian Journal of Chemical Engineering, Chemical Engineering & Processing, Industrial Engineering and Chemistry, Journal of Science Assam, Journal of Mustard Research Promotion Council
Dr. P. R. Gogate	Member, Editorial Board, Advances in Environmental Research, Ultrasonics sonochemistry
Prof. R. V. Adivarekar	Editor of Journal of Textile Association, International dyer
Dr. Anant Kapadi	RSC Advances
Prof. S. S. Bhagwat	Editorial Board Journal of Surface Science and Technology, Editorial & Advisory Board Industrial Engineering & Research Chemistry, American Chemical Society
Prof. J. B. Joshi	Reviews in Chemical Engineering
Prof. V. G. Gaikar	Indian Journal of Chemical Technology (IJCT), Journal of Biomedical Research
A. M. Lali	Preparative Biochemistry and Biotechnology
Dr. R. D. Jain	Ultrasonics Sonochemistry – Elsevier, European Journal of Pharmaceutics and Biopharmaceutics – Elsevier
Prof. M. D. Teli	Chairman, Editorial Board, Journal of the Textile Association
Prof. Rekha Singhal	Member, Editorial Board, International Journal of Food Science and Nutrition, Member, Editorial Board, Plant Foods for Human Nutrition.
Prof. A. R. Juvekar	Member, Editorial Board, Indian Practitioner Pharmacist
Prof. P. R. Vavia	Member, Editorial board, Indian Journal of Pharmaceutical Sciences
Prof. B. M. Bhanage	Member, Editorial Advisory Board - The Open Acoustics Journal, The Open Catalysis Journal, Catalysis Science and Technology, RSC Journal
Prof. B. N. Thorat	Editorial Advisory Board, Drying Technology, Taylor & Francis, USA

- Faculty serving as members of steering committees of international conferences recognized by reputed organizations / Societies (2011-15)

Prof. B. N. Thorat	Advisory Committee Member, Asia Pacific Drying Conference Advisory Committee Member, Nordic Drying Conference Advisory Board, International Drying Conference, 2014, Lyon, France
Prof. V. B. Patravale	Member, Controlled Release Society Inc., USA Member, Controlled Release Society, Indian Local Chapter
Dr. U. S. Annapure	Member, International Society of Food Engineering (ISFE), USA.
Dr. Shalini Arya	Member, Society of Chemical Industry (SCI), London. Member, International Society of Food Engineering (ISFE), Pullman, USA.

3.4.4 Provide details of

- * **Research awards received by the faculty and students** - Please see [Appendix 12](#) (Pg. No. 953)
- * **National and international recognition received by the faculty from reputed professional bodies and agencies** - Please see [Appendix 13](#) (Pg. No. 963)

3.4.5 Indicate the average number of successful M.Phil. and Ph.D. scholars guided per faculty during the last four years. Does the university participate in Shodhganga by depositing the Ph.D. theses with INFLIBNET for electronic dissemination through open access?

The output of ICT in terms of Ph.D students is significant

- Our output of Ph.D is significant. The exact numbers for the last four years is as follows:
2013-14: 93
2012-13: 103
2011-12: 97
2010-11: 68

All these are deposited in electronic forms with INFLIBNET

- We do not offer M.Phil program. However, we conduct M.Tech, M. Pharm and M.Chem. Engg programs with 50% research component.

3.4.6 What is the official policy of the university to check malpractices and plagiarism in research? Mention the number of plagiarism cases reported and action taken.

The institution has an official Code of Ethics to check malpractices and plagiarism in research.

URKUND, an anti-plagiarism software service has been made available to ICT, Mumbai through the UGC-INFLIBNET.

All faculty are encouraged to check the thesis and research papers submitted by the students to check it through the software. No case of plagiarism has been reported after incorporation of these practices.

3.4.7 Does the university promote interdisciplinary research? If yes, how many interdepartmental / interdisciplinary research projects have been undertaken and mention the number of departments involved in such endeavours?

These are projects by faculty from different departments within the Institute, as well as with colleagues from Institutes all over India as well as overseas. This is evident from the information as co-guides and co-authors of publications of the Ph. D. Students. This has also resulted in many joint publications and patents which can be seen in annual reports of the Institute that are available on the Institute's website.

3.4.8 Has the university instituted any research awards? If yes, list the awards.

The institution has instituted research awards

- Indian Specialty Chemicals Manufacturing Association (ISCMA) has instituted a cash award of Rs. 25,000/- for 'Outstanding Professor' for maximum research output as seen from publications arising out of research. This has been in place since the last three years and the awardees have been Prof. B. M. Bhanage (2011), Prof. G. D. Yadav (2012) and Professor Rekha S. Singhal (2013). Paper work for 2014 has been completed.
- Under the UGC-BSR scheme, teachers who have successfully supervised 15 or more Ph.D. students are entitled to a research grant of Rs 7.00 lakhs from the UGC members. 14 Faculty have already been recognized through this route.

3.4.9 What are the incentives given to the faculty for receiving state, national and international recognition for research contributions?

UDCT Alumni Association (UAA) has instituted distinguished alumnus awards to recognize and celebrate the contributions and achievements of faculty and alumni.

3.5 Consultancy

Activity organized or managed by the Faculty for an external agency for which the expertise and the specific knowledge base of the faculty becomes the major input. The finances generated through consultancy are fairly utilized by the institution. The faculty taking up the consultancy is properly rewarded.

3.5.1 What is the official policy of the University for Structured Consultancy? List a few important consultancies undertaken by the university during the last four years.

The institution has an official policy for structured consultancy.

Four types of consultancies are undertaken at the Institute:

- i) Only advisory consultancy where no manpower or resources of the Institute are used. The only inputs are intellectual.
 - ii) One time advice where the conditions are similar as above
 - iii) Sponsored projects which involve the use of manpower and resources of the Institute.
 - iv) Project-cum-consultancy where there is a combination of components of i) and iii).
- The revenue generated is shared $1/3^{\text{rd}}$ between the Institute and $2/3^{\text{rd}}$ by the faculty concerned with respect to i), iii) and iv).
 - In case of ii) as above, the faculty is allowed to retain the complete revenue up to Rs. 1.00 lakh in one financial year, beyond which $1/3^{\text{rd}}$ is shared with the Institute.
 - In case of sponsored projects, the minimum period is of six months, the minimum project cost is Rs. 1.50 lakh and the manpower cost at the minimum is equivalent to the fellowship received by the M.Tech students.

3.5.2 Does the university have a university-industry cell? If yes, what is its scope and range of activities?

There is no separate university industry cell in the institute but, the Dean of RCRM (Research Consultancy and Resource Mobilisation) is entrusted with the authority to contact/mediate with various industries and research organisations for instituting contacts with industries for carrying out the consultancy work and generating resources with project works of the industry.

3.5.3 What is the mode of publicizing the expertise of the university for consultancy services? Which are the departments from whom consultancy has been sought?

The institution publicizes the expertise available for consultancy services in the Annual Reports and prospectus and through several conferences and workshops showcasing the capability of individual faculty member.

- Details of all faculty, their expertise and current consultancies, the projects under supervision as well other relevant details are published in the annual reports which are circulated to industries and also uploaded on the website. Industries approach the faculty directly or through the officials in the VC's office for appointing faculty as consultants.
- As long as the terms and conditions of consultancy are in line with the Institute's policy, all faculty are permitted to take consultancy without compromising on their academic work.

3.5.4 How does the university utilize the expertise of its faculty with regard to consultancy services?

The institution renders consultancy services to the industry. A list of the relevant details is given in annual reports on ICT website.

The Institute also renders consultancy services to Government/Non-Government organizations/community/public as expert members on government panels and through site visits where calls on funding the projects are taken. Individual details can be seen in the annual reports that are available on the Institute website

3.5.5 List the broad areas of consultancy services provided by the university and the revenue generated during the last four years.

Area of Consultancy :

- Surfactant Manufacturing and application
- Hair Care formulations
- Leather Chemicals
- Hand Dish wash and Toothpaste formulations
- Milk additive formulations
- Process and Product development
- Enzymatic and Microbial Biotransformationa and Biobase chemicals

- Lignocellulosic ethanol
- Enzymatic Production of Ascorbyl palmitate
- Purification of Antibiotics
- Biotransformation and purification of Fatty Acids
- Soy Protein pilot plant
- Fat Powder
- Microbial Fermentation
- Product Evaluation for Food Safety
- Low glycemic index atta formulation
- Pharmaceutical and Drug Delivery Systems
- Process Development and Process Intensification
- Organic Synthesis
- Excipients
- Nutraceuticals
- Solubilization of Drugs
- IUID
- Pharmaceuticals and Cosmetics
- Impurity Profiling
- Demethylation of opioid drug intermediate
- Benzothiazole Dye synthesis
- Adsorptive and Chromatographic Separations
- Natural Products Purification and Qualification

Consultancy Generated for last Three Years :

Year	Revenue generated in ruppees
2014-15	28259670
2013-14	34022310
2012-13	10976686

Resources (financial and material) are generated through consultancy services of the institution.

Financial resources are generated through consultancy, since 1/3rd directly goes to the Institute.

Materials are generated mainly through projects and project-cum-consultancy

Mutual benefits accrued due to consultancy.

Faculty gets an understanding of the industry requirements and an opportunity to solve real life problems. Financial gain is another added advantage.

Industry gets expert advice in the shortest possible time which saves their resources (time, energy, money)

3.6 Extension Activities and Institutional Social Responsibility (ISR)

Learning activities have a visible element for developing sensitivities towards community issues, gender disparities, social inequity etc. and in inculcating values and commitment to society. Mutual benefits arise from affiliation and interaction with groups or individuals who have an interest in the activities of the institution and the ability to influence the actions, decisions, policies, practices or goals of the organization. Processes and strategies that relevantly sensitize students to the social issues and contexts are also embedded in the core courses.

Sustainable practices of the institution leading to superior performance resulting in successful outcome in terms of generating knowledge is useful for the learner as well as the community.

Extension also is the aspect of education, which emphasizes community services. These are often integrated with curricula as extended opportunities, intended to help, serve, reflect and learn. The curriculum-extension interface has an educational value, especially in rural India.

3.6.1 How does the university sensitize its faculty and students on its Institutional Social Responsibilities? List the social outreach programmes which have created an impact on students' campus experience during the last four years.

Institute of Chemical Technology has always shown interest in organizing activities which aim at serving the community. These activities help in sensitizing the faculty and students to be a part of the Institute's social responsibility programs. The Institute organizes following programs in this regard:

- Independence Day, Republic day and Constitutional Day celebration.

- Mahatma Gandhi Jayanti, Dr. Babasaheb Ambedekar Jayanti, Chatrapati Shivaji Maharaj Jayanti celebrations etc
- Engineers Day, Science Day, Technology Day
- Youth Day, Womens Day
- Culture programs like Funtech, Manzar, Hostel Day etc
- Various technical events like Vortex, Rangostav, Texpression etc



Independence Day Celebration



Women's Day Celebration

3.6.2 How does the university promote university-neighbourhood network and student engagement, contributing to the holistic development of students and sustained community development?

The Institute regularly organizes several activities aimed at sustained community development. With active participation from the faculty, students and the neighborhood community, the following events were organized.

- Awareness Drives (like Ozone Day, National Unity Day, Constitution Day etc)
- Tree Plantation drive
- Blood donation camps with Rotary club of locality
- Cleanliness Drives (Swachh Bharat Abhiyaan)
- Joy of Giving (Donation of Old books, cloths, toys etc to poor children)
- Organizing interactive sessions of eminent social personalities.
- Scholarships for economically backward students

- Teaching street kids in the locality
- Bringing school childrens to the Institute to generate interest in the science.



National Unity Day



Constitution Day



Joy of Giving

3.6.3 How does the university promote the participation of the students and faculty in extension activities including participation in NSS, NCC, YRC and other National/ International programmes?

Institute ensures hurdle free participation of students & faculty by allowing a concession in academic attendance, zero participation fees, extending upto date facilities during such events. Also, incentives in terms of cash awards, certificates of appreciation etc, are given to students during such events.

3.6.4 Give details of social surveys, research or extension work, if any, undertaken by the university to ensure social justice and empower the underprivileged and the most vulnerable sections of society?

Most of the research carried out in institute is focused on the underprivileged and rural section of the society. The notable researches are:

- Design of energy efficient & smokeless stove

- Design of solar dryer for agriculture product
- Novel design of hand pump for ground water disinfection
- Removal of arsenic from ground water.
- Production of value added chemicals from agricultural waste

Students of the institute conduct regular visits to Orphanages, slums, villages, etc to donate clothes, food and other essential commodities (Joy of Giving).



Smokeless stove Designed in ICT

3.6.5 Does the university have a mechanism to track the student's involvement in various social movements / activities which promote citizenship roles?

Yes. Institute has a Public Relations Office (PRO) which keeps track of all such activities. Also, various forum/platform have been built up to initiate, encourage, ensure and track the participation of students in social movements/ activities. These forums are:

- Sparks: The Literary Club of ICT, encourages the students of the institute to take up literary activities which can enhance their skill set as well as enable them to make the process of writing, reading and interacting a fun activity
- Manthan: Manthan is engaged in promoting regional language, its culture and

tradition in the Institute by organizing K- Kavitecha (Kavi sammelan), Great Bhet (Interactive sessions of writer/poets/artists etc).

- Awaaz: An initiative taken by ICT students under its annual cultural festival Manzar, conducts the following activities throughout the year
 - Blood Donation Drive
 - Flag Drive
 - AASHANSH-a teaching session for underprivileged kids
 - Beach Cleanup Drive
 - AIDS awareness Street Play
 - Joy of Giving

Students are given special incentives for participating in social activities in the form of cash prizes



AIDS Awareness by Street Play



AASHANSH



Beach Cleanup Drive

3.6.6 Bearing in mind the objectives and expected outcomes of the extension activities organized by the university, how did they complement students' academic learning experience? Specify the values inculcated and skills learnt.

- The activities helps in motivating the students to contribute to our society in the present as well as in the future.
- It also helps them in identifying the underlying problems in the community and trying to provide a solution using the knowledge gained as a part of their curriculum.
- Students work in groups which help in improving their team spirit and leadership skills. They learn how to deal with pressure, work with deadlines and achieve a goal.
- These activities imbibe a sense of achievement in the students which further motivates them to be a part of such events in the future.

3.6.7 How does the university ensure the involvement of the community in its outreach activities and contribute to community development? Give details of the initiatives of the university which have encouraged community participation in its activities.

- Institute with the help of different NGO's (Like CRY), invites the underprivileged children to attend various cultural programs.
- The Institute organizes skill development programs for children and women from neighbouring villages.
- The Institute organizes many activities, especially for the families and friends of the faculty, staff and students.
- Institute constantly encourages active participation of the rural population in the implementation of its research projects. This ensures that our efforts are directed to find solutions to the real life problems in rural India.



Installation of Hand pump designed by ICT, at Aatpadi Village,
Dist. Sangali, Maharashtra.

3.6.8 Give details of awards received by the institution for extension activities and/contributions to social/community development during the last four years.

- Institute has won Bill and Melinda Gates Foundation Grant 2013 for solar grain dryer.
- A group from ICT having Dr. Parag Nemade, Dr. Vishwanth Dalvi, Dr. Siddharth Kasturirangan, Dr. Sachin Mathpati, Dr. Neetu Jha and Dr. Ashish Mishra have been awarded a grant of US \$ 1,00,000/- under “Re-invent the Toilet Challenge” of DBT and Bill and Melinda Gates Foundation.
- Institute has won Wipro Earthian award for two consecutive years 2012 and 2013.
- A team from ICT has won GE-Edison challenge organised by General Electricals, Bangalore.

3.7 Collaborations

There are formal agreement/ understanding between the institution and other HEIs or agencies for training/student exchange/faculty exchange/ research/resource sharing etc.

3.7.1 How has the university's collaboration with other agencies impacted the visibility, identity and diversity of activities on campus? To what extent has the university benefitted academically and financially because of collaborations?

There are formal agreement/ understanding between the institution and other HEIs or agencies for training/student exchange/faculty exchange/ research/resource sharing etc. The institution has linkages for various activities such as faculty exchange, student placement etc.

- Faculty in collaboration with industry formulates real life industry problems and innovative solutions are sought from students on the platform of IDP and Vortex, co-curricular programs organized at ICT.
- There are many projects in partnerships with national/international universities through summer projects, student exchange as well as faculty exchange.
- Overseas students come to ICT for training for various periods of time as directed by their parent organization as well as funding source.
- A training and placement cell has been in place which looks after the placement of all students. This is in addition to informal efforts of all faculty for purposes of placements.

The linkages established by the institution have enhanced its academic profile.

- There are 22 industry sponsored faculty positions at ICT which facilitate working on real life problems faced by the industry and also create manpower who can tackle such problems in the long run. This also finds a place in curriculum development which is upgraded every five years. This list is documented in **Appendix 14 (Pg. No. 975)**. This is an example where industry linkages have created faculty positions and which have not only helped the industry but also enhanced the academic profile of ICT.

- Senior faculty from ICT such as Vice Chancellor, Deans, Heads of the Departments as well as all other faculty at various levels visit many universities and industries, both within the country as well as overseas for invited lectures or as experts for various activities, and develop collaborations in academic programs as well as research.
- The linkages have enhanced the academic profile as can be seen from the joint publications and patents between students and faculty of the collaborating organizations. These publications are all listed in annual reports that are available on the University website (<http://www.ictmumbai.edu.in/DisplayPage.aspx?page=eg>).
- An MOU for dual degree program with Michigan State University has been signed wherein an opportunity to get degrees from two institutes and receiving guidance from two supervisors, one in each university.

3.7.2 Mention specific examples of how these linkages promote

Specific examples of linkages to promote curriculum development, internship, on-the-job training, faculty exchange and development, research etc.

- Three of our faculty did their Ph.D on the job and for which all support was provided.
- All undergraduate students have a six-week internship in an industrial house for which efforts are made by Heads of the Department and/or faculty to whom it is delegated. The information is compiled in annual reports which are available on the website. The IPT is accorded 2 credits at the UG level. Every student gets an assured industrial training.
- Many masters students also do internship although it is voluntary and is on the discretion of his/her supervisor.
- Curriculum development is done through several meetings comprising of all stakeholders viz. alumni, industry personnel, senior faculty.
- We have faculty from overseas conducting lectures in person as well as through skype.

3.7.3 Has the university signed any MoUs with institutions of national/international importance/other universities/ industries/corporate houses etc.? If yes, how have they enhanced the research and development activities of the university?

The institution has MOUs with institutions of national/ international importance/ other universities/ industries/ corporate houses etc.

- A large number of Memoranda of Understanding (MOU) have been signed for academic and research collaboration with foreign and Indian universities, Indian and foreign industries. Purdue University, University of Illinois, Urbana Champaign, University of Saskatchewan, University of British Columbia, University of Waterloo, University of Alberta, Western University, Canada, RMIT, Australia, Bradford University, UK, GEMS, France, are a few foreign universities. The CSIR laboratories- Central Drug Research Institute (CDRI), Indian Institute of Petroleum (IIP) Dehradun, Indian Institute of Chemical Technology (IICT), Hyderabad, National Environmental Engineering Research Institute (NEERI), Nagpur, National Chemical Laboratory (NCL), Pune, Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar, IIT-Bombay, Department of Atomic Energy's Homi Bhabha National Institute (HBNI), Mumbai, Shivaji University, Kolhapur and College of Engineering Pune (COEP) are some of them.
- ICT has taken up many research projects from industries based on industrial needs and mission projects of state and central government and projects of international importance in energy engineering, water, health care and other industrial processes. ICT has played a very important role in nation building from its inception.
- ICT is closely associated with UGC, DST, DAE, CSIR, DBT agencies and also with large number of NGO who are developing and implementing solutions for social problems.
- MOUs have resulted from personal and professional interactions, word-of-mouth recommendation and many have come to ICT requesting for collaborations and for which MOU is mandatory. A list of MOUs established till date is given in **Appendix 15 (Pg. No. 976)**.

3.7.4 Have the university-industry interactions resulted in the establishment / creation of highly specialized laboratories / facilities?

Institute-industry interactions have resulted in the establishment/ creation of highly specialized laboratories/ facilities. The infrastructure development at ICT is predominantly because of its symbiotic relationship with industry.

There are more than 500 first generation entrepreneurs which have come up from alumni and from the portals of ICT.

Sr. No.	Name of the Person	Company
1	Mr. J. P. Agarwal	Ishita Drugs & Industries Ltd.
2	Mr. M. G. Alexandar	New India Chemical Enterprises
3	Dr A. B. Amin	Aromax Chemicals
4	Dr. R. Y. Angle	Priya Chemicals
5	Dr. R. A Bakshi	Consultant
6	Dr. A. G. Belekar	Esbe chem products
7	Mr. C. G. Bengani	STP limited
8	Mr. Pradip bhat	Jairaj Phospate
9	Mr. N. V. Bhagwat	Quality Industries
10	Mr. G. L. Bhatia	Alliance Engineering Company
11	Mr. G. S. Bhargava	Kohinoor Paper Product
12	Dr. H. V. Borgaonkar	Borg Cheminova Pvt.ltd.
13	Dr. B. H. Chalishazar	Dr. B. H. Chalishazar & Associates
14	Mr. Dinesh Dalal	Corona Chemicals Co.
15	Mr. M. D. Darji	Borg Cheminova Pvt.ltd.
16	Mr. A. J. Desai	Anupam Rasan
17	Mr. U. M. Dewal	Ashu organics (I) Pvt. Ltd.
18	Mr. P. P. Dey	Solar Dye Chem Pvt. Ltd.
19	Mr. N. V. Dhekne	Hercules Speciality Chemicals India Pvt. Ltd.
20	Mr. M. R. Doshi	Progress in paper Recycling
21	Mr. K. R. Ganatra	Palchem Associates
22	Mr. L. N. Gandhi	Modhera Chemicals P. Ltd.
23	Mr. K. H. Gharda	Gharda Chemicals Ltd.
24	Mr. Vineet Gupta	Azide & Allied Chemicals
25	Mr. N. K. Gurka	Thermopads Pvt. Ltd.
26	Mr. H. V. Gogri	Alchemie Laboratories
27	Mr. R. V. Gogri	Arti Organics Ltd.
28	Dr. K. Gokul Chandra	ABR organics Limited
29	Mr. A. C. Gosavi	Kleenair Systems
30	Dr. A. B. Gupta	Armour Group
31	Mr. Saiprasad Jadhav	Avinash Chemicals
32	Mr. M. K. Jadliwala	Panchmahal Dyestuff Industries
33	Mr. G. D. Jasuja	Indian Industrial & management Services
34	Mr. H. M. Jatia	Indian Metal Powder Industries
35	Mr. K. P. Jhamvar	Subhash Chemical Industries
36	Mr. Y. H. Jhaveri	Vasu Chemicals
37	Mr. S. I. Joshipura	Vivid Colors Ind. Pvt. Ltd.

38	Dr. D. H. Kapadia	D. H. Organics
39	Mr. R. M. Kedia	Kedia Chemicals Ind. Pvt. Ltd.
40	Mr. P. H. Khatiwala	Arlabs Limited
41	Mr. Y. M. Kothari	Alkyl Amine Chemicals Ltd.
42	Mr. N. D. Kulkarni	Ameya Engineers
43	Mr. Vinay Kumar	Micro planet ltd.
44	Mr. S. M. Lagu	Fibro chem
45	Mr. K. G. Iaijawala	Canning Mitra Phonix Ltd.
46	Mr. S. M. Mahadik	Chembond Chemicals Ltd.
47	Mr. A. H. Mahajan	Retrot Chemicals
48	Mr. V. S. Mehata	Krishna Dyestuff Industries
49	Mr. S. B. Mody	J. B. Chemicals & Pharamaceuticals
50	Dr. L. G. K. Murthy	Nuclear Power Corporation
51	Mr. K. Narayanswami	Krishna Consultancy Servises
52	Mr. S. S. Nayak	Nimisha marketing Agencies
53	Mr. Vilas Nikam	Torna Engineering
54	Mr. J. J. Oswal	Kankoo Paints & Varnish Co.
55	Dr. V. S. Palkar	Nivedita Chemicals Pvt. Ltd.
56	Mr. C. M. Patankar	Retrot Chemicals
57	Mr. M. S. Patankar	Yash consultants
58	Dr. Bakul Patel	Saptrang Industries
59	Mr. S. B. Patel	Dutron Plastics Pvt. Ltd
60	Mr. J. S. Patel	Shankar Chemical Works
61	Mr. P. H. Patil	Crystal Solvents P. Ltd.
62	Mr. P. H. Patil	Link Pharma Chem. Ltd.
63	Mr. Sudhir Patil	Galaxy organics (P) Ltd.
64	Mr. M. B. Parekh	Pidilite Industries Ltd.
65	Mr. K. K. Parikh	Synthetic Drugs & Intermediates
66	Mr. S. M. Parikh	Macro Polymers Pvt. Ltd.
67	Mr. V. P. Pednekar	Nikita Tranphase Adducts Pvt. Ltd.
68	Mr. U. Purohit	Triume Chemicals
69	Dr. V. Purnaprajna	Shri Chem research laboratories pvt. Ltd.
70	Mr. Lalit Raghani	Nishita Techno
71	Mr. S. N. Rao	Supreem pharmaceuticals
72	Mr. Sanjeev Rane	Ayro oil Industry
73	Dr. K. Anji Reddy	Dr. Reddy's laboratories
74	Mr. K. P. Sankhe	Edeq Corporation
75	Mr. P. R. Sanghavi	Rahul Photograph Co. Pvt. Ltd.
76	Mr. M. H. Savla	Valient Chemical Corporation
77	Mr. P. A. Sevekari	Elite management Consultants
78	Mr. A. K. Shah	Vikash Color Agencies (P) Ltd.
79	Mr. S. D. Shah	Aroma Chemicals

80	Mr. P. P. Shah	Beeta paints Industries
81	Mr. J. C. Shah	Shri Rajpipala Amar Carbon & Chemical Ind.
82	Mr. V. D. Shah	Chembond Chemicals Ltd.
83	Mr. R. N. Shah	Metpro Chemicals
84	Mr. K. B. Shamain	R. K. S. Consultancy Services
85	Mr. U. Shekhar	Galaxy organics (P) Ltd.
86	Dr. G. R. Shenoy	Shaper Chemicals Ltd.
87	Mr. Shirsaokar	Brasica Pharma
88	Mr. M. S. Shroff	Nava Plast Ind. Pvt. Ltd.
89	Mr. N. S. Sule	Ameya Engineers
90	Mr. Dhanubhai Upadhyay	J. P. Brothers
91	Mr. M. H. Vekaria	Shri Colosperese Pvt. Ltd.
92	Me. M. D. Vakil	Belami Fine Chemicals P. Ltd.
93	Mr. J. S. Vasani	Bentec Organoclays P. Ltd
94	Mr. Nandkumar Venkatraman	Transtech services
95	Mr. N. G. Walame	Consafe Science (India) Pvt. Ltd

Funds created through support of sponsored projects have created facilities, for example, spare parts of many instruments and equipments, in many laboratories in the Institute. DAE-ICT and DBT-ICT Centres are highly supported by the industry.

Besides, the facilities available in the industry houses are available to the research students for conducting their projects.

Many manufacturers of specialized equipments have installed their equipments in the ICT premises and also hold many workshops and seminars.

The impact of institutional collaborations are formally reviewed.

The reviews do happen but between the faculty and the industry involved. The VC's office is not directly involved in the review of industrial collaborations unless it interferes with the academic duties of the faculty concerned.

Academic collaborations are reviewed frequently between the collaborators where ICT facilitates the process by giving administrative and academic support.

CRITERION IV: INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 How does the university plan and ensure adequate availability of physical infrastructure and ensure its optimal utilization?

The University has the state-of-the-art facilities which include living space, activity centers, hostels, playgrounds and amenities on the campus. The infrastructure requirements are fulfilled by a Building & Works Committee. The members of the committee consider and recommend the requirements raised by various department heads and faculties to the Board of Management for action and approval. The Dean (Infrastructure) ensures that the existing physical infrastructure is used optimally.

4.1.2 Does the university have a policy for the creation and enhancement of infrastructure in order to promote a good teaching-learning environment? If yes, mention a few recent initiatives.

Yes. The enhancement of infrastructure in order to promote a good teaching-learning environment on the campus is one of major prime objectives of the University development policy. The major objective of the University is to promote a learning environment which aids in the development of creativity, innovativeness and capabilities for a self-directed lifelong learning in students with a strong flavor for a constructivist learning, rather than making it a teacher-dominated declarative learning. Students are the active agents in the construction of their own knowledge, rather than being passive recipients of that knowledge from teachers. To make a structure compatible with teachers who embody the best teaching capabilities and perspectives has been our major task right since the beginning of the Institute. The three elements which make this possibly are physical infrastructure, technological infrastructure, and organisational infrastructure it has always been our major emphasis to make ICT a vibrant place for learning. The physical infrastructure includes well equipped state-of-art classrooms designed for regular chalk & talk/multimedia teaching with ergonomic in aspects of seating and acoustics. To ensure teaching-learning and research environment ICT houses one of the best laboratories with latest equipments, library and Information Processing Centre (IPC) which provide the latest books and journals, e-

learning resources. In addition to these, ICT also has a well-furnished state-of-the-art 150 seater central air conditioned auditorium for conducting lectures and symposia.

The recent initiatives include:

- New Student Facility Centre includes “Pidilite Pavilion” to house activities like Tech festivals, convocations, cultural activities, etc.
- A sports complex with tennis court, basketball court, and renovated football ground.

4.1.3 How does the university create a conducive physical ambience for the faculty in terms of adequate research laboratories, computing facilities and allied services?

- The university provides a high end e-resource facility through the Information Processing Centre for research across all disciplines of study. The university has a Computer Centre with 200 high end computers and 3 Servers. The entire campus is Wi-Fi enabled.
- All Faculty members are provided space to accommodate project staff and equipment for carrying our research activities. We are in the increasing the laboratory space substantially in the near future.
- The university procures instruments and equipment for research laboratories through various research funds and grants available from other external funding bodies like DST, UGC, DBT, IGCAR, DAE, DRDO, TEQIP etc. to cater the research needs of the students and faculty members.
- The university also encourages the faculty members to apply for external grants, major and minor research projects from the various different funding agencies mentioned above.
- In addition to the library the university also provides a reading room facility for students.

4.1.4 Has the university provided all departments with facilities like office room, common room and separate rest rooms for women students and staff?

Yes. The above mentioned facilities are available. All faculties are provided with office

room space. The support staffs are also provided separate private space for changing clothes. Separate rest rooms for women students and staff are available all throughout the campus.

4.1.5 How does the university ensure that the infrastructure facilities are disabled-friendly?

ICT has installed lift and user friendly ramps and toilets for the benefit of persons with special needs.

4.1.6 How does the university cater to the requirements of residential students? Give details of.

The university offers, decent residential facilities for boys and girls. The University has three Boys Hostels with a capacity of 694 and four Girls hostel with a capacity of 270 seats.

Hostel details are as follows:

S. No.	Name	Capacity	Occupancy
1.	Hostel No.1 (Boys Hostel)	263	259
2.	Hostel No.2 (Girls Hostel)	149	159
3.	Hostel No.3 (Girls Hostel)	121	120
4.	Hostel No.4 (Boys Hostel)	66	62
5.	Hostel No.5 (Boys Hostel)	365	331
	Total	964	931

All the hostels provide reading room along with television, music system and radio. All newspapers and relevant magazines are also provided. A well-equipped gymnasium is available on campus. In addition, all the hostels are provided with free Wi-Fi facility which is available 24 hours throughout the year.

4.1.7 Does the university offer medical facilities for its students and teaching and non-teaching staff living on campus?

Yes the University has a Medical Centre with a well-qualified MBBS medical officer and an assistant at Hostel no.5 who is there to attend any medical emergency.

4.1.8 What special facilities are available on campus to promote students' interest in sports and cultural events/activities?

A. Sports

- ICT has spacious playfields within the campus for Football, Cricket, Volleyball, Basketball, Badminton, Tennis court etc.
- Every year the university conducts Inter-Department and Inter-University Tournaments for Football and Cricket
- The university teams have participated in various tournaments and won accolades in the past at various levels.
- The university teams receive special training facilities from various experts in the respective fields every year. The required sports gear is provided by ICT for various games like football, basketball, Tennis, Badminton and Cricket. The requisite equipment for indoor sports including Table Tennis, Badminton and caroms are also available. The Gymnasium has well-furnished instruments for all exercise and physical training.
- The sports related activities of the university are planned in advance, supervised and executed by a Sports Secretary and a committee who are responsible for overall planning, supervision and execution of all.

B. Cultural events/ activities

- ICT organizes its annual cultural and techno-festival "VORTEX" with great enthusiasm. A series of events are conducted which bring students from various other places outside the University. It also provides a platform for the industrial personnel to interact with students. The event YICC which is part of the industry-institute interface where the industries present live problems and best solution provided is rewarded with a cash prize. This has been a very popular event over past for many years. Other events like Debates, Quizzes, and technical events are also part of this VORTEX. This is event organized by an elected team comprising of Vortex Secretary who manage and organize the event with the help of assigned faculty.
- ICT has a Music, Dance and cultural club which is responsible to carry out the

cultural festivals. A student body comprising of a secretary along with his team are elected every year. A faculty in-charge is assigned to help the student body in organizing the events. The university provides special trainings to cultural team members and supports with requisite (musical instruments, sound systems, peripherals etc.). “MANZAR” is an annual cultural festival which is organized by this club. This event every year is implemented with a theme and receives huge response from all students, staff and faculties. ICT Music, Dance and cultural club also conducts other cultural activities like Kavi Sammelan annually.

- The other programmes usually undertaken by this club also include plantation of trees, blood donation camps, meditation camp, awareness rallies, 10km marathon for awareness, clean-up drives in various parts of Mumbai, etc.
- The other activities which students also learn from other than curriculum are by participating in activity clubs such as: Flying model Club and Photography Club. Annually one day event is conducted for displaying the art-forms such as painting, crafts work, free hand sketching, etc. which are crafted by students of ICT is also worth mentioning.

4.2 Library as a Learning Resource

4.2.1 Does the library have an Advisory Committee? Specify the composition of the committee. What significant initiatives have been taken by the committee to render the library student/user friendly?

Yes.

The committee comprises of the Dean (RCRM) as Chairperson and the Librarian as the Member Secretary and five other faculty members.

The significant initiatives taken by / supported by the library committee are,

- Supported the Librarian’s initiative in introducing the Reaxys database for campus-wide access in the institute.
- Supported the Librarian’s initiative of having campus-wide access to the Scopus database on a multi-year subscription basis.
- Supported the Librarian’s initiative of acquiring the electronic journal archives from

various publishers using the TEQIP phase II funding.

- Supported the Librarian's initiative of seeking membership of the UGC-INFLIBNET e-journal consortium and getting campus-wide access to over 1500 journals.
- Some Computational facilities of library are also allowed for e-learning programme of students.

The above initiatives have resulted in various electronic resources being made available to students and faculty of ICT, Mumbai. Needless to say that they are being heavily used as is evident from the download statistics.

4.2.2 Provide details of the following:

- Total area of the library (in Sq. Mts.) - 1413.58 m²
- Total seating capacity - 212
- Working hours (on working days, on holidays, before examination, during examination, during vacation)

Day status	Timing
Working days (before and during examination, during vacation)	8.30 AM – 8.30 PM
Holidays	11.00 AM – 6.00 PM
The library is closed only during 4 days a year, namely, Republic Day (26 th January), Independence Day (15 th August), Ganesh Chaturthi and Dussera	

The library is housed in a separate ground plus two floored building. The library has a reading area spread across the three floors accommodating 212 users in all at a time. Each floor also has stacking area. The library building has separate wash rooms for males and females, a drinking water-cooler.

The shelves in the stacking area display the holdings in the respective shelves.

4.2.3 Give details of the library holdings:

- a. Print (books, back volumes and theses) – 90340

- b. Average number of books added during the last three years – 162 books
- c. Non Print (Microfiche, AV) – 1305 CD-ROMs
- d. Electronic (e-books, e-journals) – 3878 (**no. of current journals from ACS, RSC, T&F, Wiley, Springer and Elsevier**) + 209 electronic journal backfiles (Wiley 49 titles + RSC 59 titles + T&F 43 titles + Elsevier 53 titles + Sage 5 titles)
- e. Special collections (e.g. text books, reference books, standards, patents) – **the text-books, reference books, etc. form part of the library collection available for use on open access basis.**
- f. Book Banks – **Yes, it exists.**
- g. Question Banks – **No.**

4.2.4 What tools does the library deploy to provide access to the collection?

The access to library collection is through the Online Public Access Catalogue (OPACs) available on each floor of the library.

The library subscribes to print and electronic journals databases such as Scopus and Reaxys on its own. It also offers access to electronic journals and a database (Scifinder) through the UGC-INFLIBNET Digital Library Consortium.

The access to all the e-resources is available through-out the campus through IP address authentication.

Likewise, there is also access to the anti-plagiarism software Urkund for all faculty of the Institute.

Library page on the intranet handled by Information Processing Centre (IPC).

4.2.5 To what extent is ICT deployed in the library? Give details with regard to

The library uses a library management software for its operations such as membership record, circulation, acquisition, cataloguing and online public access catalogue.

The bar-code technology is used in the library for circulation. The books and users' library cards are bar-coded. The users' (Students and Faculty) identity cards also function as their library cards.

Central internet access facility for students, apart from campus wide access to internet, is adjoining the library.

Access to internet with 1GBps + 15 MBps + 15 MBps Bandwidth from NIC, and private ISPs exists. It is managed by IPC.

4.2.6 Provide details (per month) with regard to

- Average number of walk-ins – 200 (external users) The inhouse do not need to register for the entry as it is an open access space.
- Average number of books issued/returned – 266 /274
- Ratio of library books to students enrolled – 37:1
- Average number of books added during the last four years - 139
- Average number of login to OPAC – Not Available as it is not a web OPAC
- Average number of login to e-resources – 5752
- Average number of e-resources downloaded/printed - 466955
- Number of IT (Information Technology) literacy trainings organized – Not applicable

4.2.7 Give details of specialized services provided by the library with regard to

- Manuscripts – No, not required.
- Reference – the Librarian conducts training programmes for UG, PG and PhD students to educate them in using various electronic and print resources such as Scopus, Reaxys, Scifinder, Chemical Abstracts, etc.
- Reprography/Scanning – Photocopying facility is provided within the library.
- Inter-library Loan Service – No
- Information Deployment and Notification – New arrivals of books and periodicals are displayed for a week and three days respectively. Also, the list of new arrivals (books) is provided on the Institutional intranet.

- OPACS – Two terminals are available as OPACs on each floor of the library.
- Internet Access – Campus wide access to internet and electronic resources through IP address authentication for students and faculty members. It is handled by the Information Processing Centre (IPC) of the Institute.
- Downloads - Campus wide access to internet and electronic resources through IP address authentication for students and faculty members enables freedom of downloads to subscribed resources.
- Printouts – Student and faculty members using the library can take print-outs of subscribed resources.
- Reading list/ Bibliography compilation – No
- In-house/remote access to e-resources Campus wide access to internet and electronic resources through IP address authentication for students and faculty members.
- User Orientation – Yes, it is conducted.
- Assistance in searching Databases – Yes, it is offered by the Librarian.
- INFLIBNET/IUC facilities – Membership of the UGC-INFLIBNET e-journals consortium.

4.2.8 Provide details of the annual library budget and the amount spent for purchasing new books and journals.

Year	Budget	Expenditure (INR)
2012-2013	13500000	22113272.74
2013-2014	24000000	27342069.00
2014-2015	40000000	25196579.00

4.2.9 What initiatives has the university taken to make the library a ‘happening place’ on campus?

- 1) Library is open for twelve hours a day on regular working days, while it is also open for Seven hours on Sundays and other holidays.

- 2) Online Public Access Catalogue (OPAC)
- 3) Access to electronic resources across the campus
- 4) Access to Anti-Plagiarism software across the campus
- 5) Membership of UGC INFLIBNET enabling access to e-resources
- 6) Open access to library resources
- 7) Training programmes by the Librarian for users in learning to use various e-resources and specialized print resources
- 8) CCTV cameras

4.2.10 What are the strategies used by the library to collect feedback from its users? How is the feedback analysed and used for the improvement of the library services?

The users are free to meet the Librarian to share their opinions regarding the library. Also, the users can write suggestions and views to various authorities of the Institute. Such opinions, views and suggestions are discussed at various forums.

4.2.11 List the efforts made towards the infrastructural development of the library in the last four years.

- 1) Total renovation of the library building
- 2) New and energy efficient lighting
- 3) CCTVs
- 4) Additional chairs for comfortable sitting in the library for long hours

4.3 IT Infrastructure

4.3.1 Does the university have a comprehensive IT policy with regard to

- IT Service Management - Yes
- Information Security - Yes

- Network Security - Yes
- Risk Management - Yes
- Software Asset Management - Yes
- Open Source Resources - No
- Green Computing - Yes

4.3.2 Give details of the university's computing facilities i.e., hardware and software.

- IT Service Management - Yes
- Number of systems with individual configurations - 1000 approx
- Computer-student ratio - 1:3 for UG, 1:2 for PG
- Dedicated Computing facilities - Yes
- LAN facility - Yes
with Extreme Make 350x,450x,650x L2,L3 and core switches running on 1G fibre and 10G ready infrastructure. Cyberoam 500ia firewall with 400 live users in HA Configuration.
- Proprietary Software – Yes
MIS with different modules such as Students Fees Collection, Students Result processing, Tabulation Register, Transcripts printing, Student scholarship, fellowships Procurement software for all through MIS.

Online Attendance module for students.

Matlab 2009, Aspen, Comsol, Cosmotherm, Turbomol and Linguaphone Language software.
- Number of nodes/ computers with internet facility - 1000+ with i3 processor, 2GB RAM, (All-in-One).
IBM M3 'Xeon processor servers 6 numbers clustered on Hyper-V.
Microsoft Campus licensing for 3 years.
- Any other (please specify) – Entire campus is on Wi-Fi including student

hostels. Ubiquity UniFy Switches with Indoor and Outdoor Access points.

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities? ----

Recently campus wide Networking project revamping has been completed. Also installation of Campus CCTV monitoring system has been completed. Currently the installation of Wi-Fi throughout the campus is ongoing.

4.3.4 Give details on access to on-line teaching and learning resources and other knowledge and information database/packages provided to the staff and students for quality teaching, learning and research.

Teachers use online exam modules for conducting the surprise and continuous assessment tests.

Online Access to NPTEL course material and sharing of lectures through webinar. Skype for online discussion.

Teacher evaluation by students using the Student Feedback system at the end of every Semester

Also online attendance system is in place where students can also login and register the feedback.

4.3.5 What are the new technologies deployed by the university in enhancing student learning and evaluation during the last four years and how do they meet new / future challenges?

Class room Feedback facility (online) is available to the students which is taken at the end of every lecture.

Teacher evaluation is done by students using the Student Feedback system at the end of every Semester. Faculty login accounts are provided to view the semester wise feedback. Students get updated information immediately by Intranet Portal.

4.3.6 What are the IT facilities available to individual teachers for effective teaching and quality research?

Individual Teachers are provided with Computers with internet facilities. They have the access to all the Library information online that includes access to subscribed international and national E-Journals and information available through the INFLIBNET 24x7. With this teachers can access to latest information available in their subject domains as well as in the area of the research work and keep themselves updated about the advances in research and technology. Teachers can also avail various internet tools for effective teaching learning and evaluation methodology used in the classrooms.

4.3.7 Give details of ICT-enabled classrooms/learning spaces available within the university? How are they utilized for enhancing the quality of teaching and learning?

Campus wide networking with access to the Internet facility & E-resources.

Class rooms have WiFi enabled projectors which are commonly used by teachers for lectures, instructional videos and presentations

Online Access to NPTEL course material and sharing of lectures through webinar. Skype for online discussion.

4.3.8 How are the faculty assisted in preparing computer- aided teaching-learning materials? What are the facilities available in the university for such initiatives?

Each faculty has computer, Internet facility & Access to E-resources.

4.3.9 How are the computers and their accessories maintained?

The institute has a separate center called as the Information Processing Center having two system engineers and support staff which helps in maintaining the network, MIS as well as updation of Website.

All computers as well as the accessories are covered under AMC and a resident service engineer is also available from the AMC firm.

4.3.10 Does the university avail of the National Knowledge Network connectivity? If so, what are the services availed of?

Services are availed is access to Inflightnet for library related database/information (scopus, scifinder, sciencedirect)

Also some online subscriptions for journals, databases etc. are provided.

4.3.11 Does the university avail of web resources such as Wikipedia, dictionary and other education enhancing resources? What are its policies in this regard?

Yes, through the internet & E-resources, only authenticated users have access based on the personal internet ids.

4.3.12 Provide details on the provision made in the annual budget for the update, deployment and maintenance of computers in the university.

Institute has annual maintenance contract system for maintaining the computers of all the faculty, staff, laboratories and information processing centres. AMC awarded to the agency following tendering process and the payments for the same are made by the institute Director. Faculty, Staff and Department of the institute avails this facility for day to day maintenance of computers as well as for purchase of the hardwares through the approved contract schemes from this agency.

4.3.13 What plans have been envisioned for the gradual transfer of teaching and learning from closed university information network to open environment?

The institute is promoting the use of open resources and online learning resources.

It is proposed that lectures would be made available online for the wider dissemination of knowledge base.

4.4 Maintenance of Campus Facilities

4.4.1 Does the university have an estate office / designated officer for overseeing the maintenance of buildings, class-rooms and laboratories? If yes, mention a few campus specific initiatives undertaken to improve the physical ambience.

The University has appointed civil and site engineer for overseeing the construction and maintenance of buildings, class-rooms and laboratories. The following specific initiatives are taken by the engineer

- Expansion of academic blocks of the existing campus.
- Construction of hostels and guest houses at the campus with all the necessary amenities.

- Construction of accommodation facility for the faculty members. In an upcoming project there will be construction of new faculty tower (stilt + 20 storeys).
- Construction of academic and research centre building.
- Construction of accommodation for support staff (stilt + 20 storeys) along with a new Ladies Hostel of 20 storeys.
- Regular monitoring is done for the maintenance of classrooms, laboratories, library, lawns, gardens, play grounds, cafeteria etc.
- Hygienic and well maintained washrooms are made available.
- Proper cleanliness is maintained throughout the campus.
- Solar lamps are used in the campus and solar heaters are facilitated in the hostel which motivate the students to use green energy and is a small step towards the conservation of energy.
- Vermiculture and rain water harvesting are some of the other practices which are done in the campus of ICT to maintain the ecological balance.

4.4.2 How are the infrastructure facilities, services and equipments maintained? Give details.

- The administrative office of ICT is responsible for overall maintenance of infrastructure facilities, services and equipment. The common places such as Conference halls, Auditorium, Library, Play grounds etc are maintained under instruction designated officers of the institute.
- Each department is responsible for the maintenance and upkeep of classrooms, conference halls, labs, equipment etc. through building incharges and lab in-charges in coordination with administration department and maintenance team including civil engineers, vendors and suppliers of ICT.
- Renovation of various labs, academic blocks and other common infrastructure facilities are undertaken by respective authorities.
- Similarly the living area like hostels, dining halls, canteens etc. are maintained

by dedicated workforce. Repair is done under the supervision of respective authorities like civil engineers.

- Computer centre, equipment like aqua-guard, water-coolers etc are maintained under AMCs.

CRITERION V: STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

5.1.1 Does the university have a system for student support and mentoring? If yes, what are its structural and functional characteristics?

The university promotes a three-tier system for mentorship. The students work in teams that are lead by post-graduate or third-year undergraduate students to organize various events and seminars throughout the year. These students mentor students from the first and second year UG. These interactions are not limited to just organizing the events but are also a platform for the students to exchange ideas and help one another with academic difficulties. Additionally, the senior students organize sessions on CV-making, competitive exam preparation, doubt-solving etc. to help the first and second year students. These responsibilities are passed on from batch to batch.

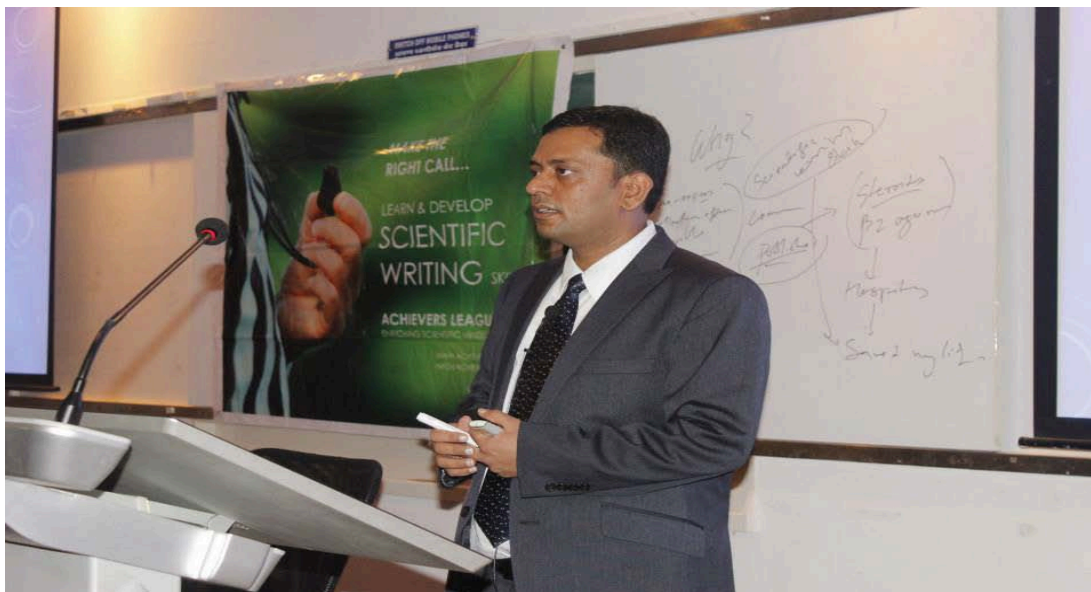
5.1.2 Apart from classroom interaction, what are the provisions available for academic mentoring?

The university provides the opportunity for undergraduate students to work in research labs headed by its faculty. In these labs faculty as well as post-graduate students mentor the students. The Technical Education Quality Improvement Program (TEQIP) funds these projects. Additionally, the UDCT Alumni Association (UAA) conducts a summer vacation mentorship program, where students complete projects under the mentorship of esteemed alumni. Bombay Technologist, which is an institute-run research magazine, organizes the BT Undergraduate Research Program, where faculty members mentor students to work on long-term projects in their research labs.

5.1.3 Does the university have any personal enhancement and development schemes such as career counselling, soft skill development, career-path-identification, and orientation to well-being for its students? Give details of such schemes.

The university conducts Aptitude tests for incoming students to help them be aware of their strengths and weaknesses. There is an on-campus counselor who is available to all students during working hours. Additionally, the institute has a Training and Placements Cell, which helps students look for job opportunities and trains them for the interview process. The students' council organizes seminars and talks by career

counselors and eminent personalities in the industry to help students get a clearer idea of the career opportunities available to them.



5.1.4 Does the university provide assistance to students for obtaining educational loans from banks and other financial institutions?

Institute provides the assistance to students in the form of recommendations for providing educational help/loans to the private institutions/banks who are providing such type of help to the needy students as and when required. Institute itself provides scholarships to 340 UG students through endowments specially created for the purpose.

5.1.5 Does the university publish its updated prospectus and handbook annually? If yes, what are the main issues / activities / information included / provided to students through these documents? Is there a provision for online access?

The Institute provides an updated prospectus and handbook which is published in the form of hard copies and soft copies, there is an online access to the same. Following are the issues/ activities/ information added in the handbook:

1. About ICT:
 - 1.1 Important Instructions
 - 1.2 Approach Routes to the ICT
 - 1.3 Prologue : Are You Poised to Join the ICT
 - 1.4 National and International Rankings of the ICT
2. Institute Authorities and Profiles of Departments

- 2.1 Institute Authorities
- 2.2 Heads of Departments and Co-ordinators of Centres
- 2.3 Admission Committee
- 2.4 Important Functionaries & Support Staff
- 2.5 Faculty of Institute & Distinguished Visiting Faculty
- 2.6 Profiles of Departments and Centre of Excellence

- 3. Courses Offered and Criterion of Eligibility for Admission
 - 3.1 Courses Offered
 - 3.2 Admission to Bachelor's Courses
 - 3.3 Admission to Master's Courses
 - 3.4 Admission to Doctoral Courses
 - 3.5 Admission to Post Graduate Diploma Course
 - 3.6 Examination Pattern
 - 3.7 Eligibility, Enrolment and Transfer/Leaving/Migration Certificates
 - 3.8 Commencement of Academic Year, Code of Conduct and Discipline
 - 3.9 Various Government Concessions in Fees and their Requirements

- 4. Campus and Infrastructure
 - 4.1 Prof. M. M. Sharma Library
 - 4.2 Hostels and Counseling Services

- 5. Associations, Endowments and Placement
 - 5.1 Technological Association
 - 5.2 UDCT Alumni Association
 - 5.3 Endowments
 - 5.4 Industrial Placement 2013-14

- 6. Anti-Ragging Laws and Notifications of UGC

- 7. Undertakings
 - Annexure I : Undertakings by Students
 - Annexure II : Anti-ragging Undertaking (by Students and Parents)
 - Annexure II : Various Forms and Pro Forma

5.1.6 Specify the type and number of university scholarships / freeships given to the students during the last four years. Was financial aid given to them on time? Give details (in a tabular form) for the following categories: UG/PG/M.Phil/Ph.D./ Diploma others (please specify)

The Following list shows the type university scholarships / freeships awarded to students of the institute including their names for the year 2014-15. Every year these types of Scholarships/fellowships awarded to meritorious students of the institute.

I. GENERAL SCHOLARSHIPS

1. M. S. Patel Trust Merit-cum-Means Scholarship (Min six) (Value of Rs. 5,000/- each.)

Mr. Kudalkar Prathamesh Ajit Anjali - First Year B.Tech. (Foods)



Ms. Bhor Sneha Balasaheb Jayashri - Second Year B.Tech. (Textile)



Mr. Kanthe Ankit Deepak Shubhangi - Second Year Chem. Engg.



Mr. Chavan Neil Rohidas Varsha - Second Year B. Tech. (Polymer)



Mr. Vibhute Anil Venkatrao Bharatbai - Final Year Chem. Engg.



Mr. Shende Surjit Ramesh Sheela - Final Year Chem. Engg.



2. Rushmi-Druman Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)

Ms. Prajapati Foram Umesh Padmini - Second Year B.Tech. (Polymer)



3. Distinguished Alumini Merit-cum-Means Scholarship (One) (Value of Rs. 1,800/-)

Mr. Dorage Ajinkya Siddhanath Rajeshree - Third Year B. Tech. (Polymer)



4. Smt. Badamidevi Chiranjilal Murarka Charity Trust Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)

Mr. Kundaram Kiran Narsayya Sunita - Second Year B.Tech. (Polymer)



5. Sohrab Mistry Merit-cum-Means Scholarship (Two)(Value of Rs. 5,000/- each.)

Mr. Mishra Ankit Vijaynarayan Savitri - Second Year B. Tech. (Polymer)



Mr. Fangari Shiban Navid Rakhsha - Final Year B. Pharm.



6. Perin & Jal Khan Merit-cum-Means Scholarship (Three)
(Value of Rs. 3,600/- each)

Mr. Deshmane Siddhant Nitin Darshana - Second Year Chem. Engg.











Mr. Mandot Mayank Arvind Suraj - Final Year B. Pharm.



Ms. Kore Surbhi Subhash Shobha - Final Year B.Tech. (Polymer)



7. Smt. Parvathy Sitaram Merit-cum-Means Scholarship (Two) (Rs. 4,500/- each).

Mr. Jain Vaibhav Vinaykumar Shakuntaladevi-	Second Year B.Tech. (Foods)	
Ms. Sonawane Namita Ravindra Chhaya	- Second Year B.Tech. (Textile)	
8. Druman M. Trivedi Merit-cum-Means Scholarship (Two)(Value of Rs. 3,600/- each).		
Ms. Honkamble Supriya Dilip Surekha	- Second Year B.Tech. (Dyes)	
Ms. Ghode Nikita Nandkumar Nivedita	- Third Year Chem. Engg.	
9. S.L. Venkiteswaran Merit-cum-Means Scholarship (One) (Value of Rs. 4,500/-)		
Mr. Tawade Manish Yashwant Sunita	- Third Year Chem. Engg.	
10. M.C. Chhatrapati Charitable Trust Merit-cum-Means Scholarship (Two) (Value of Rs. 3,600/- each).		
Mr. Darade Kamlesh Namdeo Sunanda	- Second Year B. Tech. (Dyes)	
Mr. Suroshe Rohit Digamber Meena	- Second Year B.Tech. (Foods)	
11. Late Dr.(Mrs.) Mahalaxmi Bhagwat Merit-cum-Means Scholarship(One) (Value of Rs. 3,600/-)		
Mr. Edlabadkar Vaibhav Arunrao Rekha -	Second Year B. Tech. (Surface Coatings)	
12. Prof. A.N. Kothare Scholarship (Three) (only for first year, HSC Mumbai Board preferred) (Value of Rs. 7,500/- each).		

Mr. Narute Suresh Tanaji Rekha - First Year B. Tech. (Polymer)



Mr. Pawar Ritesh Dinkar - First Year Chem. Engg.



Ms. Narang Medha Rajesh Anju - First Year B.Tech. (Foods)



13. Rukmani and Nagraj Rao Memorial Merit-Cum-Means Scholarship (One)
(Value of Rs. 7,000/-)

Mr. Pulekar Uddhav Mangesh Manjusha - Third Year B. Tech. (Surface Coatings)



14. Dr. D.D. Haldavnekar Merit-Cum-Means Scholarship (Three) (Value of Rs.1800/- each.)

Mr. Dodia Hardik Harshad Jayshree - Second Year B. Tech. (Pharma)



Ms. Mali Monika Vitthal Rohini - Final Year B.Tech. (Textile)



Mr. Savale Yogesh Kadu Indubai - Final Year B. Tech. (Textile)



II. MIXED – DEPARTMENT OF OILS, FOOD, AND POLYMER

1. **Fine Organic Industries Merit-cum-Means Scholarship (Three) (Rs.7500/-each) amount to be decided each year. For the dept. of oils, foods and polymers.**

Mr. Arole Kailash Dhondiram Kalinda - Second Year B. Tech. (Polymer)



Mr. Kataria Tarun Kishor Manisha - Final Year B. Tech. (Oils)



Mr. Kanase Yogesh Suresh Sharada - Final Year B. Tech. (Foods)

**2. Kamani Oils Merit-Cum Means Scholarship (two) (Value of Rs. 25,000/-each).
(for students from Final Year B.Tech. (Oils) and Final Year B.Tech.(Foods))**

Ms. Parate Ashwini Hemraj Vimal - Final Year B. Tech. (Oils)



Ms. Wagh Ovee Ravindranath Sangita - Final Year B. Tech. (Foods)



III. DEPARTMENT OF CHEMICAL ENGINEERING

1. An Anonymous Alumnus Merit-cum-Means Scholarship (One) (Value of Rs. 3,500/-)

Mr. Parit Nitin Baburao Prabhawati - Third Year B. Tech. (Polymer)



2. Gogri Brothers Scholarship (Four) (value of Rs. 4,000/- each).

Mr. Jain Ujwal Ashok - First Year Chem. Engg.



Mr. Gaikwad Tanmay Ashok - First Year Chem. Engg.

Mr. Deshmukh Akul Dhananjay Ranjana - Second Year Chem. Engg.



Ms. Kuber Pranali Nitin Kalyani - Final Year Chem. Engg.



3. Hemraj Lalji Meishry Scholarship (Two) (Value of Rs. 3,500/- each).

Mr. Gaikwad Tanmay Ashok - First Year Chem. Engg.



Mr. Kondekar Rakesh Ashok Rekha - Final Year Chem. Engg.

4. Dr. Nandkumar Kochar & Raj Kumar Kochar Trust Scholarship (Two)
(Value of Rs. 1,000/- each).(one from S.Y and one from T.Y. Chem Engg.)

Mr. Patil Bhushan Suresh Vandana - Third Year Chem. Engg.



Ms. Arora Sonam Mohanlal Jyoti - Second Year Chem. Engg.

5. Purbhudas Jeevandas Mint Road Wadi Trust Scholarship (Four) (Rs. 3,500/- each).

Mr. Ade Nilesh Ganpat Chanda - Third Year Chem. Engg.



Mr. Patil Chetan Balasaheb Mandakini - Third Year Chem. Engg.



Mr. Lahane Datta Sakharam Sunita - Final Year Chem. Engg.



Ms. Chiluka Nandini Rabindranath Sunita - Final Year Chem. Engg.



6. Y. T. Shah Merit-cum-Means Scholarship (One) (Value of Rs. 2,000/-)

Ms. Sarode Apoorva Dattatraya Nilima - Final Year Chem. Engg.

7. Vaishnomal Malhotra - K.K. Malhotra Merit-cum-Means Scholarships (Two)
(Value of Rs. 20,000/- each).

Mr. Patil Chetan Balasaheb Mandakini - Third Year Chem. Engg.



Mr. Kulkarni Onkar Satish Swati - Third Year Chem. Engg.



8. Head Master Muthuswami Merit-cum-Means Scholarship (One) (Value of Rs. 850/-)

Ms. Tadge Snehal Manohar Bharati - Third Year Chem. Engg.



9. Rajendra G. Sardesai Scholarship (Four) (Value of Rs. 6,000/- each)

Mr. Narote Vishal Mahesh - First Year Chem. Engg.



Ms. Parakh Sheetal Kishor Sheela - Final Year Chem. Engg.



Mr. Sonone Nitesh Ramdas Meena - Final Year Chem. Engg.



Ms. Tijare Dhanshri Rajendra Sharda - Final Year Chem. Engg.



10. B. Chem. Engg Class of 1962 (Two) (Rs. 5,000/- each).

Mr. Jain Ujwal Ashok - First Year Chem. Engg.



Mr. Ghadage Bhushan Sadashiv Vaishali - Third Year Chem. Engg.



11. Andanallur Srinivasa Venkatesan & Ranganayaki Scholarship (One) (Rs.3,000/-)

Mr. Kulkarni Onkar Satish Swati - Third Year Chem. Engg.



12. Daisy Navaroze Baria Scholarship (One)(Rs. 2,500/-)

Mr. Bhujbal Sahil Vinayak Varsha - Third Year Chem. Engg.



13. Dr. Surendra R. Gupta Scholar (Mukut Sah) (one - to be continued for the entire four years course only if he/she secures First Class throughout each of the four years) (Rs. 40,000 Tution fees + Rs. 20,000/- Hostel fees=Rs. 60,000/-) (preferably for a girl student) (Rs. 60,000/- each)

For the year 2011

- Mr. Chetan B. Patil - Third Year Chem. Engg.



For the year 2012

- Ms. Priyanka K. Bansode - Second Year Chem. Engg.



For the year 2013

- Mr. Pawar Ritesh Dinkar - First Year Chem. Engg.



14. Jitendra Mehta Scholarship (Two) of (Rs. 20,000) (Rs. 10,000/- each) year to year

For the year 2012

- Ms. Rituja B.Patil - First Year Chem. Engg.

- Mr. Sarang P. Waghanna - First Year Chem. Engg.



For the year 2013

- Mr. Vibhute Anil Venkatrao Bharatbai - Final Year Chem. Engg.



- Mr. Shende Surjit Ramesh Sheela - Final Year Chem. Engg.



13. Sarojben and Pratapray Shah Memorial Scholarship (Six) (Value of Rs.75,000/- p.a. each)

- Ms. Apoorva D. Sarode - Final Year Chem.Engg.

- Ms. Sheetal K. Parakh - Final Year Chem.Engg.



- Mr. Prasad C. Shinde - Third Year Chem.Engg.



- Mr. Bhushan S. Ghadage - Third Year Chem.Engg.



- Ms. Naphade Rutuja Bhaskar Sangita - Second Year Chem. Engg.

- Mr. Waghanna Sarang Pravinchandra Pratima - Second Year Chem. Engg.



IV. LOAN SCHOLARSHIPS

1. Kusumben and Baba Sheth Kothari Charitable Trust Merit cum Means Scholarship (only for one Chem. Engg. Student) (as per our discretion to help, reimburse fees, mess bilss etc. for deserving students on a returnable basis when they graduate and start earning)
(No. of Student one) (Value of Rs. 4500/-)

Candidate Not Available

2. Shri Sharad C. Patel Merit cum Means Scholarship (one) (Value of Rs. 50,000/-) (only for UG student in Dept. of Chem. Engg.) : Candidate Not Available
3. B. Chem. Engg Class of 1962 : Candidate Not Available
4. B. Chem. Engg. Class of 1982 : Candidate Not Available

V. DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY

1. Castrol Merit-cum-Means Scholarship (Two) (Value of Rs. 4,500/- each)

Mr. Nikhar Vaibhav Pradip Mohana - Second Year B. Tech. (Oils)



Mr. Kataria Tarun Kishor Manisha - Final Year B. Tech. (Oils)



2. G.M. Alias Abhyankar Merit-cum-Means Scholarship (One) (Rs.4,000/-)

Ms. Bannagare Aishwarya Dilip Indira - Second Year B. Tech. (Oils)



3. Shri Keshao Bapurao Kulkarni Scholarship (for one UG student of Dept. of Oils) (Rs. 7500/-)

Mr. Gade Harshal Vijay Swati - Final Year B. Tech. (Oils)



VI. DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY

1. Perin & Jal Khan Merit-cum-Means Scholarship (Two) (Value of Rs. 4,000/- each).

Mr. Sharma Amar Shambhu Usha - Second Year B. Tech. (Textile)



Ms. Banait Dhanashri Sunil Seema - Second Year B. Tech. (Textile)



2. Mr. Dinshah B. Katrak & Mrs. Goolcheher D. Katrak Merit-cum- Means Scholarship (One) (Value of Rs. 4,000/-)

Mr. Yeole Yogesh Dnyandeo Baby - Final Year B. Tech. (Textile)



3. Late Mrs. Asha Khemani Memorial Scholarship (Two) (Value of Rs. 2,500/- each). One for UG and for PG

Mr. Shingote Sanket Rajaram Rohini - Final Year B. Tech. (Textile)



VII. DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY

1. “Professor P.J. Dubash Memorial – AFST (I), Mumbai Chapter Endowment Scholarships” (One) (Value of Rs. 25,000/-) for UG B.Tech. student in FET (Food Engineering and Technology) Department.

Ms. Dahake Rani Subhashrao Pramila - Third Year B. Tech. (Foods)

VIII. DEPARTMENT OF POLYMER AND SURFACE ENGINEERING

1. Jitendra & Hemant Vakil Merit-cum-Means Scholarship (Two)(Rs. 2,800/- each)

Mr. Nikhade Rajat Gopalrao Nalini - First Year B.Tech. (Surface Coatings)



Mr. Pure Avdhut Mohanrao Malati - Final Year B. Tech. (Surface Coatings)



2. Kumar R. Basu Memorial Merit-cum-Means Scholarship (Two) (Rs. 3,500/- each) (only PPV)

Mr. Pasari Sandesh Omprakash Santosh - Final Year B. Tech. (Polymer)



Ms. Vidya Jayaram Mythly - Third Year B. Tech. (Polymer)



4. Synpol Memorial Scholarship (One) (Rs. 3,500/-)

Mr. Mulge Saket Satish Sangeeta - First Year B.Tech. (Surface Coatings)



5. "Ms. Swati Balwant Bhagwat Merit-cum-means Scholarship" for ONE girl student who has passed first year B. Tech. examination in Dept. of Polymer and Surface Engineering and Technology (Rs. 4200/-)

Candidate Not Available

IX. DEPARTMENT OF DYESTUFF TECHNOLOGY

1. Colour Chem.Ltd. Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)

Mr. Kanhere Sagar Vishnudas Shobha - Second Year B. Tech. (Dyes)



2. Alumni Association – UDCT Dyestuff Division Golden Jubilee Fund Merit –cum –Means Scholarship (One) (Value of Rs.3,600/-) "A/C 588"

Mr. Gore Mahesh Ajit Anjali - Second Year B. Tech. (Dyes)



3. Dr. Kishore Manilal Shah Endowment Merit cum Means Scholarship in Dyestuff Technology (for one UG student from First to Final Year) (Value of Rs. 4500/-)

Mr. Gulagi Rohan Ashok Pratiksha - Final Year B. Tech. (Dyes)



X. DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

1. Dr. Krishna S. Manudhane Merit-Cum-Means Scholarship (Two) (Rs.1,800/- each).

Ms. Rane Pallavi Satish Pratiksha - Third Year B. Pharm.



Mr. Mandot Mayank Arvind Suraj - Final Year B. Pharm.



2. Dr. R.K. Dhote Charitable Trust Merit-Cum-Means Scholarship (One) (Rs. 3,600/-)












Mr. Fangari Shiban Navid Rakhsha - Final Year B. Pharm.



XI. GENERAL SCHOLARSHIPS ON YEAR TO YEAR BASIS

1. Gunvati Jagannath Kapoor Scholarship (40) (out of forty 20 for B. Pharm. students) (Value of Rs. 45,000/- each) from I, II, III, & IV year B.Tech. (Pharma), B.Tech. (Other Branches), B. Pharm and B.Chem. Engg.

B. Pharm. Pharmaceutical Sciences and Technology

Ms. Mahajan Nikita Anil Ratna	-	Final Year B. Pharm.	
Mr. Shah Kashish Harshad Bharti	-	Third Year B. Pharm.	
Mr. Kapadia Akshay Bhupendra Leena	-	Third Year B. Pharm.	
Mr. Ranvir Vikas Prakash Chaya	-	Final Year B. Pharm.	
Mr. Patil Pritesh Suresh Sheela	-	Third Year B. Pharm.	
Mr. Yangod Saiprasad Gangareddy Shakuntala	-	Final Year B. Pharm.	
Mr. Jitkar Prasad Ashok Ranjana	-	Second Year B. Pharm.	
Mr. Gandhi Aakash Bipin Kalpana	-	Third Year B. Pharm.	
Mr. Sonawane Rahul Narayan Lakshmi	-	Third Year B. Pharm.	
Ms. Mahajan Ankita Suhas Swati	-	Second Year B. Pharm.	
Ms. Sonawane Gauri Dattatraya Maya	-	Second Year B. Pharm.	

Ms. Rane Pallavi Satish Pratiksha - Third Year B. Pharm.

B.Tech. Other Branches

Mr. Dorage Ajinkya Siddhanath Rajeshree - Third Year B. Tech. (Polymer)



Mr. Dodia Hardik Harshad Jayshree - Second Year B. Tech. (Pharma)



Ms. Mali Monika Vitthal Rohini - Final Year B.Tech. (Textile)



Mr. Parit Nitin Baburao Prabhawati - Third Year B. Tech. (Polymer)



Mr. Pagare Arun Eknath Shantabai -Final Year B. Tech. (Surface Coatings)



Mr. Savale Yogesh Kadu Indubai - Final Year B. Tech. (Textile)



Ms. Patil Sanyukta Arun Sandhya - Third Year B. Tech. (Oils)



Mr. Tandel Ameya Manoj Aruna - Second Year B. Tech. (Pharma)



Mr. Pasari Sandesh Omprakash Santosh - Final Year B. Tech. (Polymer)



Mr. Kanhere Sagar Vishnudas Shobha - Second Year B. Tech. (Dyes)



Ms. Vidya Jayaram Mythly - Third Year B. Tech. (Polymer)



Mr. Patil Shivendra Shravan Sunita -First Year B. Tech. (Surface Coatings)



Ms. Shastrakar Pragati Wasudeo Anita - Final Year B. Tech. (Textile)



Mr. Narute Suresh Tanaji Rekha - First Year B. Tech. (Polymer)



Mr. Pure Avdhut Mohanrao Malati -Final Year B. Tech. (Surface Coatings)



Mr. Akhade Aniket Avinash Rajani - Third Year B. Tech. (Pharma)



Mr. Mulge Saket Satish Sangeeta -First Year B.Tech. (Surface Coatings)



Ms. Momin Saimanaz Imtiyaz Aaisha - Third Year B. Tech. (Pharma)



Mr. Jadhav Nitesh Suresh Nanda - Final Year B. Tech. (Pharma)

Ms. Sarode Vishakha Mohan Kalpana - Final Year B. Tech. (Pharma)



Ms. Chaudhari Dhanashree Chandrakant Vaishali - Second Year B. Tech. (Pharma)



Ms. Aware Nikita Ashok Surekha - Third Year B. Tech. (Pharma)

B.Chem. Engg.

Ms. Parakh Sheetal Kishor Sheela - Final Year Chem. Engg.



Mr. Sonone Nitesh Ramdas Meena - Final Year Chem. Engg.



Mr. Kondekar Rakesh Ashok Rekha - Final Year Chem. Engg.



Mr. Lahane Datta Sakharam Sunita - Final Year Chem. Engg.



Mr. Ade Nilesh Ganpat Chanda - Third Year Chem. Engg.



Ms. Chiluka Nandini Rabindranath Sunita - Final Year Chem. Engg.



2. Mr. Rajen Mariwala Merit-Cum-Means Scholarship (One) (Value of Rs. 10,000/-)

Mr. Narote Vishal Mahesh - First Year Chem. Engg.



3. Ambuja Cement Merit-Cum-Means scholarship (Fifteen) (Rs. 10,000/- each).

Mr. Sharma Amar Shambhu Usha - Second Year B. Tech. (Textile)



Mr. Nikhade Rajat Gopalrao Nalini -First Year B.Tech. (Surface Coatings)













Mr. Yeole Yogesh Dnyandeo Baby - Final Year B. Tech. (Textile)



Ms. Bannagare Aishwarya Dilip Indira	-	Second Year B. Tech. (Oils)	
Mr. Borkar Kalpesh Shivaji Suman	-	Third Year B.Tech. (Surface Coatings)	
Ms. Sarode Apoorva Dattatraya Nilima	-	Final Year Chem. Engg.	
Mr. Shinde Shekhar Shivaji Ushabai	-	Final Year B. Tech. Polymer	
Ms. Bhambere Yogita Lahu Sushila	-	Final Year B. Tech. (Textile)	
Mr. Patil Bhushan Suresh Vandana	-	Third Year Chem. Engg.	
Mr. Dsouza Soham Francis Varsha	-	Third Year B. Tech. (Dyes)	
Mr. Aher Kiran Sanjay Sulochana	-	Second Year B. Tech. (Surface Coatings)	
Ms. Tadge Snehal Manohar Bharati	-	Third Year Chem. Engg.	
Mr. Bhujbal Sahil Vinayak Varsha	-	Third Year Chem. Engg.	
Mr. Pulekar Uddhav Mangesh Manjusha	-	Third Year B. Tech. (Surface	
Coatings) Mr. Waghanna Sarang Pravinchandra Pratima	-	Second Year Chem. Engg.	

4. Sandra Shroff Merit-Cum-Means Scholarship (Ten) (Value of Rs.10,000/- each).

Ms. Narang Medha Rajesh Anju	-	First Year B.Tech. (Foods)	
Mr. Inamdar Irshad Nazir Sayara	-	Final Year B. Tech. (Textile)	
Ms. Singhal Supriya Siya Sharan Indira	-	Final Year Chem. Engg.	
Ms. Patil Shradha Kailas Kiran	-	Third Year Chem. Engg.	
Ms. Bansode Priyanka Kamlakar Asha	-	Second Year Chem. Engg.	
Ms. Somkuwar Shradhda Balkrishna Lata	-	Final Year B.Tech. (Surface Coatings)	
Mr. Khedekar Kalpesh Kashiram Sunita	-	Final Year Chem. Engg.	
Mr. Ahire Akhil Arun Anita	-	Third Year B. Tech. (Oils)	
Ms. Naphade Rutuja Bhaskar Sangita	-	Second Year Chem. Engg.	
Ms. Gandhi Vinamrata Pravigya Archana	-	Final Year B. Tech. (Textile)	
5. “Dr. Purushottam Janardan Kangle Merit-cum-means Scholarship” for TWO students from B.Tech. (Textile) and B.Tech. (Dyesstuff) (Rs. 3000/- each)			
Ms. Bhambere Yogita Lahu Sushila	-	Final Year B. Tech. (Textile)	
Ms. Honkamble Supriya Dilip Surekha	-	Second Year B.Tech. (Dyes)	

XII. SCHOLARSHIPS AWARDED DIRECTLY BY THE OUTSIDE TRUST

1. Narotam Sekhsaria Foundation Scholarships

1) Merit-cum-Means Scholarship for ug students

- Ms. Medha Rajesh Narang - First Year B.Tech. (Food) 
- Mr. Abhishek Ravindra Vartak - Final Year B. Tech.(Pharma)
- Ms. Nairiti Jiwankumar Sinha - Final Year B. Tech. (Polymer)
- Mr. Saket Satish Mulge - First Year B.Tech. (Polymer) 
- Mr. Ronak Bharat Gudhka - Final Year B. Tech.(Pharma)

2) One Excellence Award (Value of Rs. 1,00,000/-) & Two Certificates of Merit (Value of Rs. 50,000/-) each are offered to outstanding students from among the final year students of the engineering.

- Ms. Nairiti Jiwankumar Sinha - Final Year B. Tech. (Polymer)

2. Vishwanath Dore Scholarship (C/o Asara Scholarship) (One) (Value decided by trust)

- Mr. Vishal M. Narote - First Year Chem. Engg. 

3. Arvind Memorial Scholarship (ASARA) (one) (only for F.Y. Chem. Engg. Student who have scored highest marks in chemistry at HSC examination) (Value decided by trust)

- Mr. Jimish V. Shah - First Year Chem. Engg.

4. ISCMA Merit Cum Means Scholarship

i) Dyes – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)

Mr. Gore Mahesh Ajit Anjali -Second Year B. Tech. (Dyes)



Mr. Dsouza Soham Francis Varsha - Third Year B. Tech. (Dyes)

Mr. Gulagi Rohan Ashok Pratiksha - Final Year B. Tech. (Dyes)



ii) Oils – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)

Mr. Yamgar Kaushal Madhukar Hansabai (Oils) - Second Year B. Tech.



Mr. Ahire Akhil Arun Anita - Third Year B. Tech. (Oils)



Ms. Parate Ashwini Hemraj Vimal - Final Year B. Tech. (Oils)



iii) Textile – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)

Mr. Padale Vaibhav Vilas Sunanda (Textile) - Second Year B. Tech.



Mr. Thorat Shailesh Laxman Jijabai (Textile) - Final Year B. Tech.



iv) Surface coating – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)

Mr. Patil Shivendra Shravan Sunita -First Year B. Tech. (Surface Coatings)



Mr. Ahuja Gaurav Parasram Jyoti - Second Year B. Tech. (Surface Coatings)



Mr. Borkar Kalpesh Shivaji Suman - Third Year B. Tech. (Surface Coatings)



Mr. Pagare Arun Eknath Shantabai - Final Year B. Tech. (Surface Coatings)



5. Ratan Tata Trust Scholarship for meritorious students from II, III, & final year B.Tech. and B.Chem. Engg. (Value decided by trust)

Sr. No.	Name of the Student	Year of the Study	Discipline /Specialization	Amount
1	Ms. Ankita V. Naik	First	B. Chem. Engg.	15,000/-
2	Mr. Vikram N. Khanna	First	B. Chem. Engg.	15,000/-
3	Mr. Ranga R. Seemakurthi	First	B. Chem. Engg.	15,000/-
4	Ms. Ankita J. Mukhtyar	First	B. Chem. Engg.	15,000/-
5	Mr. Pushkar Ghanekar	First	B. Chem. Engg.	15,000/-
6	Mr. Ashish Jayaraman	Second	B. Chem. Engg.	15,000/-
7	Mr. Apoorva Sampat	Second	B. Chem. Engg.	15,000/-
8	Mr. Sagar Udyavara	Second	B. Chem. Engg.	15,000/-
9	Mr. Swapnil Deshmukh	Second	B. Chem. Engg.	10,500/-
10	Mr. Kartik Kamat	Second	B. Chem. Engg.	10,500/-
11	Mr. Ashwin Chemburkar	Third	B. Chem. Engg.	15,000/-
12	Ms. Manjiri Moharir	Third	B. Chem. Engg.	15,000/-
13	Mr. Haribal Vasudev	Third	B. Chem. Engg.	10,500/-
14	Ms. Navyatha Shankar	Third	B. Chem. Engg.	10,500/-
15	Mr. Sudarshan G. Kala	Third	B. Chem. Engg.	10,500/-
16	Ms. Ayushi Khandelwal	First	B.Tech.(Coating)	10,500/-
17	Ms. Akshata Kulkarni	First	B.Tech.(Polymer)	10,500/-
18	Mr. Natarajan Vijayalakshmi	First	B.Tech.(Polymer)	10,500/-
19	Ms. Aishwarya Badiger	First	B. Tech.(Foods)	10,500/-
20	Mr. Anvay A. Patil	First	B.Tech.(Polymer)	10,500/-
21	Ms. Arpita A. Nandy	Second	B. Tech.(Oils)	15,000/-
22	Mr. Parth N. Vaidya	Second	B. Tech.(Oils)	15,000/-
23	Mr. Lisan B. Shaikh	Second	B. Tech.(Dyes)	15,000/-

24	Mr. Varad V. Agarkar	Second	B. Tech.(Dyes)	15,000/-
25	Mr. Omkar P. Hundekari	Second	B.Tech.(Coating)	10,500/-
26	Ms. Saumya R. Misra	Third	B.Tech.(Polymer)	15,000/-
27	Ms. Nairiti J. Sinha	Third	B.Tech.(Polymer)	15,000/-
28	Ms. Pooja V. Sharma	Third	B. Tech. (Foods)	15,000/-
29	Ms. Neha D. Arolkar	Third	B. Tech. (Oils)	15,000/-
30	Ms. Monali N. Basutkar	Third	B.Tech.(Polymer)	15,000/-
31	Mr. Manish R. Gore	Final	Pharmacy	15,000/-
32	Ms. Shreya S. Mehta	Final	Pharmacy	15,000/-
33	Ms. Nikita V. Parab	Final	Pharmacy	15,000/-
34	Ms. Ketaki M. Deshpande	Final	Pharmacy	15,000/-
35	Ms. Vidhi D. Khanna	Final	Pharmacy	15,000/-
36	Ms. Prajakta A. Pednekar	Final	Pharmacy	15,000/-
37	Ms. Nikita A. Palekar	Final	Pharmacy	15,000/-
38	Ms. Gauri G. Karve	Final	Pharmacy	10,500/-
39	Ms. Nivedita U. Hegdekar	Final	Pharmacy	10,500/-
40	Mr. Shibhan N. Fangari	Final	Pharmacy	6,000/-
41	Ms. Urvi N. Nerurkar	Third	Pharmacy	15,000/-
42	Ms. Pranjali P. Kanvinde	Third	Pharmacy	15,000/-
43	Mr. Kashish H. Shah	Third	Pharmacy	15,000/-
44	Mr. Paritosh K. Chandwade	Third	Pharmacy	15,000/-
45	Ms. Nehal M. Shah	Third	Pharmacy	15,000/-
46	Ms. Madhura D. Rege	Third	Pharmacy	15,000/-
47	Ms. Aarti D. Pandit	Third	Pharmacy	15,000/-
48	Ms. Disha P. Prabhu	Third	Pharmacy	15,000/-
49	Mr. Ashutosh A. Dikshit	Third	Pharmacy	15,000/-
50	Mr. Swapnil S. Sheth	Third	Pharmacy	10,500/-
51	Ms. Khyati R. Gohil	Second	Pharmacy	15,000/-
52	Ms. Sneha R. Rathi	Second	Pharmacy	15,000/-
53	Ms. Aishwarya A. Patil	Second	Pharmacy	15,000/-
54	Ms. Sonalika A. Bhattacharjee	Second	Pharmacy	15,000/-
55	Ms. Shruti A. Dumbre	Second	Pharmacy	15,000/-
56	Ms. Maitreyi M. Oka	Second	Pharmacy	15,000/-
57	Mr. Tarun N. Bhatia	Second	Pharmacy	15,000/-
58	Ms. Dishita R. Pathare	Second	Pharmacy	10,500/-
59	Mr. Harsh R. Priya	Second	Pharmacy	10,500/-
60	Ms. Bhakti B. Jain	Second	Pharmacy	10,500/-

5.1.7 What percentage of students receive financial assistance from state government, central government and other national agencies (Kishore Vaigyanik Protsahan Yojana (KVPY), SN Bose Fellow, etc.)?

50% of Students from reserve Categories receives financial assistance in the form of total annual fee waiver and meritorious students from all the category gets state governments and central government scholarships as the government norms.

5.1.8 Does the university have an International Student Cell to attract foreign students and cater to their needs?

There is no formal international students cell in existence to admit foreign students in the institute on a regular basis. However, we have international students presently enrolled in some of the PG courses.

Academic Year 2014-15

Sr. No.	Course	No. of Students	Nationality
1.	M. Tech. in Fibres & Textile Processing Technology	2	Ethiopia
2.	M. Sc. in Textile Chemistry	1	Ethiopia
3.	Ph. D. (Tech.) in Fibres & Textile Processing Technology	1	Ethiopia

Academic Year 2015-16

Sr. No.	Course	No. of Students	Nationality
1.	M. Tech. in Dyestuff Technology	2	Ethiopia
2.	M. Tech. in Fibres & Textile Processing Technology	3	Ethiopia

5.1.9 Does the university provide assistance to students for obtaining educational loans from banks and other financial institutions?

University provides all necessary help along with the recommendations for availing educational loans from Banks/financial institutions whenever required.

5.1.10 What types of support services are available for

- Overseas students (Dean-AP)
- Physically challenged / differently-abled students (Dean-Infra)
- SC/ST, OBC and economically weaker sections
These students have the benefit of tuition fee waiver schemes.
- Students participating in various competitions/conferences in India and abroad

TA gives students representing the institute partial reimbursement of transportation and accommodation costs. In the last four year, a significant number of students were supported through TEQIP.

- Technical Events – (TEQIP-TA)
- Health centre, health insurance etc. - (F&A)
- Skill development (spoken English, computer literacy, etc.) Dean-AP & TEQIP
- Performance enhancement for slow learners – TEQIP, UGC Scheme.
- Exposure of students to other institutions of higher learning/ corporates/business houses, etc – (Departmental faculties, TEQIP)

The TEQIP office and Technological Association organizes various seminars to educate students about opportunities for higher education. We also invite eminent speakers from various business houses and industries to share their experiences with the students.

- Publication of student magazines -

The Technological Association publishes two magazines. The technical magazine, The Bombay Technologist is being published for more than 60 years. The non-technical magazine, The Spirit of ICT, is published online.

5.1.11 Does the university provide guidance and/or conduct coaching classes for students appearing for Civil Services, Defense Services, NET/SET and any other competitive examinations? If yes, what is the outcome?

As a University engaged with technical development, teaching and research, the coaching for preparation of NET, SET and similar competitive examinations is not required, However, the students are always encouraged to appear on their own, if they desire.

5.1.12 Mention the policies of the university for enhancing student participation in sports and extracurricular activities through strategies / schemes such as

- additional academic support and academic flexibility in examinations

The students are permitted to appear for the exam at a later date after seeking prior permission, if they are representing the institute at a competitive event.

- special dietary requirements, sports uniform and materials
The Technological Association provides funds for the acquisition of sports uniforms and equipments for the students representing the institute at the state and national level.
- any other (please specify)
The Technological Association takes the responsibility of maintaining and developing the sporting facilities during the academic year.

5.1.13 Does the university have an institutionalized mechanism for students' placement? What are the services provided to help students identify job opportunities, prepare themselves for interview, and develop entrepreneurship skills?

Each department has a dedicated faculty member to work as placement co-ordinator. There is separate Institutional Training and Placement officer who takes care of placement of the students for inplant training and for final placement of the job.

5.1.14 Give the number of students selected during campus interviews by different employers (list the employers and the number of companies who visited the campus during the last four years).

List of Company visited for Campus Interview

Academic Year 2014-2015		
Sr. No.	Company Visited for Campus Interview	No. of Students selected
1.	DSM	1
2.	Technip	2
3.	SRF	1
4.	Galaxy Surfactants	1
5.	Alkyl Amines	1
6.	Reliance	8
7.	Technip	1
8.	Hikal Ltd	1
9.	Pyramid Engineering Solutions	2
10.	Black and Veatch	1
11.	GS EC	1
12.	Galaxy Surfactants	1
13.	UOP	2
14.	Pyramid Engineering Solutions	1
15.	Hikal Ltd	1
16.	Deepak Nitrite LTD	1

17.	Tecnimont ICB	1
18.	Hikal Ltd	1
19.	GS EC	1
20.	United Phosphorous Limited	1
21.	Tecnimont ICB	1
22.	Jacobs	1
23.	BASF	3
24.	ExxonMobil	1
25.	Deepak Nitrite LTD	1
26.	Dow Chemicals	1
27.	Alps Chemicals Pvt.Ltd	1
28.	Pidilite Industries	1
29.	Sudarshan Chemicals	1
30.	Virag International	1
31.	Bunge Oils Ltd.	1
32.	Johnson & Johnson	1
33.	Glen mark	1
34.	Pidilite Industries	2
35.	Sudarshan Chemicals	1
36.	Evaluser	1
37.	TATA Motors	2
38.	Asian paints	1
39.	Sudarshan chemicals	1
40.	Evalue serve	2
41.	Pidilite	6
42.	BEC Chemicals	2
43.	Welspun India Ltd	6
44.	UOP	2
45.	HOSPIRA	1
46.	BLACK AND VEATCH	1
47.	TCE	3
48.	TECHNIP	2
49.	Omniactive	1
50.	Petrofac	1
51.	Aker solutions	1
52.	Evalue serve	2
53.	Perkin Elmer	1

Academic Year 2013-2014		
Sr. No.	Company Visited for Campus Interview	No. of Students selected
1.	Piramal Enterprises, Mahad	3
2.	Mondelez International, Mumbai	2
3.	Evalueserve, Gurgaon	3

4.	Agilent Tech, Manesar, Gurgaon	1
5.	Mondelez International, Mumbai	1
6.	Ph.D at Dublin Institute of Technology, Ireland	1
7.	PGDM in Agribusiness Management at IIM, Ahmedabad	2
8.	Pepsico (India), Gurgaon	2
9.	Nestle India	1
10.	General Mills, Mumbai	1
11.	Cadbury India, Delhi	1
12.	Zytex	1
13.	Godrej India, Mumbai	1
14.	Mapro Foods, Wai	1
15.	Cipla	2
16.	Astik	1
17.	Heubach	1
18.	BASF	2
19.	Huntsman	4
20.	Metropolitan	1
21.	Lakhani Dyes	1
22.	Metropolitan	1
23.	Jasani Dyes	1
24.	Eskay Chemicals	2
25.	SI group India	1
26.	Daichi	1
27.	Indorama Synthetics	1
28.	Anchrom	1
29.	Lona	1
30.	Heubach	2
31.	Astik	1
32.	Galaxy Surfactants	1
33.	Prasol	1
34.	Colgate	1
35.	Meghmani Organics	1
36.	Pidilite	1
37.	Gharda	1
38.	Sohan Dyechem	1
39.	UPL	2
40.	Arvind Mills	1
41.	Raymonds	2
42.	Huntsman	2
43.	BTRA	1
44.	PEST College, Thane	1
45.	Mcleods Pharmaceuticals	1
46.	MT Educare Science Pvt Ltd	1
47.	Mcleods Pharmaceuticals	1

48.	Institute of Petrochemical Engineering	1
49.	IIT, Bombay	1
50.	St. Francis Institute of Technology	1
51.	Cipla Pharmaceuticals	1
52.	SealedAir Diversey	1
53.	ICT, Mumbai	1
54.	Crimson Interactive Pvt. Ltd.	1
55.	ICT, Mumbai	1
56.	Vedant Dyestuffs Intermediates Pvt. Ltd.	1
57.	Meuez Hest India Pvt Ltd.	1
58.	Louis drafus commodities	1
59.	Ruchi Soya Industries Ltd.	1
60.	Adani Wilmar	1
61.	Hospira	2
62.	Evalueserve	3
63.	Dr. Reddy's lab	1

Academic Year 2012-2013		
Sr. No.	Company Visited for Campus Interview	No. of Students selected
1.	Nestle India	1
2.	General Mills, India	1
3.	Mapro	1
4.	IIM Ahmedabad	1
5.	IFFCO, Dubai	1
6.	E value serve	1
7.	Cadbury India Pvt. Ltd.	2
8.	Pepsico India	1
9.	Synthite Industries Ltd.	1
10.	Technip	4
11.	BPCL	4
12.	HUL	1
13.	UOP	1
14.	RIL	14
15.	KBR	2
16.	Dr.Reddy's Laboratories Ltd	2
17.	Toyo	1
18.	UPL	2
19.	Galaxy Surfactants	1
20.	OPAL	2
21.	Godrej	1
22.	L&T	7
23.	TCE	3
24.	VVF	2

25.	Technip India Ltd.	1
26.	Cadbury India Ltd.	1
27.	UOP	1
28.	Greenyug LLC Speciality India Ltd.	1
29.	Galaxy Surfactant	1
30.	Synthite	1
31.	Greenyug LLC Speciality India Ltd.	1
32.	Metcem, Nigeria	1
33.	LD Commodities	2
34.	LD Commodities	
35.	Godrej	1
36.	K. D. Organics	1
37.	United Mud Chemicals	1
38.	Alpha Laval	2
39.	Cargill	1
40.	Adani Wilmar	1
41.	Muez Hest	1
42.	ITC	1
43.	Loreal	1
44.	Crompton Greaves	1
45.	Pitambari	1
46.	Muez Hest	1
47.	AADTT, Rabale, Navi Mumbai	1
48.	Pidilite Industries, Andheri	2
49.	Pidilite Industries, Andheri	
50.	Garware Wall Ropes Ltd., Pune	2
51.	Clariant India Ltd.,	1
52.	Jaysinth Chemicals, Mumbai	1
53.	Raymond Ltd., Jalgaon	2
54.	Raymond Ltd., Vapi	1
55.	Raymond Ltd., Chindwara	1
56.	Ahlstorm Fibrecomposites Pvt. Ltd., Kutch	1
57.	Welspun, Palghar	3
58.	Ctech Corporations, Mumbai	1
59.	Welspun, Silvasa	1
60.	Resil Chemical Pvt. Ltd., Bangalore	1
61.	Alok Industries Ltd., Vapi	1
62.	Ecolab, Rabale, Navi Mumbai	2
63.	Croda Chemicals, Kopar Khairane	1
64.	agilent	1
65.	Reliance Life Science	1
66.	biocon	3
67.	Abhay cortex Pvt. Ltd.	1
68.	Syngene	1
69.	Intas biopharma	1

70.	USV Ltd	1
71.	Reliance Life Science	1
72.	USV Ltd	1
73.	DSM	1
74.	Keva flavours	1
75.	Urmi flavours	1
76.	Pidilite Industries Ltd.	1
77.	University of Akron	1
78.	Sudarshan Chemicals	1
79.	Pidilite Industries Ltd.	1
80.	Aditya Birla Group	1
81.	Vedant Dyestuffs	5
82.	Sudarshan Chemicals	1
83.	IIT, Delhi	1
84.	University of Syaracus, NY	1
85.	BASF	1
86.	Perkin Elmer	1
87.	Alfa Laval, Pune	1
88.	Nestle India, Gurgaon	2
89.	General Mills, Mumbai	1

5.1.15 Does the university have a registered Alumni Association? If yes, what are its activities and contributions to the development of the university?

Yes the university has a registered Alumni Association – UDCT Alumni Association (UAA). The Technological Association supports the UAA in organizing- several events on campus and consults the UAA with proposals to help the student community. We have collaboration with UAA to provide lab coats to students at a subsidized cost. We also organize Alumni meets for students to interact with Alumni.

UDCT Alumni Association (UAA) was formed in 1989 to foster fellowship and provide a forum to bring together the alumni of UICT, its past and present faculty members on a common platform and to promote the activities of the ICT in India and abroad and to institute awards, fellowships and grants. Several well wishers are members of UAA. All current students are invited to join UAA as well wiser members and participate in all activities. For the last 20 years, UAA has striven hard to achieve its objectives with valuable and timely support of the members, well wishers and through donations or membership fees. UAA currently has more than 3500 life members and 14 Patron members. The main objectives of UAA are:

1. Providing direct financial assistance to ICT :

- To support infrastructure development of the institute
- To support student activities along with Technological Association
- To support needy students
- To provide books in special areas such as management

2. Enhancing studentship at ICT :

- Sponsoring factory visits
- Arranging lectures, seminars, symposia, workshops
- Awarding best students of ICT for their meritorious performance
- Encouraging, promoting, supporting providing, spreading and arranging for education and research in Chemical Technology, Chemical Engineering, Pharmaceutical Sciences and related I Basic Sciences, Management studies and related topics.
- The Post Graduate Diploma Course in Chemical Technology Management (CTM) for the Ph.D. students in ICT is fully supported by UAA

3. Organizing Institution level events :

- Instituting the UAA Dhirubhai Ambani Lifetime Achievement Award every year to the person who excels in the chemical field internationally.
- Organizing ICT Foundation Day celebrations
- Awarding UAA Distinguished Alumnus awards every year to three or four distinguished persons I for their contributions to teaching, research, industry, defence public/government
- UAA Annual Day celebrations
- Training and Placement Service to current students and alumni.

4. Managing the Alumni Network :

- Managing the database of all alumni
- Increasing UAA Membership - Any present or past student faculty member or a well-wisher can I become a life member of the UAA. It has a membership of about 3500
- Maintaining UAA Website
- Issuing UAA bulletins
- Promoting ICT at national and international level

5. UAA Chapters

- UAA has local chapters in different cities in the country and also abroad in UK, USA, Singapore, Australia and Thailand.

5.1.16 Does the university have a student grievance redressal cell? Give details of the nature of grievances reported. How were they redressed?

The institute has Complaint Management Redressal System (CMRS), which is managed by the Technological Association. Students can send their grievances to cmrs@ug.ictmumbai.edu.in. These grievances are viewed by the General Secretary (TA) and are then reported to the respective Dean. In the past, we have received grievances related to irregularity in lecture schedules, unavailability of class time table and lack of cleanliness on campus and each of them were addressed with no recurrence of the complaint.

5.1.17 Does the university promote a gender-sensitive environment by (i) conducting gender related programmes (ii) establishing a cell and mechanism to deal with issues related to sexual harassment? Give details.

The institute has a gender-sensitive environment and we make sure of a healthy environment for everyone. Ladies Representative is a student's council member who is also the head of the cell which deals with the issues related to women empowerment. As of now, we haven't received any issues of sexual harassment.

The Ladies cell has organized various seminars which brings in prominent women from various fields who motivate the girls. "SYNERGY- Empowering Women" is the latest programme brought in by the cell which actively organizes dramas, workshops highlighting women empowerment.

5.1.18 Is there an anti-ragging committee? How many instances, if any, have been reported during the last four years and what action has been taken in these cases?

There is a institutional anti ragging committee in place for the university. There are no ragging cases reported in institute for last four year.

5.1.19 How does the university elicit the cooperation of all its stakeholders to ensure the overall development of its students?

The institute provides for the creation of the students council to represent students

needs to the management. It creates committees with representation from staff, faculty and students to ensure that all the stake holders contribute to the development of the institute.

5.1.20 How does the university ensure the participation of women students in intra- and inter-institutional sports competitions and cultural activities? Provide details of sports and cultural activities where such efforts were made.

The Technological association organizes special events for women in order to encourage them to participate. These include events in football, cricket, basketball, throwball and volleyball. Additionally, dance competitions are organized to promote participation from women. They are provided with facility of Ladies common room where they can store sporting equipment as well as books and can change into their sporting uniforms or dance costumes.

5.2 Student Progression

5.2.1 What is the student strength of the university for the current academic year? Analyse the Programme-wise data and provide the trends for the last four years.

Student Progression	%
UG to PG*	50
PG to M.Phil.*	NA
PG to Ph.D.	60-70
Ph.D. to Post-Doctoral	10
Employed by the time of convocation	
• Campus selection	95
• Other than campus recruitment	3

5.2.1 What is the programme-wise completion rate during the time span stipulated by the university?

For Under Graduate

Degree	Branch	Entry Year July	Total	4 Yr Pass	% 4 Yr Pass	5 Yr Pass	% 5 Yr Pass
B. Chem.		2010	92	83	90.21	5	5.4
B. Pharm.		2010	25	21	84	0	0
B.Tech.	Dyes	2010	21	15	71.43	3	14.29
	Textile	2010	34	27	79.4	2	5.88
	Foods	2010	20	17	85	2	10

	OILS	2010	17	15	88.24	1	5.88
	Pharma	2010	20	19	95	0	0
	Polymer	2010	18	15	83.33	2	11.11
	Coatings	2010	17	15	88.24	1	5.88
B. Chem.		2011	77	75	97.4	-	-
B. Pharm.		2011	28	28	100	-	-
B.Tech.	Dyes	2011	20	20	100	-	-
	Textile	2011	32	28	87.5	-	-
	Foods	2011	16	16	100	-	-
	OILS	2011	17	17	100	-	-
	Pharma	2011	19	18	94.74	-	-
	Polymer	2011	16	16	100	-	-
	Coatings	2011	15	15	100	-	-

For Post Graduate

Degree	Branch	Entry Year July	Total	2 Yr Pass	% 2 Yr Pass	3 Yr Pass	% 3 Yr Pass
M. Chem.		2012	28	25	89.29	-	-
M. Pharm.	MNP	2012	5	5	100	-	-
	PharmaCeutics	2012	7	6	85.71	-	-
	Pharmaceutical Chemistry	2012	6	6	100	-	-
M.Tech.	Dyes	2012	3	3	100	-	-
	Textile	2012	18	18	100	-	-
	Foods	2012	11	11	100	-	-
	oils	2012	9	9	100	-	-
	pharma	2012	4	3	75	-	-
	polymer	2012	18	15	83.33	-	-
	coatings	2012	10	10	100	-	-
	bioprocess technology	2012	33	32	96.97	-	-
	food biotechnology	2012	10	10	100	-	-
	perfumery	2012	5	5	100	-	-
	greentech	2012	28	28	100	-	-
M.E.	plastic engg	2012	5	5	100	-	-
M.Sc.	chemistry	2012	21	20	95.24	-	-
	textile chemistry	2012	16	16	100	-	-
	engg mathematics	2012	5	3	60	1	20
							-
M. Chem.		2011	30	29	96.67	-	-
M.	mnp (13)	2011	5	4	80	-	-

Pharm.							
	pharmaceutics (14)	2011	6	6	100	-	-
	pharmaceutical chemistry (12)	2011	6	5	83.33	-	-
M.Tech.	dyes (15)	2011	4	4	100	-	-
	textile	2011	16	15	93.75	-	-
	foods	2011	5	5	100	-	-
	oils	2011	6	6	100	-	-
	pharma	2011	1	0	0	1	100
	polymer	2011	18	18	100	-	-
	coatings	2011	5	5	100	-	-
	bioprocess technology	2011	27	23	85.18	1	3.7
	food biotechnology	2011	10	9	90	1	10
	perfumery	2011	5	5	100	-	-
	greentech (104)	2011	28	26	92.86	-	-
M.E.	plastic engg (42)	2011	4	4	100	-	-
M.Sc.	chemistry (102)	2011	20	19	95	-	-
	textile chemistry (103)	2011	11	11	100	-	-
	engg mathematics (107)	2011	6	4	66.67	-	-
M. Chem.		2010	28	26	92.86	-	-
M. Pharm.	mnp (13)	2010	10	10	100	-	-
	pharmaceutics (14)	2010	0	0	0	-	-
	pharmaceutical chemistry (12)	2010	0	0	0	-	-
	medicinal chemistry (101)	2010	10	10	100	-	-
	ddt (43)	2010	9	9	100	-	-
M.Tech.	dyes (15)	2010	0	0	0	-	-
	textile	2010	10	10	100	-	-
	foods	2010	5	5	100	-	-
	oils	2010	4	4	100	-	-
	pharma	2010	5	4	80	-	-
	polymer	2010	5	4	80	-	-
	coatings	2010	3	3	100	-	-
	bioprocess technology	2010	23	23	100	-	-
	food biotechnology	2010	10	10	100	-	-
	perfumery	2010	5	5	100	-	-
	greentech (104)	2010	12	11	91.67	-	-
M.E.	plastic engg (42)	2010	8	7	87.5	1	12.5
M.Sc.	chemistry (102)	2010	17	15	88.24	-	-
	textile processing (103)	2010	10	9	90	-	-

5.2.2 What is the number and percentage of students who appeared/ qualified in

examinations like UGC-CSIR-NET, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT / Central / State services, Defense, Civil Services, etc.?

Year	Examination Body	Name of the Examination	No. of Successful Students
2014-15	GATE	GATE	92
2013-14	GATE	GATE	81
2012-13	GATE	GATE	78
2014-15	Others	CSIR - National Eligibility Test - DEC - 2014	1
2013-14	Others	CSIR - National Eligibility Test - JUN - 2013	2
2012-13	Others	CSIR - National Eligibility Test - DEC - 2012	2
2012-13	Others	UGC - National Eligibility Test - DEC - 2012	2
2012-13	Others	CSIR - National Eligibility Test - JUN - 2012	2
2013-14	State Public Service Commission	MPSC	2
2013-14	UPSC	UPSC - Indian Revenue Services - 2013	1
2012-13	UPSC	UPSC - Indian Revenue Services - 2012	1
2012-13	State Public Service Commission	MPSC	1

5.2.3 Provide category-wise details regarding the number of Ph.D./ D.Litt./D.Sc. theses submitted/ accepted/ resubmitted/ rejected in the last four years.

The following table shows year-wise records of the Ph. D thesis accepted for the award of Ph. D degree in Technology and Science. There was no candidate whose thesis was rejected or resubmitted during last four years.

Year	SC	ST	VJNT	SBC	OBC	General
2014-15	14	2	2	2	21	48
2013-14	9	1	2	-	11	67
2012-13	5	1	2	-	9	63
2011-12	1	1	3	1	7	41

5.3 Student Participation and Activities

5.3.1 List the range of sports, cultural and extracurricular activities available to students. Furnish the programme calendar and provide details of students'

participation.

July	Week 1	
	Week 2	-UDCT Alumni Association Student Representative Meeting
	Week 3	
	Week 4	
August	Week 1	-Orientation for Freshers' - Fun filled activities for Freshers'
	Week 2	-Independence Day Celebrations - Fun filled activities for Freshers'
	Week 3	- Fun filled activities for Freshers'
	Week 4	- Fun filled activities for Freshers' -Monsoon Night – A musical event organized by the Music Club -Freshers' main event
September	Week 1	
	Week 2	-Rakhi Making -Change of Guards Ceremony for the Student Council 2014-2015.
	Week 3	
	Week 4	-Manthan Event - 'Ka- Kavitecha'
October	Week 1	
	Week 2	-Vortex 2014 – The ChemFest of ICT -Innovation Workshop organized by E-Cell
	Week 3	
	Week 4	-Unity Day Celebrations
November	Week 1	
	Week 2	-World Education Day - Arts Event – Back to School -Technical Writing Seminar – Bombay Technologist
	Week 3	
	Week 4	
December	Week 1	
	Week 2	
	Week 3	
	Week 4	-Manthan Event "Aarthik Aatankwad"- Girish Jhakotiya
January	Week 1	- Ballroom Dancing Workshop - Funtech events (Sports and Informals)
	Week 2	-Faculty Night -Art and Literary events -Funtech Events (Sports and Informals)

	Week 3	-Funtech Main Event -Drama Night -Literary Events
	Week 4	-Republic Day Celebrations

5.3.2 Give details of the achievements of students in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. during the last four years.

Year	Name of the Event	Position	Level
2014-2015	Inter-Collegeite Technical Paper Presentation Competition by NSS-UMIT	1	State Level
2014-2015	Inter-Collegeite debate at BIOMOSAIC 2015 Wilson College, Mumbai	1	State Level
2014-2015	National Level Technical Paper Presentation Competition by team TRINITY, D.J. Sanghvi College of Engineering	1	State Level
2014-2015	Poster Presentation Competition at Chemergence, TSEC, Mumbai	1	National
2014-2015	Chemical Quiz at Chemergence, TSEC, Mumbai	1	National
2013-2014	Dance Competition by Pratimbimb 2013, VJTI, Mumbai	1	State Level
2014-2015	Global Textile Congress 2015-Paper Presentation	1	International
2014-2015	National Level Technical Paper Presentation Competition by Vastra 2015, VJTI	1	National
2014-2015	National Level Athletics-Shotput, Enthusia, VJTI	1	National
2014-2015	National Level Athletics-Discuss Throw, Enthusia, VJTI	1	National
2014-2015	National Level-badminton, Enthusia, VJTI	1	National
2013-2014	National Level-badminton, Enthusia, VJTI	1	National
2014-2015	National Level-badminton, Lakshya, SIES, Mumbai	1	National
2014-2015	National Level-badminton,SKORE, K.J. Somaiya College , Mumbai	1	National
2014-2015	National Level-Chess Competition, Spree, BITS Pilani, Goa	1	National
2013-2014	National Level Volleyball Competition, KEM, Mumbai	1	National
2013-2014	OYCE 2014, Paper Presentation	1	National
2014-2015	OYCE 2015, Paper Presentation	1	National

5.3.3 Does the university conduct special drives / campaigns for students to promote heritage consciousness?

Following drives were conducted by the institute to promote heritage consciousness:

1. “Adopt a Village” – This was a social drive conducted under AWAAZ, Manzar where two villages named Dhangarwadi and Shiravli were adopted and various activities were conducted which enhanced the essence of heritage in the students.
2. “Clean up drive” – Clean up drive was conducted at Sanjay Gandhi National Park and Juhu beach. Large number of students actively helped to clean up these places which are a part of Mumbai’s rich heritage.
3. “Hariyali drive” - A drive under VORTEX 14 was conducted to preserve the natural beauty at places which mark the wide heritage of the country at Bhavale Lonal on Thane-Nashik highway. Plantation and irrigation enhancement systems were put up by the students.





5.3.4 How does the university involve and encourage its students to publish materials like catalogues, wall magazines, college magazine, and other material? List the major publications/ materials brought out by the students during the last four academic sessions.

The institute runs various programs like the Technical Education Quality Improvement Program and the Bombay Technologist Undergraduate Research Program, wherein students are encouraged to take up projects in the various labs in the institute. These are year long programs where students can work not just during college but also in the summer vacation and over weekends during the course of the semester. The students are also given the facility of an in-house technical journal, The Bombay Technologists to encourage them to write scientific articles. Additionally, we also conduct seminars and workshops on technical writing, helping the students to improve the quality of their research articles.

Bombay Technologist Publication 2013

[Chitosan: A Biopolymer for Skin Regeneration](#)

Malhar Khakharia, Vidhi Khanna

[Comparative study of simulation of incompressible two-dimensional laminar Duct flow in ANSYS FLUENT™ and MATLAB™](#)

Makrand Khanwale

Production of Biodiesel from waste cooking oil

Dipak Dadaso Pukale

A hope for vision: Gene-replacement therapy for RPE65 associated Leber's Congenital Amaurosis

Manish Gore, Nivedita Hegdekar

Synthesis of Biodiesel from Palm Fatty Acid Distillate

Tarun Kataria

Organ-On-A-Chip -A replacement to animal testing

Shreya Mehta, Krushali Powale

Strengthening of Security Paper

Tanmay Jain, Karan Bhangaonkar

Resveratrol

Abhimanyu Joshi, Pooja Sharma

Self Assembly of Block Copolymers and its applications in Drug Delivery

Siddhi S. Hate

Polymers for Solar Energy Storage

Aman Tandon

Volume 64, Year: 2014

[Photo-Fenton Oxidation Of Azo Dyes In Textile Wastewaters In The Presence Of PDF Fe/ Ac And Fe-Tio₂/ Ac Catalysts](#)

Rohit Nagargoje, Suheyda Atalay, Gulin Aytimur Ersoz, Burcu Palas

[Heat Transfer And Pressure Drop Characteristics Of Intensified Tubular Glass PDF Reactor](#)

Arjun Gopal, Vivek Ranade

[Special Theory Of Relativity And Relativistic Thermodynamics PDF](#)

Shantanu Phadke

[Shellac For Film Formation And Its Modification For Enhancement Of Properties](#) PDF

Ajay Dhawale

[Functionalization Of Poly \(Ether Sulfone\) \(PES\) And Polysulfone \(PSf\) Membrane](#) PDF

Vivek Subramanian, Omkar Gupte

[Inhibition of DPP-IV: A New Therapeutic Approach For The Treatment Of Type 2 Diabetes](#) PDF

Khushboo Kapadia, Gauresh Somani, Sadhana Sathaye

[Possible links between Diabetes Mellitus and Alzheimer's disease](#) PDF

Tarun Bhatia, Sonalika Bhattacharjee

[Biopreservation Of Food Using Bacteriocins, Bacteriophages And Endolysins](#) PDF

Spardha Jhamb

[A Step Ahead In Cancer Treatment: Carbon Nanotubes](#) PDF

Srushti Sodha

[Targeted drug delivery using magnetic nanoparticles: A Review](#) PDF

Rahul Lalge, Sneha Rathi

[Recent Advances in Drug Delivery To Posterior Eye](#) PDF

Omkar Kulkarni, Harsh Priya

[Piezo- Future's power pack](#)

Aakanksha Mishraa

Volume 65, Year: 2015 (Current Volume)

[Piezo- Future's power pack](#) PDF

Aakanksha Mishraa

[Biomaterials for corneal repair and regeneration](#) PDF

Anvay Patil, Khyati Gohil

[Self Healing Smart Polymers: Insight and Applicability In Aerospace Industry](#) PDF

Foram Prajapati, Neil Chavan, Shrirang Chhatre

[A Review on the Applications of Self Regenerating Catalysts PDF](#)

Ronak Upadhyay, Shaaz Khatib, Atmin Parekh

[Shale Gas: The future fuel: A Review on its Practicality and Viability](#)

Foram Prajapati, Neil Chavan, Shrirang Chhatre, Sachin Poduval

5.3.5 Does the university have a Student Council or any other similar body? Give details on its constitution, activities and funding.

The Technological Association of the Institute of Chemical Technology (TA-ICT) is the students' council of ICT. The vice-chancellor is the ex-officio president of the TA and appoints a senior faculty member as its Vice-President (VP-TA). It consists of a 23-member team of students. These students are either third year undergraduate students or post-graduate students. The General Secretary heads the student team. A detailed list of the students and their responsibilities is given below: (2014-15)

Sr. No.	NAME	POST	CLASS	RESPONSIBILITIES
1.	Siddhant Prabhu	General Secretary	Third Year - UG	Overall Head of all students activities - Reports to VP(TA) for Cultural and Sports activities - Reports to Dean (SA&HRD) and VC for students' general non-academic grievances - Reports to Dean (AP) and VC for students' academic grievances
2.	Akshata Kulkarni	Cultural Secretary	Third Year – UG	All cultural events & helping GS in organisation + FunTech coordinator
3.	Shantanu Nikam	Federal Treasurer	Third Year – UG	All financial Management of ALL EVENTS with the help of Festival Committee and Sponsorship Committee.

4.	Sanket Bindra	Sponsorship Secretary	Third Year – UG	Overall Sponsorship Head, will decide Sponsorship Committee with the help of corresponding Festival coordinators + GS+ VP. All sponsorship request letters have to be countersigned by this Secretary.
5.	Mihir Bhagat	Bombay Technologist Secretary	Third Year – UG	BT Editor + Journal Secretary (Design + Finance etc. with the help of corresponding Secretaries)
6.	Preshita Desai	Bombay Technologist Secretary	Ph.D	BT Editor + Journal Secretary (Design + Finance etc. with the help of corresponding Secretaries)
7.	Vijayalakshmi Natarajan	UDCT Alumni Association Secretary	Third Year – UG	Alumni Association meets and organization of events which brings together the alumni, faculty, students and staff
8.	Saurabh Patankar	UDCT Alumni Association Secretary	Ph.D	Alumni Association meets and organization of events which brings together the alumni, faculty, students and staff
9.	Vaibhav Padale	Public Relations Secretary	Third Year – UG	Internal PR Co-Heads for all events + Maintaining Students Communication network via SMS & Email & Students Representative Cell
10.	Juhi Chaudhari	Art Secretary	Third Year – UG	All Art-related activities (Fine Arts) + helping in the Internal Art Design for all festivals
11.	Sonalika Bhattaccharjee	Design Secretary	Third Year – UG	Designing of all posters etc. It is imperative that outsourcing of design is NOT allowed
12.	Tarun Bhatia	Literary Secretary	Third Year –	Literary events throughout the year + Event Head of Literary events in various festivals

			UG	+ Spirit Content (Chief Editor of Spirit along with Issue Editors)
13.	Chivukula.D. Swetha	TA Webmaster	Third Year – UG	Management of the Institute Website and updating it on regular basis.
14.	Prateeti Ugale	Music Secretary (Dance)	Third Year – UG	Music Club (Dance) + helping in Musical events of ICT + Event Co-Head related to music in all festival
15.	Harsh Vedant	Music Secretary (Instrumental and Vocals)	Third Year – UG	Music Club (Instrumental & Vocal) + helping in Musical events of ICT + Event Co-Head related to music in all festival
16.	Omkar Kulkarni	Manthan Secretary	Third Year – UG	Organising Manthan events (budget care should be taken)
17.	Gayatri Pahapale	Ladies Representative	Third Year – UG	Ladies' Representative + Hospitality for all Events
18.	Vikram Khanna	Vortex Secretary	Third Year – UG	VORTEX coordinator
19.	Chandrakanth Gadipelly	Vortex Secretary	Ph.D	VORTEX coordinator
20.	Tirth Patel	Manzar Secretary	Third Year – UG	Manzar COORDINATOR
21.	Shardul Thakkar	Manzar Secretary	Third Year – UG	Manzar COORDINATOR
22.	Aman Chedda	Sportsaga Secretary	Third Year - UG	Sports Activities of ICT + Sportsaga Coordinator
23.	Nishant Rayewar	Sportsaga	Third Year -	Sports Activities of ICT + Sportsaga

		Secretary	UG	Coordinator
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The students' council organizes sports, cultural and technical events throughout the academic year. These events are funded from the cultural, extra-curricular and sports fees collected from the students and also from the support of external sponsors and alumni.

5.3.6 Give details of various academic and administrative bodies that have student representatives on them. Also provide details of their activities.

1. The Exam. Time-Tables committee – The General Secretary is a part of this committee and coordinates with the examination department to decide the timetable for the Mid-Semester examinations only.
2. Students' Welfare – The General Secretary, Cultural Secretary and the Sports Secretary are a part of this committee and organize activities in order to ensure an overall development of the student.
3. Women's cell, Cell to Eliminate Sexual Harassment – The Ladies' Representative, a member of the Student Council ensures that women are equally involved in all the activities being held in the campus.
4. Cultural Activity – The General Secretary, Cultural Secretary and the Ladies' Representative are a part of the Cultural Activity committee and organize several cultural events throughout the year.
5. Anti-ragging – The General Secretary is a member of the committee and is responsible to notify any such behavior to the authorities.
6. Canteen Committee – The General Secretary is a member of the Canteen committee and can give his suggestions in order to maintain the quality and hygiene of the food served and the infrastructure present.

CRITERION VI: GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

6.1.1 State the vision and the mission of the university.

Institute of Chemical Technology

Vision

We shall perennially strive to be a vibrant institute with continuously evolving curricula to brighten the future of the chemical, biological, materials and energy industries of the nation, and rank amongst the very best in the world through active participation and scholarship of our faculty, students and alumni. We shall be creators of sprouting knowledge and design cutting-edge technologies that will have the greatest impact on society and benefit mankind at large.

Mission

We shall generate and sustain an atmosphere conducive to germinating new knowledge at every available opportunity. The education we shall impart will enable our students to devise new solutions to meet the needs of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources. Our endeavours, while extending well beyond the confines of the classroom, will aim to enhance public welfare and our attempts to disseminate knowledge will spread to a greater multi- and cross-disciplinary platform to conduct research, discovery, technology development, service to industry and entrepreneurship, in consonance with India's aspirations to be a welfare state. We will team scientists and engineers with professionals in other disciplines to arrive at better solutions.

We will provide all our students with a strong foundation to encourage them to be our ambassadors in the professional activities that they choose to undertake in service of society at national and international levels. Through our vision, we will serve the profession and society and strive to reach the summit as a team, and ultimately serve as role models to the younger generation.

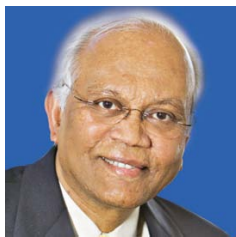
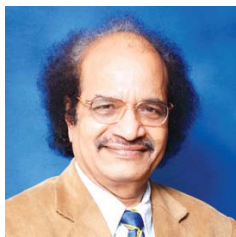





6.1.2 Does the mission statement define the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, the institution's tradition and value orientations, its vision for the future, etc.?

The ICT's mission statement accurately represents its main objectives, as a 'Centre of Education and Innovation' of imparting education of highest quality possible to make its graduates relevant to the needs of the society and conducting research to promote and nurture excellence that would be useful the mankind in general and the country, in particular. Because of very focussed research areas, committed faculty members, and talented students the ICT has grown to become a premier Institute (deemed university) devoted to education, training, research and industrial collaboration in chemical engineering, chemical technology, applied chemistry, pharmacy, biotechnology and bioprocessing.

6.1.3 How is the leadership involved (i) in ensuring the organization's management system development, implementation and continuous improvement? (ii) in interacting with its stakeholders? (iii) in reinforcing a culture of excellence? And (iv) in identifying organizational needs and striving to fulfil them?

The Board of Management is the principal organ of Management and Principal Executive Body of ICT. The Board is made of eminent persons, administrators, academics and faculty representations. The quality of the Board decides the quality of management of the Institute. It is with the visionary leadership of Directors, such as, Padmavibhushan Professor M M. Sharma, and Padmabhushan Professor J B Joshi, and current Chancellor, Padmavibhushan Dr. R A Mashelkar, the Institute and its faculty have developed a culture of excellence, dedication and self-less service for continuous improvement in the functioning of the ICT.

Current Board Members

	<p>Padmavibhushan Dr. R. A. Mashelkar, FRS,FNA, Chancellor CSIR Bhatnagar Fellow and President Global Research Alliance Former Director General CSIR and Secretary, DSIR, GOI National Chemical Laboratory, Pune.</p>
	<p>Padmashree Professor G. D. Yadav, FNA Vice-Chancellor, Chairperson R.T. Mody Distinguished Professor; J.C. Bose National Fellow (DST-GOI) Institute of Chemical Technology, Mumbai.</p>
	<p>Padmashree Dr. Gyan Chandra Mishra Member (nominated by the Chancellor) Director, National Centre for Cell Science, Pune</p>
	<p>Shri S. M. Mokashi Member (nominated by the Chancellor) Industrialist and Distinguished Alumnus, Mumbai.</p>
	<p>Shri A. S. Dani Member (nominated by the Chancellor) Vice- Chairman, Asian Paints Ltd. Mumbai.</p>
	<p>Dr. Sanjay Chahande Member (Nominee of State Govt.) Principal Secretary, Deaprtment of Higher and Technical Education, Govt. of Maharashtra.</p>
	<p>Dr. S. K. Mahajan Member (Nominee of State Govt.) Director, Technical Education & SPA Directorate of Technical Education, Govt. of Maharashtra</p>

	<p>Professor M. Barma Member (Nominee of UGC) Director, Tata Institute of Fundamental Research (TIFR).</p>
	<p>Professor M. D. Teli Member (Senior Professor) Department of Fibres and Textile Processing Technology Institute of Chemical Technology, Mumbai.</p>
	<p>Professor P. R. Vavia Dean, Academic Programme Department of Pharmaceutical Science and Technology Institute of Chemical Technology, Mumbai.</p>
	<p>Senior Dean Institute of Chemical Technology, Mumbai.</p>
	<p>Smt. K. V. Marathe Member (Senior Associate Professor) Department of Chemical Engineering Institute of Chemical Technology, Mumbai.</p>
	<p>Professor (Smt.) S. S. Lele Secretary (Registrar) Department of Food Engineering and Technology Institute of Chemical Technology, Mumbai.</p>

The ICT makes all out efforts to interact with all its stake holders: Faculty, Staff, Students, Alumni, Industry and Society. All major Committees of the Institute have the faculty members as the decision making members with involvement of staff members wherever necessary. Because of the World Bank funded Technical education Quality Improvement Program (TEQIP), the Institute has been preparing itself continuously for meeting the challenges in all areas. The identification of strengths, weakness, opportunities and threats and their analysis is now a regular feature where ICT

management strives hard to find workable solutions. The entire growth of the ICT in the last decade has been driven by the actions identified by such analysis followed by remedial actions within the resources available to the Institute. The result is transformation of the ICT, into a vibrant and invigorating institute, a symbiosis of academic excellence, culture, ethos, value systems, and an architect of new and useful knowledge, standing tall among all institutes of national importance.

The Technological Association (TA), established in 1951, is 23-member strong student body of ICT that is an interface between the faculty, management and students. This is presided by the Vice-Chancellor and a senior Faculty member as Vice President. All students' co-curricular and extra-curricular activities are organized by the clubs. The TA also addresses student grievances and serves as a link between the faculty members and the students. In general, the relationship of the students with faculty is very cordial.

ICT is also very blessed with very active partnership with its alumni, the major stakeholders of the ICT, because of the pride that they derive being the graduates of the Institute. UDCT Alumni Association (UAA), founded in 1989, has a current active membership of over 5000, and a major benefactor of the ICT. The UAA has an office in ICT itself and its office bearers proactively pursues the interests of ICT. The alumni are one of our greatest strengths and willing ambassadors with whom, ICT continuously engages itself on different fronts. The management of the ICT, has developed several means of engaging the students, faculty, staff and alumni as industry representatives, continuously to improve, evolve and innovate, to meet the challenges of the rapidly changing landscape of Technology. Even in the onslaught of IT and Mobile platforms, the excellence in research is pursued by ICT by attracting the best interested talent to the ICT.

6.1.4 Were any of the top leadership positions of the university vacant for more than a year? If so, state the reasons.

The top leadership positions of the ICT, were never vacant in the entire history of the Institute, right from the inception of the ICT, since 1933. Instead, the Institute always received right leadership at all positions. The faculty members have also shouldered administrative responsibilities with equal competence and effectiveness.

6.1.5 Does the university ensure that all positions in its various statutory bodies are

filled and meetings conducted regularly?

The ICT has developed its unique functioning because of ‘Unitary’ nature even as the Department of the University of Bombay. The autonomy conferred on the Departments in early eighties and the complete Autonomous status between 2003-2009 and since 2009, when it started functioning as a ‘Deemed University’ the Institute evolved all statutory bodies such as Management Board, Academic Council, Deans and HoDs, Planning and Monitoring Body, UG&PG Program committee, Research Committees, Advisory Committee, Controller of examination, Faculty Common Room, etc, which meet regularly and are conducted with open discussions. The Minutes of the discussions are recorded and a consensus is built for the implementation of the decisions.

The Governance of the Institute is through various Empowered Committees that report to the Board of Management

Sr. No	Committee	Function
1	Planning and Monitoring Board	Principal Planning Body of the Institute and is responsible for the monitoring of the development programs of the Institute. The Board advises the Board of Management and the Academic Council on policy decisions
2	Academic Council	It is the principal academic body of the institute and subject to the provision of the Rules, has the control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, co-ordination of research activities, examinations and tests within the institute.
3	Finance Committee	The Committee considers the annual accounts and financial estimates and submits them to the Board of Management for approval; The committee is empowered to fix limits of the total

		<p>recurring expenditure and the total nonrecurring-expenditure of the year based on the income and resources of the institute.</p> <p>It also considers fee structures and other changes decided by the administration</p>
4	Building and Works Committee	The Committee is responsible under the direction of the Board for construction of all major capital works in the Institute
5	Standing Committee on Administration (SCA)	The Committee recommends policies to be adopted by the institute with a view to have effective and efficient utilization of available man power, formulates and lays down guidelines, and policies ensuring healthy and harmonious employee relations
6	Deans & Associate Deans, Controller of Examination	<p>There are 4 Deans</p> <p>(i) Dean-Academic Programmes, (ii) Dean-Student and Alumni Affairs. Human Resource Development, (iii) Dean-Research, Consultancy Resource Mobilization, (iv) Dean-Infrastructure and Campus Development, Buildings,</p> <p>The Deans assists the Vice Chancellor in performing his duties. The Associate Deans assist the Deans</p>
7	HoDs	Each Department and Centre is headed by a Head, who is responsible for administration of the Department
8	Internal Quality Assurance Cell (IQA)	The Committee monitors the quality of academic program and research

9	Faculty Common Room	The decisions of the Board of Management are discussed in the faculty room meeting where every faculty member has the right to express his/her opinion. The meeting is held minimum four times in a year.
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6.1.6 Does the university promote a culture of participative management? If yes, indicate the levels of participative management.

ICT has evolved a system of Governance which has several bodies and Committees. The structure is shown below. Because of smaller number of faculty members and large of responsibilities, this structure ensures participation of every faculty member in one or more Committees. The participation in the functioning is voluntary and not imposed. It is, therefore, common to see even an Assistant Professor level faculty members actively pursuing the interests of the Institute.

The administration of the Institute is through a structure made of four Deans and 12 Heads of the Departments. The major administrative decisions are through a meeting of the Deans and HoDs which are held more frequently. **Each Dean chairs sub-committees for functioning of the Institute and has been empowered to take/recommend decisions to Vice Chancellor /Board**

ACADEMIC PROGRAMMES (AP)	HUMAN RESOURCE DEVELOPMENT (HRD)	RESEARCH CONSULTANCY AND RESOURCE MOBILIZATION (RCRM)	INFRASTRUCTURE AND CAMPUS DEVELOPMENT (ICD)	VICE PRESIDENT – TECHNOLOGICAL ASSOCIATION (VP-TA)
Admissions 1. PG Admission 2. UG Admission 3. Handbook	Faculty Support Staff Welfare : 1. Accident insurance 2. Health insurance 3. 2 sets of Uniforms for Class IV	Resource Collaborations, IPR and Technology Transfer	Campus Accommodation 1. Student and Wardens' Committee 2. Faculty	Cultural Activity

	<p>employees</p> <p>4. Training</p> <p>5. Travel Grant</p> <p>(Golden Jubilee/ NOCIL/ Dr. G.P. Kane)</p>			
Undergraduate Programmes	Grievances Redressal and Disciplinary Action Cell	Evaluation and Fellowship	<p>Campus</p> <p>1. Maintenance</p> <p>2. Beautification</p>	<p>Publications</p> <p>1. Bombay Technologist</p> <p>2. SPIRIT (ICT Patrika)</p>
<p>Postgraduate Programmes</p> <p>Additional PG courses :</p> <p>1. Diploma Course in Chemical Tech. Management (CTM)</p> <p>2. Certificate Course in Chemical Safety and Risk Management</p> <p>3. Corrosion Control</p>	<p>Legal Cell, Service Books Pension Cases and Tribunals</p> <p>Equal Opportunity Cell</p>		<p>Canteen and catering</p>	<p>Student Welfare and Mentorship</p>
<p>Academic Activities</p> <p>1. Academic Calendar</p> <p>2. Exam Time Table</p>	Anti-ragging	Extensive Services		

3. Lecture Schedule/ Classroom Allocation				
4. Visiting Faculty				
Examinations				
Unfair means in examinations and Vigilance squad			Campus Safety and Security	
Merit-cum-means Financial Assistanceship and Scholarship	Cell to Eliminate Sexual Harassment	Library	Material Procurement and Disposal	Student Academic Interface
	Support Staff activities and Magazine			
Publications - Annual Report/ Student Diary/ ICT Diary / Posters	Media publicity and IPC & Digitization			
Students' Feed back	Satkar Committee			
Research Colloquia				

6.1.7 Give details of the academic and administrative leadership provided by the university to its affiliated colleges and the support and encouragement given to them to become autonomous.

Since ICT is non-affiliating University, this point is not applicable to ICT.

6.1.8 Have any provisions been incorporated / introduced in the University Act and

Statutes to provide for conferment of degrees by autonomous colleges?

Since ICT is non-affiliating University, this point is not applicable to ICT.

6.1.9 How does the university groom leadership at various levels? Give details.

The ICT's Board of Management, has developed a mechanism of involving every stake holders in the functioning of the Institute. As a part of the future development and having people at the helm of the affairs, the ICT's team took conscious decision of the imparting necessary skills to the younger faculty of the Institute. In the last three years, under TEQIP project, the Institute had sent one third of its faculty members to Management Capacity Building Training in Indian Institutes of Management. A set of management program was separately designed for the entire faculty strength and major administrative staff members with Welingkar Institute of Management and Management School of Indian Institute of Technology, Bombay. As a result, every faculty members has gone through at least one Management Course. This strategy is ICT's succession plan for handing over the reins of the Institute, 10-15 years down in the future, to the well trained leaders in different areas. We hope that the seeds sown now will lead to greater returns in terms of further growth of the Institute. Each faculty member is encouraged to develop excellence in one or more areas and is provided support in the best possible way, within the constraints of the infrastructure and resources.

6.1.10 Has the university evolved a knowledge management strategy? If yes, give details. How are the following values reflected the functioning of the university?

Philanthropy, visionary leadership of then University of Bombay and active participation of the industry to create endowments for faculty positions and laboratories, and the support of the then Governor of the Province of Bombay, led to the foundation of the University Department of Chemical Technology on October 1, 1933 with the noble intention of advancing India's knowledge reserves in chemical science and technology. The Institute has grown to become **a premier (deemed) university devoted to education, training, research and industrial collaboration in chemical engineering, chemical technology, applied chemistry, pharmacy, biotechnology and bioprocessing.** The list of achievements of this great centre of

learning is voluminous and ever since its inception, the Institute has been a fertile breeding ground for some of India's most gifted minds.

Our major strength is in creating of knowledge in the frontier areas of research and dissemination of it where it can be applied, whether in industries or development of society. **The Institute's alumni have distinguished themselves in all walks of life, be it in industry, academia, government or public service in India as well as abroad. The strength of the Institute is leveraged to generate funds, to build tieups with other organizations and sharing resources.**

We continue to work quietly, sans the typical college atmosphere, impart high class education, and conduct research par excellence, having a direct relevance to solving societal problems and adding to quality of life. Research was incorporated as an integral part of the UDCT right from inception, and the first batch of students for the B. Sc. (Tech.)- a two-year post-B Sc. Course, with Textile Chemistry and Chemical Engineering as the branches, was admitted on 4th August, 1934. With the growth in demands for chemicals, drugs, polymers and materials after World War II, other branches of chemical technology embracing Foods and Drugs, Oils, Plastics, Paints, Varnishes, Intermediates and Dyes, Pharmaceuticals and Fine Chemicals, were added and these courses were later reorganized to give a distinct flavour to all branches of Chemical Technology. Birth of several industries was a direct result of UDCTs' activities. In 1951, Chemical Engineering branched out as a post-Inter Science four-year degree programme, B. Chem.Eng., which has been the most sought after ever since. The B.Sc. (Tech.) courses were converted into post-B.Sc. three-year courses in 1966 and finally further converted into B. Tech. programmes, which are post-HSSC (12th Standard) in 1998. Over time, we have added more specialized courses at Masters level and PhDs, in areas of more relevant, such Bioprocess Technology, Perfume and Flavor Technology, Green Technology, Food Biotechnology, and Pharmaceutical Technology in addition to Masters' programs in conventional core Chemical Technology, Chemical Engineering and Pharmacy. This growth indicates evolution of the Institute over time as a dynamic and continuously learning Institute.

Deemed University Status

The UDCT grew in stature over the years and was granted partial autonomy by the University of Mumbai in 1985, which was taken to the next echelon under the concept

of autonomy propagated by the University Grants Commission (UGC). Financial, academic and administrative autonomy was conferred during the Diamond Jubilee in 1993-1994 for a period of five years, which was extended for next 5 years in 1998, followed by another extension of five years. The University thought it appropriate to rename it as the University of Mumbai Institute of Chemical Technology (UICET) on 26 January 2002 to distinguish its academic programmes and accomplishments surpassing those of a typical University department. The UICET was granted full autonomy in June 2004 by the State of Maharashtra under the Technical Education Quality Improvement Programme (TEQIP) of the World Bank with complete assistance of the University. Upon a strong recommendation of the UGC through a peer review process, the autonomous institute status was finally converted in to a Deemed-to-be-University by the Ministry of Human Resource Development (MHRD), Govt. of India, on 12 September 2008; a strong recommendation was made that the ICT should be fully supported and its activities strengthened by the Government and the new (deemed) University should commence its functioning from academic year 2009-10. It is a unique Deemed University, with unparalleled record, funded by the State of Maharashtra, receiving various grants and projects from the UGC, DAE, DBT, DST, CSIR, ICMR, MFC, MOEF and other agencies including Indian and foreign industries. Several Centres of Excellence have been created through the support of central agencies, which have been mainly responsible to nurture quality in education and research. In a review of all deemed universities in the country, **the MHRD granted A grade to the ICT**, which is the only one in the State of Maharashtra along with three institutes - TIFR, TISS and CFRI, all of which are funded by the Central Government ministries. In the year

Elite Status and Centre of Excellence of Government of Maharashtra

Based on its stellar performance and national and international accolades, the ICT was declared as Elite Institute and Centre of Excellence by Government of Maharashtra on 20th April 2012 in the State Assembly, on par with national institutes of importance such as IITs, IISc and IISERs. This is a unique distinction in India for a state owned university of any kind and it speaks volumes about the sagacity of the government. It has been made possible through dedicated services, hard work and talent of our faculty, students, alumni and support staff. . Now as an Elite Institute, we would like to be an **INNOVATION UNIVERSITY**, in tune with modern concepts and contemporary

speed of creation and dissemination of knowledge; a new trinity based on expansion, inclusion and quality will be our soul. We will create new knowledge to solve the problems of chemical, biological, materials and energy industries in service of the nation and in turn the world.

The Institute's **strong multi-disciplinary research programmes** have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. The ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. All of them deem that ICT is different; distinctly different; incredibly different! They wonder how a small university department, with poor funding has managed to excel and that too without any public glare or publicity? **The magic mantra for our success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, and assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation. It is unsurprising thus that the Institute of Chemical Technology is ranked as the best chemical engineering and chemical technology teaching and research institute in India and now stands at number 4 in the world** in an annual ranking of chemical engineering programs conducted by the Georgia Institute of Technology, USA in January, 2012. Different authorities have duly recognized our spectacular performance over the years. The P. Rama Rao Committee appointed by the AICTE as well as the P. Rama Rao IIT Review Committee has recognized the ICT as the best post-graduate technical educational centre in India.

(i) Contributing to national development

Many faculty members of ICT **have been nation's most eminent scientists and engineers** who are working in the cutting edge research of their field, thereby ensuring that the knowledge is passed onto younger generation is based on pertinent, real experience and updated. Teaching without research is barren and bringing research

component in the teaching to solve real problems is in the DNA of the ICT's faculty. These researcher-cum-teachers are always on their toes and work longer hours to be on the forefront. The relevance of their research is important for development of appropriate Technology suitable for Indian conditions. Almost every faculty member of the ICT acts as consultants/advisors to industry with a strict condition that no institutional material facility is used for these industrial consultations. Research projects investigated in ICT's labs are of both academic sanctity and industrial relevance. The Products and processes developed in ICT's labs have eventually found place in the Indian Chemical Industries making many of them competitive in the international arena.

Almost one third of the alumni have started their own businesses, many of them first generation entrepreneurs, adding value to the national economy. The list of successful entrepreneurs has today's who is who in Chemical Industry. The Indian Institute of Management, Bangalore, after surveying a large number of industries in the country, had identified the ICT as the best on the basis of its contribution to the development of chemical and pharmaceutical industry. Our faculty and alumni have been presidents of several esteemed professional bodies such as Indian Institute of Chemical Engineers, Association of Food Scientists and Technologists, Oil Technologists Association, Colour Society; some of the regional centres of such bodies have been functioning from the premises of the Institute. Many of the faculty members and alumni, as members of Committees of DST, DBT, SERB and UGC, empowered boards, guide the research and development activities of the science and engineering in the country. Both, past and present, faculty members have put in tremendous efforts to support the research in other Institutes.

Several of our alumni have excelled themselves in life, attained positions of prominence and made us proud by their stellar achievements. Many have created unprecedented value for their companies through their ingenuity and hard work, and some of our alumni are famous CEOs or managing directors of the nation's and world's mega companies and organizations. Mr Mukesh Ambani and many of the top management structure of Reliance Industries Ltd., Dr. Anji Reddy from Reddy's Laboratory, Mr. Ashwin Dani of Asian Paints, Dr. K H Gharda of Gharada Chemicals and many more, had graduated from ICT.

List of Distinguished Alumni

Sr. No.	Name
1	Prof. M.M. Sharma
2	Dr. R.A. Mashelkar
3	Dr. A.V. Rama Rao
4	Dr. H.N. Sethna
5	Dr. B.D. Tilak
6	Mr. D.M. Trivedi
7	Mr. V.G. Rajadhyaksha
8	Mr. I.A. Modi
9	Dr. K.H. Gharda
10	Mr. C.V. Gogri
11	Mr. R.V. Gogri
12	Mr. N.K. Parekh
13	Mr. M.B. Parekh
14	Mr. N.S. Sekhsaria
15	Mr. B.S. Rajpurohit
16	Mr. P.R. Rastogi
17	Mr. U. Shekhar
18	Mr. Sudhir Patil
19	Mr. P.D. Kamat
20	Mr. J.R. Vyas
21	Mr. J.R. Shah
22	Dr. D.S. Patel
23	Mr. R.H. Mehra
24	Mr. Z.F. Lashkari
25	Mr. C.J. Bhumkar
26	Prof. K.D. Mukherjee
27	Dr. R.Y. Mantri
28	Prof. E.H. Daruwalla
29	Dr. N.V. Bringi
30	Dr. V.D. Shah
31	Mr. R.A. Bakshi
32	Dr. Haren S. Gandhi
33	Dr. B.S. Joshi
34	Mr. P.M. Patil
35	Prof. A.P. Kudchadkar

36	Mr. O.P. Malhotra
37	Dr. V. Srinivasan
38	Mr. R.T. Bandodkar
39	Mr. V.Y. Divekar
40	Mr. A.E. Ladhabhoy
41	Dr. M.V. Nimkar
42	Mr. K.L. Rathi
43	Mr. N.V. Bhagwat
44	Prof. S.B. Chandalia
45	Mr. Manoj H. Modi
46	Prof. G.D. Yadav
47	Prof. P.R. Kulkarni
48	Mr. N.R. Meswani
49	Mr. Y.M. Kothari
50	Mr. S.M. Mokashi
51	Dr. A.B. Pandit
52	Mr. Bipin M. Shah
53	Mr. D.G. Udas
54	Dr. Ramesh C. Awasthi
55	Mr. Vijay H. Jadhav
56	Mr. Satish M. Joshi
57	Mr. D. Srinivas
58	Dr. Prakash D. Trivedi
60	Prof. M.R. Baichwal
61	Prof. S.V. Sunthankar
62	Mr. D.K. Deshpande
63	Mr. A.R. Boob
64	Mr. Bharat Kamdar
65	Dr. R.B. Mitra
66	Prof. R.P. Iyer
67	Mr. N.V. Dhekne
68	Mr. A.A. Panjwani
69	Mr. Harshavardhan V. Bhawe
70	Mr. Ashvin J. Desai
71	Dr. (Mrs.) Deepa V. Bhajekar
72	Dr. Ashok B. Amin
73	Mr. Lalchand N. Gandhi

74	Mr. Madhukar A. Naik
75	Dr. Kishore M. Shah
76	Dr. N.M. Saraf
77	Mr. Anand K. Apte
78	Mr. Bharat I. Bhatt
79	Mr. S.R. Paranjape
80	Dr. Vivek V. Ranade
81	Dr. Ajit V. Sapre
82	Dr. Vinay C. Vora
83	Mr. Shrikant Deshpande
84	Mr. U.N. Nirgudkar
85	Mr. M.N. Chaini
86	Mr. L.R. Chadha
87	Mr. Y.H. Jhaveri
88	Mr. V.D. Sanghavi
89	Dr. Navnit H. Shah
90	Dr. Kishore Udipi
91	Prof. Roshan Shishoo
92	Prof. C. J.K. Henry
93	Mr. N.J. Deshmukh
94	Mr. S.P. Mali
95	Mr. P.P. Shah
96	Mr. A.D. Ingrole
97	Dr. R.G. Sardesai
98	Mr. S.B. Mody
99	Mr. Edward Menezes
100	Mr. S.S. Sarna
101	Shri Pandit Shrikrishna (Babanrao) Haldankar
102	Mr. Jagdeep S. Kochar
103	Dr. Ashish K. Lele
104	Prof. Samir S. Mitragotri
105	Dr. Raj Shah
106	Mr. U.M. Dewal
107	Mr. Sanjay S. Gaikwad
108	Mr. Chaitanya S. Joshi
109	Mr. Prasad P. Mantri
110	Mr. Vinod K. Mehra

111	Mrs. Pratibha S. Pilgaonkar
112	Mr. Sudhir D. Pilgaonkar
113	Ms. Maharukh T. Rustomjee
114	Mr. Siddharth A. Sikchi
115	Mr. Vibhu M. Sharma
116	Mr. .S.M. Vanarse
117	Mr. Ashish O. Mantri
118	Prof. Dhiren R. Thakker
119	Mr. Shyamsunder Bang
120	Prof. Ashok S. Sangani
121	Mr. Rakesh Bamzai
122	Prof. Shekhar S. Garde
123	Dr. KSMS Raghavarao
124	Dr. Saidas M. Ranade
125	Mr. Vaibhav B. Tidke
126	Dr. G.V. G. Rao
127	Dr. Shirish K. Sankhe
128	Ms. Susan Josi Champannoor
129	Mr. Shripal C.Gandhi
130	Prof. P.A. Ramachandran
131	Prof. A.M. Lali
132	Prof. S.S. Lele
133	Dr. Ram W. Sabnis
134	Mr. Sunil B. Ramanand

(ii) Fostering global competencies among students

We attract very talented students, both at undergraduate and post-graduate courses. After the graduation, almost 40% of the undergraduates are absorbed by the MS and PhD programs abroad, particularly in USA, with full scholarship. They compete at the global scale with students from other countries. It is the quality of the students who go to for higher studies that has built the reputation of ICT as the best Chemical Engineering Institute in India. The multinational companies in core chemical manufacturing industries also prefer the graduates, postgraduates and PhDs from ICT, because of the the training they receive in the Institute. Eventually the reputation of the Institute is decided by the performance of its graduates. We are very proud of the achievements of our alumni which continue to bring laurels to ICT.

(iii) Inculcating a sound value system among students

The environment of the ICT makes every student to adhere to ethical values, in personal and professional lives. It is rare to find the students of ICT indulging in unethical means despite the vastly different society outside the campus. They are not only technically sound, but also socially conscious.

(iv) Promoting use of technology

The developments in technology are all pervasive and ICT is not immune to those developments. We have seen the entire change from using punched cards to current high performance computations. We have been bringing in e-governance system in phases. The campus has wide area network with high speed optical fibers, campus wide secure wi fi net connectivity, access to e-journals and books, access to high speed computers, e-store system, communication and functioning through emails and 24x7 office access. ICT has developed its own custom made e-attendance system that brought accountability on the parts of students as well as faculty in regular classes. The use of telecommunication video conferencing is regularly used.

(v) Quest for excellence

ICT wants to be second to none in its core area of expertise and newer capabilities are being continuously added to the armoury of expertise. Reaching the zenith is one part of story but remaining there without being complacent is the most difficult part and challenging. Unless we innovate in all aspects of academic, research, administrative and industrial activities, we will not be able to make a dent in future. Technology is a capital and ICT has been fully geared to develop new technology in its sphere of activities to sustain the growth and glitter in this process. Each faculty member has developed expertise in unique areas and have built research teams around the theme. The quest for excellence is infectious and is prevalent in faculty members and students alike. Even many of our staff members are pursuing PhD in spare time to upgrade themselves and wish to be part of the growing story of ICT.

The frontiers of research where ICT has now focused are:

- Biotechnology & biomedicine
- Nanotechnology and materials science
- Energy science and engineering

- Process systems engineering
- Green chemistry and engineering
- Environmental protection and Hazardous waste management
- Product Engineering

6.2 Strategy Development and Deployment

6.2.1 Does the university have a perspective plan for development? If yes, what aspects are considered in the development of policies and strategies?

Indeed the ICT has a well defined development plan to be a Research and Innovation University, leveraging its strength in research and translation of research into industrial economical activity. The ICT has currently 29 programmes with over 700 full time PhDs with full fellowship, 380 Masters Students with fellowship, and 1100 UG students. A large chunk of 52% students take free education and belong to special categories as per Government norms, with minimum fees and merit is the only criteria, among which 315 students receive financial assistance of Rs 10,000 to Rs 1, 00,000 per person on the basis of merit-cum-means basis and covers all segments of society. Several endowments have been created to cater to specific needs and ICT is cited at the best example of institute-industry-government collaboration. It has been rated as number one institute in chemical engineering and technology in India with number 4 position in the world according to surveys carried out by Georgia Institute of Technology, USA over several years, the last being in January 2012. The peer reviewed publication record per faculty is the best in India and the record of developing and transferring technology is impeccable.

ICT strives to be a premier institute engaged in education, training and research in the field of Chemical Engineering/ Technology, Pharmaceutical sciences, and basic sciences. With its new status as a University, ICT has embarked on an ambitious program to maintain its excellence in Research and Innovation and expand in newer directions to take advantage of the opportunities available in dynamic industrial and technological environments.

Innovation will be at administrative, academic, research, financial and outreach activities. ICT shall perennially strive to be a vibrant institute with continuously evolving curricula to brighten the future of the chemical, biological, materials and

energy industries of the nation, and rank amongst the very best in the world through active participation and scholarship of our faculty, students and alumni. ICT shall be creators of sprouting knowledge and design cutting-edge technologies that will have the greatest impact on society and benefit mankind at large and be a truly Innovative University with its own brand and aspirations.

India being home for 20% of humans will have problems of sustainable food supply, affordable healthcare, sustainable energy and materials, supply of clean and abundant water for drinking, sanitation, irrigation and industry, and above all quality of life in a technologically advanced comity of nations. The concept establishing the ICT and Research and Innovation University will have a central theme of Expansion, Inclusion and Quality based on the sustainability of means, ideas and technologies. These are supported by statistics with each plan period outlay and future expansion as per different metrics. The ICT considers the participation of all stake holders- faculty, students, support staff and the alumni in achieving and promoting excellence, and sustaining it.

Innovation University shall work to enhance the outcomes of higher education by developing and executing policies on higher education, research and innovation, sharing knowledge and experience in research, teaching and operations, with a theme of inclusion, expansion and quality – within the country and beyond and collaborating and forming domestic and international partnerships.

The vision of the ICT is to create a vibrant environment to serve the next generation of university–industry-society collaboration, based on the mantra of sustainability of means, ideas and technologies. The key policy objective is to develop a knowledge-driven society to generate high productivity and sustainable competitiveness. The immediate needs of the society that the University shall address will be Promoting creation and dissemination of knowledge, Self-learning and knowledge-creating education practices, Imparting knowledge in innovative way, Water management systems, Affordable healthcare, Efficient energy engineering for generation and optimization in decentralized manner, Sustainable development, Environmental /climatic changes and food preservation and nutrition.

A. Innovative Research and Technology Development Programs

ICT has developed a unique culture and ethos with a long tradition of academic and research excellence, that has been sustained and augmented every passing year, since its inception. Research has been an integral part of ICT since beginning with participation of industry, philanthropists and nationalists to train and develop human resource and create new industries as an engine of economic growth. No wonder more than 500 first generation entrepreneurs have been created among its students and many of its alumni have been role models. The sustenance of excellence is an administrative and human resource development challenge. ICT has the capacity to take a leap into future with well defined objectives and technology transfer capacity to new generation of competent faculty. Three major areas of innovations, *Product Engineering for Functional Materials, Process Innovation & Process Engineering with emphasis on process intensification and Green Chemistry/Engineering principles, Interdisciplinary School of Biosciences and Bioengineering*, are envisaged considering the interdisciplinary expertise of the faculty members that can address the needs of the society and industry. Also planned is an *Ideation and Open Innovation Centre for Incubation of Technological ideas*, for nurturing Entrepreneurship and Creativity by networking with educational institutes, research organizations and industry establishments. A *Centre for Undergraduate Research in Engineering (CURIE)* is also envisioned as part this set up for trying kite flying ideas among fearless youngsters and to nurture innovation at young age. A systematic training of researchers, establishment of a performance evaluation system for the Research & Development and providing supportive environment for learning and innovation shall be part of the developing culture of the institution. ICT will focus on chemical, biological, material and energy needs of nation at large and will throw its doors open for graduates from other engineering and technological disciplines and basic sciences to participate in these endeavours. Faculty and research students will be encouraged to convert their research into start up companies. The high flyers will be rewarded through innovative mechanisms.

B. Collaborative Networking Program

Excellence cannot be achieved in isolation and thus ICT, in its long-term interest, is committed to expansion of networking initiatives with other educational organizations, research institutes and industrial establishments. Great attention shall be paid not only

to the results of collaboration but also to the process of collaboration itself with effective and timely monitoring with external peer review.

C. Organisational Development Program

The development program is shaping a new organizational culture in the University. Systems and procedures, supported by latest IT infrastructure, will become part of the new organizational culture that is flexible and supportive, overcoming bureaucratic hurdles and having seamless transfer of information, knowledge and data. ICT will have learnt a new skill of managed organizational change and become a vibrant learning organization at the end of the project. The project design shall pay greater attention to changing attitudes and creating the right climate and dynamics for change by participation of all stake holders.

1. *Knowledge Engineered Courses*

As a Centre of Education, the innovations in education practices at the University will also be in the frontier areas of technology, combining the mobility platform to deliver, as-per-the-need and on-demand e-courses spanning the specialty courses that ICT offers today. The rapid developments in mobile and tablet applications shall be effectively and judiciously used to deliver what matters in the most effective delivery of education. Knowledge will be shared amongst the students in more effective way.

2. *Content Centric Participative Delivery Systems*

The ‘Teacher-centric’ teaching methodology shall give a way to ‘content-centric’ education delivery system. Learning should be based on cultivating the natural curiosity and impulse to learn of individuals. Education system should see the emergence of innovatory initiatives such as problem-based and evidence based learning. New tools of IT shall be used for developing the content in a more visual manner to be experienced. Powerpoint presentations shall be replaced by ‘animations’ to drive in the points. The background commentary will be scripted in the most professional manner. Studios will be developed to create the content for mass delivery of the education and of scientific principles. Virtual laboratory will be created to make learning science and engineering in an enjoyable way with long lasting experience for the students, that shall engage their attention.

3. *Chakshurvai Satyam and X-Ray Vision (Seeing-is-Believing) Approach*

Chakshu (Eye), Satya(Truth), and Seeing Beyond Boundaries will be the motto of the Innovation University. All stake holders must seek knowledge based on truth and go beyond boundaries with content from sciences, engineering, economics and humanities, and value education based on ethics, gender sensitivity and global citizenry. Virtual reality can be brought to the education and research platforms. The students can take themselves through the manufacturing plants, reactors, molecular combinations, complex structures that are simulated by state-of-the-art simulators and experienced by students, irrespective of their levels. Work Integrated Learning is now best practice in many parts of the world in a wide range of industries. It is used in a range of forums, usually via work placements (or internships) and workplace projects. Work Integrated Learning shall allow industry and university to work together to develop future workforce. It refers to diverse approaches to learning which bring together the theory of a discipline with its relevant work practice, using a specifically designed curriculum.

4. Seamless Education

Instead of being consumers of the content, a team of engineering faculty members/scientists and enthusiastic students can work at the boundaries of the engineering, IT, electronics, telecommunication, and high performance computation, to create impressive education tools which can be spun off into viable commercial enterprises, and also to support other institutions, in remote areas, by distance education.

5. Entrepreneurship Development and Wealth Creation

The entrepreneurship shall be encouraged to develop products and processes. No idea shall be dumped but evaluated and refined to its logical end. Partnership with industries will be assiduously sought for implementation of technologies and/or to develop prototypes as proofs of concept.

6. Networking, Knowledge Sharing and Openware

Course collaboration across networking institutes can enhance the curriculum development, sharing best practices and should provide the students with the best possible course content and facilitates collaboration in teaching and research among academics and students. It may also ensure economies of scale and that important disciplines are sustained where demand is not sufficient. Some of courses, like

mathematics and physics, in engineering institutes, do require access to very good teachers, that can be shared via web based networking.

The senior staff of the university, Industries and social organizations can have a number of networking groups for the purposes of knowledge sharing, the conduct of collaborative projects and the joint pursuit of best practices in their areas of interest. The groups can be formed in Environmental Sciences – Climate change – Water – Energy-Food and Nutrition-the sustainable use and management of ecosystems.

7. Space, Ambiance and Infrastructure Creation

The Innovation University shall need a satellite campus with a target of at least 100 acres of land and connectivity with the current campus through active support of the State and Central Governments. The new satellite campus will imbibe the principles of sustainable engineering and development, with optimum use of resources of material and energy. We shall need a residential campus with buildings designed with green concept to accommodate highly sophisticated instrumentation, analytical and characterization laboratories, hostel and faculty accommodation, pilot plants for demonstrations, incubation centre, fabrication and micro-fabrication laboratories cum workshops, virtual reality labs, recording and editing studios in partnerships and high performance computation facilities that networking institutions can share in collaboration with ICT. The satellite campus shall generate its own power from solar systems and develop solar energy based air conditioning to reduce carbon foot print. The campus will have its own water management system, from rain water harvesting, water purification to recycle of grey water. The campus shall develop good agriculture and horticulture practices to share with the neighboring Institutes and organizations.

The innovation, however, cannot fructify if there is no supporting infrastructure and committed human resources. The University shall have four Centres, at its satellite campus, in a 7 storey, 250,000-square-foot, dry and wet lab research facility to provide office and lab space to accommodate 250 faculty members and scientists, 1000 Ph.D. scholars, for technology developments in collaboration with all stake holders to create innovative new concepts and products for the marketplace and well being of society in general. Science, Technology and Society are intimately linked and the University shall become a focal point of sharing the knowledge and creativity. However, spending money on research alone, will not lead to an Innovation which is fundamentally about

fostering personal growth, capability and creativity of every individual in the University. Scientific and technological knowledge, together with innovation, contribute to the economy and society. The University should actively encourage a culture of mutual respect and purposeful activities involving academics, students and members of the community, for fostering the innovation spirit in the society. The Centres shall provide an integrated eco-system where all forms of creativity cultural, technological and economic, that can take root and flourish. An exciting role would be to have the university serve as a public space for ongoing conversations about the future direction of technologies, markets, products, services, and social issues that affect the society.

8. *Perspective Growth Plan*

The traditional concept of departments or schools will vanish and faculty and students will work on on-demand and as-per need courses and curricula. The Innovation University will function, with an ambitious plan with a theme of Inclusion, Expansion and Quality with projects growth. India being a diverse, democratic and dynamic society, changes will be brought into the Innovation University from the inception. *'Think globally and act locally'* is also a basic philosophy since many Indian students will work abroad and must be aware of global standards and trend. They must be sensitized about all concerned issues. Besides, international students will always be attracted for higher education in the Innovation Universities. There shall be no age bar for admission and higher education in a knowledge based society and several so-called senior citizens will need 'new lease' for life and will be promoters of life-long learning.

Strategic Plan

ICT has identified clear strategic directions for itself and is poised for an organisational realignment to pursue internally determined directions with international benchmarks. This orientation shall remain the prime motive force behind ICT's action in the foreseeable future which will bring laurels to the nation at large.

ICT's strategic plan has its main thrust on programmes in Human Resource Development and Sustainable Technologies focusing on innovations for environmentally friendly and widely replicable technologies and a systematic diffusion of these innovations to the formal and non-formal sectors along with structural and Institutional development as a National Resource Centre.

(I) Human Resources Development

ICT proposes to provide excellent training in Engineering and Technology disciplines that not only can provide better employment opportunities but also open up a window for Entrepreneurship in Process Intensification, Functional Product Engineering, Nanotechnology, Green Technology, Sustainable Development, Biosciences, Drug Discovery and Drug Delivery Systems and Energy Engineering. Innovative programmes will be developed to boost economy and cross boundary culture.

(II) Excellence in Research and Quest for Innovation

To attract the best talents we shall provide the best of the facilities, and intellectually stimulating environment for research in the areas identified for innovation. ICT has initiated establishment of new infrastructure for housing the cutting edge technology research. Since science and engineering have become boundary less and seamless, it is pertinent for ICT to add on innovative programmes in materials and product engineering having input from all basic sciences and all branches engineering.

(III) Best Quality of Higher Education and Research

A systematic vibrant curriculum development will be taken up as a model for the post-graduate education in Chemical Engineering and Technology and Allied Technology Disciplines, along with Faculty and staff training in both technical and non-technical areas and developing IT infrastructure for the University for Seamless Administration without hurdles.

(IV) Management of Research, Development and Innovation

ICT will be undertaking joint research with other organizations and industries, establishing research facilities, an Open Innovation Centre for technology incubation, training staff, joint supervision of doctoral students and sharing facilities, collaborative publications, patents and consultancies as well developing capacity to conduct research in frontier areas. The promotion of research by establishing CURIE will give a fillip to research and innovation.

(V) The Increased Orientation of the Institution towards Formal Sector

ICT will coordinate with industrial organizations and professional bodies for corporate responsibility towards society for surveying the technologies for development, and organise public awareness with education programs and training modules for industry personnel as well as faculty of other engineering Institutes.

6.2.2 Describe the university's internal organizational structure and decision making processes and their effectiveness.

The following is the Constitution of the Board approved by the State Government which now ensures independent members on the Board.

Board of management

	<p>Padmavibhushan Dr. R. A. Mashelkar, FRS,FNA, Chancellor CSIR Bhatnagar Fellow and President Global Research Alliance Former Director General CSIR and Secretary, DSIR, GOI National Chemical Laboratory, Pune.</p>
	<p>Padmashree Professor G. D. Yadav, FNA Vice-Chancellor, Chairperson R.T. Mody Distinguished Professor; J.C. Bose National Fellow (DST-GOI) Institute of Chemical Technology, Mumbai.</p>
	<p>Padmashree Dr. Gyan Chandra Mishra Member (nominated by the Chancellor) Director, National Centre for Cell Science, Pune</p>
	<p>Shri S. M. Mokashi Member (nominated by the Chancellor) Industrialist and Distinguished Alumnus, Mumbai.</p>
	<p>Shri A. S. Dani Member (nominated by the Chancellor) Vice- Chairman, Asian Paints Ltd. Mumbai.</p>
	<p>Dr. Sanjay Chahande Member (Nominee of State Govt.) Principal Secretary, Deaprtment of Higher and Technical Education, Govt. of Maharashtra.</p>

	<p>Dr. S. K. Mahajan Member (Nominee of State Govt.) Director, Technical Education & SPA Directorate of Technical Education, Govt. of Maharashtra</p>
	<p>Professor M. Barma Member (Nominee of UGC) Director, Tata Institute of Fundamental Research (TIFR).</p>
	<p>Professor M. D. Teli Member (Senior Professor) Department of Fibres and Textile Processing Technology Institute of Chemical Technology, Mumbai.</p>
	<p>Professor P. R. Vavia Dean, Academic Programme Department of Pharmaceutical Science and Technology Institute of Chemical Technology, Mumbai.</p>
	<p>Senior Dean Institute of Chemical Technology, Mumbai.</p>
	<p>Smt. K. V. Marathe Member (Senior Associate Professor) Department of Chemical Engineering Institute of Chemical Technology, Mumbai.</p>
	<p>Professor (Smt.) S. S. Lele Secretary (Registrar) Department of Food Engineering and Technology Institute of Chemical Technology, Mumbai.</p>

The Governance of the Institute is through various Empowered Committees that report to the Board of Management

Sr. No	Committee	Function
1	Planning and Monitoring Board	Principal Planning Body of the Institute and is responsible for the monitoring of the development programs of the Institute. The Board advises the Board of Management and the Academic Council on policy decisions
2	Academic Council	It is the principal academic body of the institute and subject to the provision of the Rules, has the control over and is responsible for the maintenance of standards of teaching, research and training, approval of syllabus, co-ordination of research activities, examinations and tests within the institute.
3	Finance Committee	<p>The Committee considers the annual accounts and financial estimates and submits them to the Board of Management for approval;</p> <p>The committee is empowered to fix limits of the total recurring expenditure and the total nonrecurring-expenditure of the year based on the income and resources of the institute.</p> <p>It also considers fee structures and other changes decided by the administration</p>
4	Building and Works Committee	The Committee is responsible under the direction of the Board for construction of all major capital works in the Institute
5	Standing Committee on Administration	The Committee recommends polices to be adopted by the institute with a view to have effective and efficient utilization of available man power, formulates and lays down guidelines, and polices ensuring healthy and

	(SCA)	harmonious employee relations
6	Deans & Associate Deans, Controller of Examination	<p>There are 4 Deans</p> <p>(i) Dean-Academic Programmes,</p> <p>(ii) Dean-Student and Alumni Affairs. Human Resource Development,</p> <p>(iii) Dean-Research, Consultancy Resource Mobilization,</p> <p>(iv) Dean-Infrastructure and Campus Development, Buildings,</p> <p>The Deans assists the Vice Chancellor in performing his duties. The Associate Deans assist the Deans</p>
7	HoDs	Each Department and Centre is headed by a Head, who is responsible for administration of the Department
8	Internal Quality Assurance Cell (IQA)	The Committee monitors the quality of academic program and research
9	Faculty Common Room	The decisions of the Board of Management are discussed in the faculty room meeting where every faculty member has the right to express his/her opinion. The meeting is held minimum four times in a year.

Each Dean chairs sub-committees for functioning of the Institute and has been empowered to take/recommend decisions to Vice Chancellor /Board

ACADEMIC PROGRAMMES (AP)	HUMAN RESOURCE DEVELOPMENT (HRD)	RESEARCH CONSULTANCY AND RESOURCE MOBILIZATION (RCRM)	INFRASTRUCTURE AND CAMPUS DEVELOPMENT (ICD)	VICE PRESIDENT – TECHNOLOGICAL ASSOCIATION (VP-TA)
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<p>Admissions</p> <ol style="list-style-type: none"> 1. PG Admission 2. UG Admission 3. Handbook 	<p>Faculty Support Staff Welfare :</p> <ol style="list-style-type: none"> 1. Accident insurance 2. Health insurance 3. 2 sets of Uniforms for Class IV employees 4. Training 5. Travel Grant <p>(Golden Jubilee/ NOCIL/ Dr. G.P. Kane)</p>	<p>Resource Collaborations, IPR and Technology Transfer</p>	<p>Campus Accommodation</p> <ol style="list-style-type: none"> 3. Student and Wardens' Committee 4. Faculty 	<p>Cultural Activity</p>
<p>Undergraduate Programmes</p>	<p>Grievances Redressal and Disciplinary Action Cell</p>	<p>Evaluation and Fellowship</p>	<p>Campus</p> <ol style="list-style-type: none"> 3. Maintenance 4. Beautification 	<p>Publications</p> <ol style="list-style-type: none"> 1. Bombay Technologist 2. SPIRIT (ICT Patrika)
<p>Postgraduate Programmes</p> <p>Additional PG courses :</p> <ol style="list-style-type: none"> 4. Diploma Course in Chemical Tech. Management (CTM) 5. Certificate Course in Chemical Safety and Risk 	<p>Legal Cell, Service Books Pension Cases and Tribunals</p> <hr/> <p>Equal Opportunity Cell</p>		<p>Canteen and catering</p>	<p>Student Welfare and Mentorship</p>

Management 6. Corrosion Control				
Academic Activities 1. Academic Calendar 2. Exam Time Table 3. Lecture Schedule/ Classroom Allocation 4. Visiting Faculty	Anti-ragging	Extensive Services		
Examinations				
Unfair means in examinations and Vigilance squad			Campus Safety and Security	
Merit-cum-means Financial Assistanceship and Scholarship	Cell to Eliminate Sexual Harassment Support Staff activities and Magazine	Library	Material Procurement and Disposal	Student Academic Interface
Publications - Annual Report/ Student Diary/ ICT Diary / Posters	Media publicity and IPC & Digitization			
Students' Feed back	Satkar Committee			
Research				

Colloquia				
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6.2.3 Does the university have a formal policy to ensure quality? How is it designed, driven, deployed and reviewed?

The Institute has an Internal Quality Assurance Cell which audits the Academic and Research activities of the Institute. The Academic Council and the UG and PG program Committees look into the program structures and give recommendations for overall quality improvement of the course. The quality of teaching is judged through feedback from the graduating class and it is taken into account for changes, if any, in academic and other activities. Surveys are also conducted for current students, alumni, Industries and faculty for their input for changes in the functioning of the Institute.

The Institute had all UG courses accredited for three five year terms consecutively with A grade rating until 2013 and is in the process of re-accreditation. (9 of the 13 Masters courses are already accredited while visits from expert committees are expected soon for other courses). The Institute is also benchmarked against all the leading IITs and other major colleges in the country by independent surveys published in USA in terms of number of publications, and number of Post graduates and Ph.D.s. The productivity per faculty and per dollar spent is the highest by world yardstick.

6.2.4 Does the university encourage its academic departments to function independently and autonomously and how does it ensure accountability?

A planning and Monitoring Board which meets once in a year to consider the performance of each department. Each Department is empowered to prepare a roadmap for its growth, in line with the vision of the Institute and prepare an action plan. The TEQIP-BoM Committee also evaluates the performance of all functional bodies in the Institute.

Faculty Common Room Meeting is the best place for monitoring the performance of the Head of the Institute where every faculty member voices his/her opinion.

6.2.5 During the last four years, have there been any instances of court cases filed by and against the institute? What were the critical issues and verdicts of the courts on these issues?

It is possible to please everyone with policies which are decided by the Board and Management keeping in view the overall interests of the Institute. Unfortunately, there is difference of opinion between two groups if staff members and Institute has to support its own employees' group, since the other group is managed by a body associated with the University of Mumbai, which has led to a few cases in recent years.

6.2.6 How does the university ensure that grievances /complaints are promptly attended to and resolved effectively? Is there a mechanism to analyse the nature of grievances for promoting better stakeholder-relationship?

The ICT has a Grievances Redressal Cell, under the chairmanship of the Dean(Students Affairs and Human Resources Development) The students, faculty and staff members have direct free access to the Dean or the Vice-chancellor to voice their complaints if any and seek the redressal. The Dean under his chairmanship addresses speedily to the requests and complaints.

6.2.7 Does the university have a mechanism for analyzing student feedback on institutional performance? If yes, what was the institutional response?

The ICT has developed an on-line mechanism for the students feedback which every students can give 24x7. Also every student, graduating from the Institute, gives online feedback in Information and Processing Centre. A committee under the Chairmanship of the Dean(Acad.) analyses the information and specific comments provided by the students. The grade of the faculty is generated by the system itself and shared with the Faculty members. Only in the case of serious cases, the concerned faculty member is counselled by the Dean and Vice Chancellor.

6.2.8 Does the university conduct performance audit of the various departments?

The Institute is made of closely knit interlated Departments, both in pure sciences and Engineering and Technology Sciences. The performance of the University has been audited by a Data Auditor and a Performance Auditor every year, under the Technical Education Quality Improvement Program of the MHRD, GoI. The information about the Institute is verified by the Data auditor against the evidence while Performance Auditor evaluates the overall achievements, including the governance of the Institute. We have been praised in previous both such audits and the information is available in the Annual reports of the ICT.

6.2.9 What mechanisms have been evolved by the university to identify the developmental needs of its affiliated institutions?

This point is not applicable to ICT

6.2.10 Does the university have a vibrant College Development Council (CDC) / Board of College and University Development (BCUD)? If yes, detail its structure, functions and achievements.

The overall development of the ICT is monitored by the Board of Management. The Dean (Infrastructure Development) and his Committee is responsible for the infrastructure development.

6.3 Faculty Empowerment Strategies

6.3.1 What efforts have been made to enhance the professional development of teaching and non-teaching staff?

An analysis of Faculty Training was made in 2012 with input from every individual faculty member from each Department for the following areas.

- Basic and advanced pedagogy training
- Subject / domain knowledge enhancement
- Attendance in activities such as workshops, seminars, etc.
- Improvement in faculty qualifications.
- Improving research capabilities

Almost 92 of faculty members of ICT have earned their doctoral degree from the Institute itself but they are allowed to earn additional experience abroad before returning to the Institute. Many faculty members were sent abroad to get professional training in newer areas of research as well within the country for subject knowledge enhancement. They are also supported to attend several training programs in management. Almost every possible course and training program is brought to the notice of the faculty members and interested faculty members were provided all financial support to attend the program.

Many professional bodies operate through Institute's premises maintaining strong linkages with each other and the faculty members of Institute are shouldering numerous responsibilities as their office bearers Many faculty members are allowed

to serve on the Boards of the professional bodies. These relations are symbiotic as industry personnel willingly participate in the Institute's activities.

The faculty members are also groomed to take additional responsibilities and identified to be future leaders.

The major role played by the eminent faculty members in Professional and Apex bodies, Regulatory and Advisory committees for various subject specializations has boosted the Government-Institute relations and therefore the faculty members are permitted to take additional responsibilities.

All the faculty members of the Institute are actively involved in research in frontier areas of Chemical Engineering, Chemical Technology, Biotechnology, Basic Sciences and allied fields. The research areas are contemporary and have a fine balance of Fundamental Research and Engineering Applications of relevance. All the faculty members publish their work in reputed international journals. It is a matter of great pleasure and pride that the Department of Chemical Engineering of ICT has topped all chemical engineering schools in India, for the past several years, according to the independent survey done by Professor Jude Sommerfeld of Georgia Institute of Technology, USA, in terms of publications in international journals.

The faculties will start interacting with various reputed research centers and the universities in the country and abroad to augment the research activities. The faculty member are encouraged to work as consultant to industry and earn consultation fees which is a great incentive for the individuals. They can also plan and conduct training programs for industry personnel.

The faculty members are encouraged to make short visits, offer term based courses at other Institutions. The younger faculty members are encouraged to take initiative in applying for foreign fellowships, participating in International conferences held outside India and thus are actively engaged in trying to get collaborations with foreign Universities. Inter-country and Inter-University research schemes can be achieved by exchange of both, faculty and research students

Even staff members are allowed to register for higher studies and many of them have completed either PhD, management training program, specialized technical programs. In one case, a senior technical assistant, after completing PhD, became a faculty

member in another engineering college and he implemented the work culture in that Institute.

Various training modules have been conducted for supporting staff for training in areas such as :

- 1) *Basic electricity and laboratory equipment maintenance*
- 2) *Basic knowledge of computers*
- 3) *Basics in electronics*
- 4) *Communication Skills and Laboratory Skills*
- 5) *Computer hardware and networking*
- 6) *English speaking*
- 7) *Equipment and instrument maintenance*
- 8) *Motivation and change of mindset*
- 9) *MS-CIT computer course*
- 10) *Repairing of electronic items*
- 11) *Store management*
- 12) *Training of advanced instruments at factory*

6.3.2 What mechanisms have been evolved by the university to identify the developmental needs of its affiliated institutions?

Each faculty member and staff member is expected to submit his self –appraisal report to through the head of the department with his remarks. The SAR has grading with indicated marking system. The individual is therefore aware of his performance and can improve from past performance. The competition to do better is so intense that every faculty member has built his/her reputation. This is also reflected the awards and prizes won by the faculty members from both, national and International organizations.

The Institutes' working culture has evolved over several decades with self development of the faculty members through one's own efforts. The Institute supports every individual who wishes to develop on his/her own. Faculty members are encouraged to stay updated with the latest information and skills by supporting trainings at National and International levels.

There is decentralization of responsibility among faculty members, each one taking additional administrative responsibility for smooth functioning of the Institute.

6.3.3 What are the welfare schemes available for teaching and non-teaching staff? What percentage of staff have benefitted from these schemes in the last four years? Give details.

Institute has Mediclaim, Health Insurance Policies for all its staff and faculty. There is provision of emergency medical aid for teaching, non-teaching and students. All faculty and staff and students are part of the group insurance policy and they are insured from residence to place of work and back to residence including accidental travel insurance. The annual premium of all the above insurance policy is paid by the institute.

6.3.4 What are the measures taken by the University for attracting and retaining eminent faculty?

The Institute probably offers one of the most competing and invigorating atmosphere for new faculty members. Many of the candidates selected under UGC Faculty recharge program have opted to join ICT in the last few years.

Since our UG to PG ratio is almost unity, the number of students doing Ph.D., and Master's courses is very high. Their projects and research culture of innovation brings a vibrant atmosphere on the campus keeping the young and dynamic population of researchers on the campus 24X7.

The Institute invites highly reputed and accomplished eminent personalities to give invited lectures. An exposure to recent developments in the field elsewhere, keeps the students interested in their subjects and enthuse them to take up a research career. The faculty members also get an exposure to the latest trends in their fields, and opportunity to connect with the industries and other organizations.

The ICT has developed a number of endowment chairs which have attracted even Directors of CSIR labs (CMCSRI, IICT) and other scientists to come to ICT after their retirements. ICT has also created a number of visiting professorships where faculty from Universities from USA, UK, Europe and Australia are routinely invited to spend time from a few days to few weeks, giving lectures and interacting with faculty

members and students. Many of these visitors, build life long relationships with ICT faculty members

To attract more talented faculty members, steps have been taken to build faculty accommodation, the absence of which had been the major hurdle in attracting well qualified and endowed persons from elsewhere to come to Mumbai. In the last few years the number of faculty is increasing because of chairs created specially by ICT. This will continue with more chairs supported by Industry.

6.3.5 Has the university conducted a gender audit during the last four years? If yes, mention a few salient findings.

We been tracking the gender ratio in the Institute for the last five years. This data is also audited by a Data Auditor every year. Even as an engineering Institute, we have a healthy female population on the campus which has gradually increased over several years. Although the Government stipulates 30% reservation for females in different courses, we have almost 35% females in the ICT. The pharmacy course in fact has more 80% of females. The ICT has already created infrastructure for meeting the needs of the increasing female population among the students on the campus and future plans have kept this point in mind.

6.3.6 Does the university conduct any gender sensitization programmes for its faculty?

Being a metropolitan city, Mumbai has always been sensitive to the gender equality. No untoward incidence has ever occurred in the Institute. There is good representation of the woman teachers within the campus and they shoulder responsibilities as anybody else. The ICT's environment has respected performance and competence of the Individuals than any other consideration. This is also percolated in the staff members of the ICT who treat the faculty with respect and admiration, while each faculty member appreciates the hard work done by the staff members who are equal stake holder in the growth of the Institute as much as the faculty members and management members.

6.3.7 What is the impact of the University's Academic Staff College Programmes in enhancing the competencies of the university faculty?

This point is not relevant for ICT

6.4 Financial Management and Resource Mobilization

6.4.1 What is the institutional mechanism available to monitor the effective and efficient use of financial resources?

The functioning of the Institute is through the empowered committees such as Finance Committee, Building and Works Committee and Purchase Committee which ensure that there is complete accountability in all financial operations. The Finance committee considers the annual accounts and financial estimates and submits them to the Board of Management for approval. There is decentralization of financial powers depending on the quantum of the amount involved in each activity.

The Finance committee also considers fee structures and other changes decided by the administration.

The Planning and Monitoring Board is the principal planning body of the Institute and is responsible for the monitoring of the development programs of the Institute. The Board has the right to advise the Board of Management and the Academic Council for their decisions for functioning of the Institute.

6.4.2 Does the university have a mechanism for internal and external audit? Give details.

Yes, the University follows both internal and external Audit procedures which thoroughly undergoes auditing of the economic and administrative processes and activities. All the procedures for procurement of the material, equipments, services are followed as per the prescribed government norms. All the administrative functionings of the institute departments is carried out as per the government norms and the statutory rules of the institute. These procedures are thoroughly audited by internal auditor before performing statutory audit procedures.

6.4.3 Are the institution's accounts audited regularly? Have there been any major audit objections, if so, how were they addressed?

As the institute is following all the procedures laid out in the statutes and rule books which are framed by taking proper government approvals carrying out institutional account audit regularly is one of the important statutory requirements of the functioning of the institute. Recently a statutory audit of the institute was being conducted where in

the auditors reports does not give any remarks in the form of major audit objections. However, there were some queries related to audit which were raised by the visiting auditors team which were answered satisfactorily through the corrective mechanism of the institute.

6.4.4 Provide the audited income and expenditure statement of academic and administrative activities of the last four years.

Audited income and expenditure statement of academic and administrative activities of the last four years will be provided to the NAAC assessment team during their visit days.

6.4.5 Narrate the efforts taken by the university for resource mobilization.

The Board of Management has approved the Vision and Mission which is prominently displayed on the campus. These are also part of Annual Report and diaries published by the Institute which are made available to every stake holders and even to public.

ICT faculty has full confidence in their capabilities, despite limitations of the infrastructure, to take up challenges for growth and adopt themselves for the changes taking place in education and professional environments, with reference to global scenario.

There is strategic plan drawn for expansion of the activities over the next 10, 25 and 50 years with establishment of Technology Centres, Innovation University and Research and Innovation Park.

The Institute understands clearly the financial implications of development. Every faculty member is involved in research and thus has to bring in funds for his/her own research. We will have to increase the revenue at least 30-40% every year to generate enough corpus in the next ten years. Every faculty member is encouraged to apply for more research projects. There are increased efforts in enhancing corpus of Institute by the way of donations and endowed chairs from Industry.

The funding from State Government is limited but the Central agencies have been very supportive and the funding has increased the research activities significantly due to recognitions received under UGC's SAPs', DBT, DAE and other funding agencies.

At present, the research activities are completely supported by efforts of faculty members and funds received from central funding agencies, such as UGC, under Special assistance program and DST under DST-FIST.

Institutional authorities always strive hard to apply for various state and central government funds in the form of planned grants, refurbishment grants, research grants, innovative research centre grants and their various financial supports schemes such as DST FIST centres UGC-CAS centres, special funds from the atomic energy Department and Science and Technology departments of the government apart from availing the grants through the TEQIP Schemes.

The ICT has recognised the importance of Management of Research, Development and Innovation. The ambitious program of scaling up of research and innovation is being supported by organisational development, attracting high quality students and qualified faculty apart from substantially improving administrative efficiency. achieving financial stability and vitality through dynamic generation of resources, and engaging in a systematic process of converting research ideas into business ventures. The establishment of Intellectual Property cell and Technology Incubation centre at ICT is being planned to help the innovators to convert their ideas into viable commercial activities.

ICT emphasizes on

- a) Generating valuable intellectual property in terms of patents and publications.
- b) Development of transferable skills amongst post-graduates and Ph.D.
- c) Inculcating the spirit of entrepreneurship amongst researchers.
- d) An exposure to industrial operations during summer vacation for PGs and for Ph.D.s as interns

Our financial resources are the students fees, Research projects, consultation fees, Royalties and donations. There are efforts by every faculty member to get research projects from Government bodies and Industries. We assiduously pursue the industries to partner with the ICT to generate the resources for the Institute.

6.4.6 Is there any provision for the university to create a corpus fund?

The ICT has created four major funds, as Corpus Fund, faculty development Fund, Maintenance fund and Staff development fund.

In addition, the ICT has developed several Endowment funds, mostly using donations from philanthropists and Industries, to create several visiting professorships, to provide scholarships to needy students and for welfare of the staff.

6.5 Internal Quality Assurance System

6.5.1 Does the university conduct an academic audit of its departments? If yes, give details.

The Institute has an Internal Quality Assurance Cell which audits the Academic and Research activities of the Institute. The quality of teaching is judged through feedback from the graduating class and it is fully taken into account for changes, if any, in academic and other activities. ICT understands that we need to compete with some of the best Institutes in the country to attract not only good students but also good faculty and research funding. As a result, efforts are being put to upgrade infrastructure and provide additional facilities. The Governing Body is final body to take decisions for all stake holders on recommendations from Institute bodies. As a State University, ICT's Board of management has to comply with all regulations in place.

There is an analysis of the results after every examination to understand the performance of the students. The performance is also matched with the background and other factors that might influence the performance of the students. Each year, the analysis throws up different trends, however, the leads for improvements are pursued with vigour to overcome the deficiencies of the system.

The University is also accredited for individual courses by the National Board of Accreditation. Each accreditation is an evaluation by independent experts. For each Department, now there is an Advisory Committee of external members who discuss with the faculty members their research and other skills and review the growth of the Department.

ICT takes accreditation of its courses by regulatory bodies very seriously. Apart from NBA accreditation, each Department is almost every year reviewed by the review committee of UGC under special assistance program. Also DST, provides funding to research infrastructure, only based on rigorous review of the performance of the departments in the ICT.

Of 13 PG courses, 9 courses are accredited while applications for remaining courses has been already filed. Applications for all UG Technology and engineering courses have been filed in 2014. The Institute had all UG courses accredited for three five year terms consecutively with A grade rating until 2013. The Institute is also benchmarked against all the leading IITs and other major colleges in the country by independent surveys published in USA in terms of number of publications, and number of Post graduates and Ph.D.s. The productivity per faculty and per dollar spent is the highest by world yardstick. The M.Sc. course in Chemistry is accredited by Royal Society of Chemistry, UK.

A planning and Monitoring Board which meets once in a year to consider the performance of each department. The TEQIP-BoM Committee, specifically created by TEQIP project at ICT also evaluates the performance of all functional bodies in the Institute. A similar Committee of the Board is being constituted for Monitoring of performance at micro-level. The TEQIP-BoM Committee also evaluates the performance of all functional bodies in the Institute. Faculty Common Room Meeting is the best place for monitoring the performance of the Head of the Institute where every faculty member voices his/her opinion.

6.5.2 Based on the recommendations of the academic audit, what specific measures have been taken by the university to improve teaching, learning and evaluation?

The major step was taken by the University in academic year 2009-10, to switch over credit based system. The entire evaluation system was revamped with necessary structure for the calculation of CGPA. The Courses were revised by taking into account the status of teaching and content upto prequalifying examination. The career choice of majority of the students , from past observations was taken into account to design the elective courses for the student to bring choice based electives. Knowing that many students struggle with Mathematics and organic chemistry, we have brought in remedial measures in terms of preparatory courses and additional tutoring for weak students. Since we has addressed the perennial problem of attendance, it was easier to now trace individual students performance from the Institute's MIS data bank. We had also brought in diagnostic tests for every entrant to the ICT to understand the attitude and aptitude of the students. These tests have helped the ICT to design several remedial programs including communication skills program and Ideation workshops, There is

now strong realization

6.5.3 Is there a central body within the university to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

The Institute has an 'Academic Council' which has internal members as well as external members from reputed Academic Institutes and IITs. The Academic Council is the central body that reviews the academic programs in all respects, including Syllabus revision, Examinations, content delivery, students' performance, etc.

6.5.4 How has IQAC contributed to institutionalizing quality assurance strategies and processes?

Institute has established Internal Quality Assurance Cell on 17th September, 2009. However as per the statutes and provisions of the academic rules of the institute Undergraduate Programme Committee (UGPC) and Postgraduate Programme Committee (PGPC) are greatly involved in articulating and formulating various internal quality assurance rules of the institute which takes care of framing of the various rules related to effective academic quality measures and these committees under the guidance of Dean (Academic Programme) initiates and acts with necessary actions on these issues time to time. These committees are also involved in carrying out thorough analysis of academic performance of the students and faculty of the institute.

6.5.5 How many decisions of the IQAC have been placed before the statutory authorities of the University for implementation?

UGPC and PGPC committee meetings are held minimum two times per semester to ascertain the academic progress of the running programmes and decides upon the issues arises due to emergency. It also ensures proper implementation of all academic schemes in the institute and all the decisions taken in this meetings are immediately implemented to ascertain the impact of these decisions and the functioning of the academic programme.

6.5.6 Does the IQAC have external members on its committees? If so, mention any significant contribution made by such members.

At present, there is no external member on the Committee. However, the cell is planning to Institute Research Audit Committee and Academic Audit Committee with external members to have independent experts for objective review of the Institute Activities.

6.5.7 Has the IQAC conducted any study on the incremental academic growth of students from disadvantaged sections of society?

The analysis of the performance of the students from SC/ST/OBC classes is monitored

5.5.8 What policies are in place for the periodic review of administrative and academic departments, subject areas, research centres, etc.?

The Head of the each department periodic (two time every semester) review of academic and research activities of each staff where the recent recruit present their progress and future plan of action.

The institutes committee of all the heads and controller of examination conduct review of the academic and administrative performance of every department and appropriate rectification and corrective modifications are carried out.

The committee of the Deans chaired by the Vice-chancellor conducts the review of the overall performance i.e. academic, research, consultancy and campus development which is elaborated by the vice-chancellor to the Board of Management of ICT.

In Addition to the above the faculty common room meeting is held on 1st and last day of every semester (open forum) to understand the difficulties faced by the faculty, non-teaching staff and the students. Appropriate instructions are given to the respective Deans and suggestions there on are implemented.

The minutes of the meetings of HOD council, Deans council and faculty common room are made available to each staff member on request.

CRITERIA VII: INNOVATIONS AND BEST PRACTICES

7.1 Environment Consciousness

7.1.1 Does the university conduct a Green Audit of its campus?

Environment consciousness is enshrined in the mission of the Institute. Irrespective of its urban surroundings, Institute has very lush green campus. Tree plantation is the major concern of the management to maintain the pristine purity and beauty of the institute to provide a congenial atmosphere for the academic and non-academic pursuits. Even though no formal green audit is conducted, a lot of dedicated effort is put in to make the campus eco-friendly. There are 25 gardeners to carry out the horticulture work in the Institute. This has led the Institute to win the best garden award for several years.

Informal green audit of the campus is carried out by the staff periodically by supervising the maintenance of the existing trees and locating places for planting new trees. Nurturing plants is one of the non-academic pursuits that develops eco-concern among the students. Efforts are made to make the Institute a polythene free zone by removing plastic covers periodically from the campus.

7.1.2 What are the initiatives taken by the university to make the campus eco-friendly?

- **Energy conservation:**

The Institute is committed towards energy conservation. It has therefore taken a number of measures which help conserve energy.

- Energy consumption in the hostel is closely monitored by the superintendents.
- The Incandescent bulbs are replaced with high efficient CFL and LED bulbs.
- The notices near the switch boards prevent wastage of energy.
- The multipurpose Pidilite pavilion, the open air gallery, serves as a green background for institute level functions and a lounge for students at lunch break.
- Timers are introduced in Air conditioners in Computer Centers and Departments which save energy.

- Sensors are installed for switching on / off motor pumps.
- **Use of renewable energy:**
 - Solar powered air-conditioning are installed in High performance computational lab.
 - Research groups are working on the innovative concepts in the area of renewable energy such as, solar powered lights, solar cookers, solar dryers and received recognition from industrial and agricultural fields.
 - Solar water heaters are installed in hostels for supplying hot water to students.
 - The DBT-ICT Centre for Energy Biosciences (DBT-ICT-CEB) is focused primarily at developing biotechnologies for deriving biofuels from renewable resources for reducing India's rising dependence on petroleum fuels and cut down greenhouse gas emissions.
- **Water harvesting:**
 - The Institute has two rain water harvesting structures in the campus for using the rain water in washrooms and for other purposes.
 - A concept of eco-campus incorporating treatment and reuse of grey water, rain-water harvesting is being worked out to minimize water usage
- **Check dam construction:**
 - The Institute has not constructed any check dam so far, as campus area is relatively small.
 - There is a minor channel, or drainage ditch in and around the Institute. There is ground water in the campus.
- **Efforts for Carbon neutrality:**
 - Measures are in place to reduce carbon emission and keep the campus pollution free.
 - Plantation is done inside and outside the institute campus to neutralize the carbon emission.
 - Circulars are sent through email for minimizing the use of paper and the Institute is moving gradually towards paperless system.
 - Every building in the campus is surrounded by trees and lawns.
 - Staff and students are discouraged to use vehicles inside the campus so as to

keep the use of vehicles in the campus negligible and the entire area pollution free.

- **Plantation:**

- The green ambience of the Institute is largely due to tree plantation.
- There are various kinds of trees in the campus. They help maintain the ecosystem.
- Planting of saplings by the chief guests of various functions evinces the eco-consciousness inherent in the institute practices.
- Natural fertilizers are used for plants and trees in the campus.

- **Hazardous waste management:**

- Use of plastic bags is discouraged within the premises of the Institute.
- Regular workshops and seminars are conducted on waste disposal, their source and classification, pest control.

- **E-waste management**

- Electronic goods are put to optimum use; the minor repairs are set right by the staff and the Laboratory assistants; and the major repairs, by the professional technicians, and are reused.
- UPS Batteries are recharged / repaired / exchanged by the suppliers.
- The obsolete computers and other wastes generated from the electronic equipment are proposed to be auctioned to authorized e-waste dealers and the hazardous materials in those equipment's are to be removed and disposed as per norms.
- The Institute and Waste to Energy Research and Technology Council India (WTERT- India), hosted the fourth annual conference on waste management and particularly with reference to looking at the industrial waste, e-waste, construction and demolition waste, municipal solid waste, among others, as an uninterrupted resource for recovery of the valuables and energy on November 26 and 27, 2015 at ICT.

7.2 Innovations

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the university.

A CASE STUDY

Molecular Dynamics: A Tool for Undergraduate Engineering Students to Transform Their Understanding of Chemistry at Molecular Level

Abstract: Molecular dynamics is a valuable tool in the field of chemistry that can be introduced as part of curriculum for engineering students at undergraduate (UG) level for better understanding of chemistry. Particularly engineering UG students have difficulty in understanding chemistry in terms of the molecular structures. Newtonian mechanics on the other hand is easily understood by the students pursuing engineering. Molecular dynamics, the branch of computational chemistry therefore can help these students to understand chemistry better if students also interpret the data and images produced by MD simulation. This case study describes the use of GROMACS, an open source code and visualizing packages like CHIMERA and VMD as a tool to perform MD simulations, which successfully reformed the approach of undergraduate students towards chemistry. The Molecular dynamics workshop was conducted for undergraduate students during summer vacation of 2015 to emphasize on conceptual understanding of chemistry and physics, using real life examples of mass transfer of compounds from one phase to another phase. This exercise encouraged the participating students to initiate their own learning in the field of molecular modeling.

1. Introduction

Chemistry is an integral part of engineering undergraduate curriculum. Usually the subject is taught in the class and few experimental studies in laboratory. But for most students the visualization of molecules, particularly their existence in 3D world, is difficult as the chemicals are usually shown on a plane in 2D format. The lack of visualization affects not only the learning but also interest in the chemistry itself. The various theories of chemical bonding and structure like Hückel MO theory, Lewis structure theory, VSEPR theory, etc. are attempts to predict the chemical nature and properties which many students fail to understand.

On the other hand, advances in theoretical chemistry and availability of increasing computational powers at cheaper rates allow the chemists to explore the field without conducting large number of experiments. Numerous packages, paid and free, for molecular simulation are available on the net and with appropriate visualization softwares can enrich the learning experience. The molecular modeling first defines or estimates the characteristic of the material and then performs the simulation based on laws of physics. The question we ask is whether we can use molecular modeling in the classroom to train the students better in the foundations of chemistry by engaging them in an enjoyable manner. The various models of molecular modeling can help students to comprehend chemistry by “viewing” molecules and “sensing” their surroundings in any physical or chemical processes. Introduction and demonstrate of various molecular simulation techniques in the classroom are reported in various articles. (Paselk and Zoellner, 2002, Whisnant et al., 2000, Taylor and Feller, 2002, Cramer et al., 2001)

We propose here use of basic student friendly molecular modeling tools in classroom teachings and laboratory practices. Engineering students understand the Newtonian Mechanics very well and, therefore, Molecular Dynamics (MD) is an apt part of molecular modelling approach in getting the students involved in their own learning by doing the simulations. The MD calculations are based on estimating the net force working on each molecule of the system from the gradient of the potential field and then corresponding displacement and motion, using the Newton’s Second law of motion. Familiarity with the basic laws of physics makes the engineering students to grasp the concept better. Molecular simulations also bring the innovation in the method of synthesis of compounds and their characterization.

In this work an attempt was made to help the undergraduate engineering students in better understanding of chemistry through a molecular dynamics simulation workshop.

Methods

Simulation engine used here was GROMACS 5.0(Berendsen et al, 1995, Lindahl et al., 2001, Berendsen et al., 1984) which is an open source code for performing MD simulation. GROMACS simulates a Newton 2nd law of motion for various systems ranging from hundreds to many millions of atoms. GROMACS can handle biological systems like lipids, proteins and amino acids, but since GROMACS can also calculate non-bonded interactions very fast, it is also widely used for non-biological systems like polymers, liquid-liquid extraction, metal ion extraction etc. This program is very user-

friendly, where all parameters and topology files are written in 'C' language. It contains many fail safes inbuilt in the program, if anything goes wrong during simulation clear error warning gets displayed on the command prompt. During simulation, GROMACS also notifies to the user the number of steps completed out of the total number of expected steps and when the simulation is likely to be over. There are also many inbuilt tools in GROMACS for analysis of trajectories and physiochemical properties, so there is no need to write separate codes for analysis of the data generated by MD simulation. CHIMERA (Pettersen et al., 2004) and VMD (Humphrey et al., 1996) were used in this workshop as basic visualizer as they are easy to operate.

Procedure Followed

Considering that the training in molecular simulation is so distinctive from the conventional classroom room practices, a one month intensive workshop was conducted on molecular dynamics (MD) for 1st year undergraduates. This was an innovative approach to teach chemistry and various molecular processes to the engineering and technology students. The workshop was conducted in the Information Processing Centre of Institute of Chemical Technology (Mumbai) during the summer vacation of 2015. The choice to participate in the workshop was given immediately after the semester examination. Only those students, who were interested in learning something new, therefore, participated. A total 30 students from various departments of the University like Chemical Engineering, Food Engineering and Technology, Dyestuff Technology, Pharmaceutical Sciences and Technology and Polymer and Surface Engineering participated in the activity. Some of the students were from other Engineering Institute. All these students had basic working knowledge of chemistry; therefore, they were perfect candidates for the workshop.

The aim of the workshop was to encourage students to utilize molecular dynamics (MD) as a tool for self-learning chemistry by exploring various physical processes that occur at the molecular levels. Students were also encouraged to probe into various input parameters for the same system and their effects on physical and structural properties of the system. During the 1st week of the workshop, the students learnt the installation of open source code, GROMACS and later went through a common tutorial with hands-on-experience on basics of molecular dynamics. GROMACS helps in studying the interaction of compounds in the solutions as a function of temperature and pressure. The utilities built-in the code aid in the calculation of local structures as radial

distribution function and macroscopic properties such as diffusivity coefficients, densities, viscosity and potential energies of the systems. GROMACS simulates long range interactions in the liquid state, which appears due to distinct molecular interactions. Short range interactions are also very important to study as they give the idea about the coordination structures of a given species in the solution.

Initially students struggled while drawing structures of the compound and then listing the each atom name in input file with the respective partial charges on of every atom. The main points was not to miss any atom while writing the input file and then assign those correct charges, so that when they run the program, they could get overall charge neutral on the molecule and not any atom appear in unbounded form. Since the molecules of interest were non-biological in origin, participants needed to search for the forcefield parameters in various research publications and also needed to specify the bond length and bond angles between the atoms. This whole task of writing an initial input file was very lengthy and exhaustive process for the students. Any minor mistake would result in the error message, which got displayed on the computer screen e.g. system with non- zero charge, bonds, bond angles and dihedrals not found etc. few of the students thought that they can't follow this lengthy and tiresome process of writing an input file and they left after 3-4 days, but at the same time they also realized that learning and gaining knowledge from this activity is tremendous, so they eventually rejoined the program.

At the end of the first week, separate small projects were given to each of the students, which they could work on their own for next three weeks. These projects were linked so that each one would compare the results with others as well work towards a bigger project where they could see the direct implementation of their simulation results, in addition to estimation of some physical properties of the compounds which could be compared to the data in literature for validation.

The system considered for the workshop was mostly liquid-liquid extraction. Liquids are specifically very alluring to study by MD simulations because, even though they don't display macroscopic arrangement of solids, they tend to acquire distinct arrangement at molecular level (Larry Dukerich, 2015). This liquid-liquid extraction studies involve extraction of various aromatic compounds and metal ions from one phase to another phase either in the presence or absence of ligand. Basically, one project is divided between 2-4 students and each of them worked independently and then compared their data with each other to complete the project.

Impact on Learning

Most of students from different branches of science and technology portray the workshop experience as having a completely different perspective towards the subject chemistry. The students can now draw and visualize the 3-D structures of a chemical compound by using various visualization tools like CHIMERA and VMD. Being able to draw and see the three dimensional structure of species enables the students to visualize the size of molecules, and phenomena like steric crowding and steric hindrance due to the presence of side chains in the molecules. They are also able to appreciate localized charges on different atoms and various inter- and intra-molecular forces of interaction. The charge distribution on the molecules provides the knowledge about the behavior of molecules in various solvents. These candidates familiarized themselves with many LINUX based software which are generally used in molecular dynamic simulations.

They have also learnt about the selection of force-field parameters from various research papers and their used for the MD simulation. In the process, they also learnt how to analyzing the research paper and carryout target oriented literature survey, which is an important accomplishment for students at an undergraduate level. Students were very fascinated by seeing how the input force field parameters affect the result of MD simulations. Many students were simply delighted to observe how varying the temperature affects the various physiochemical properties like viscosity, diffusion coefficient, density etc. of liquid. They have also grasped the knowledge about how to link the various macroscopic properties of different liquids to their molecular structure. This workshop also enabled them to understand about short-range interactions and long range interactive forces. They also learnt about the cut-off distances and periodic boundary conditions of the simulation box. Molecular dynamics is a real-time and interactive study, which enabled the students to visualize various chemical reactions at the molecular level, and to establish a relationship between chemical reaction equations and various molecular interactions. The participants seem to learn better by observing chemical reactions and extraction of compounds as a time dependent process. Students now can construct perceptive and comprehensive model of various atomic interactions in their mind so that they can comprehend the chemical reactions (Melanie et al., 2015, Pallant and Tinker, 2004).

Figure 01. Extraction of aromatic hydrocarbon. The molecule represented by orange sphere model is the principle compound which is getting extracted from dodecane phase (represented by red lines model) into the extractant (represented by left side of image i.e the combination of blue-yellow and grey sphere model)

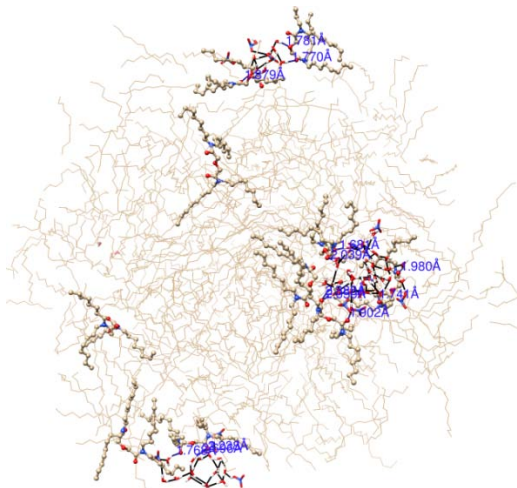


Figure 02. Cluster formed by the extractant (ligand) in the organic phase. The molecules represented by stick model are the ligands which are forming cluster with each other and with some water molecules and nitric acid molecules (represented by stick model) in the dodecane phase (represented by grey lines in the background)

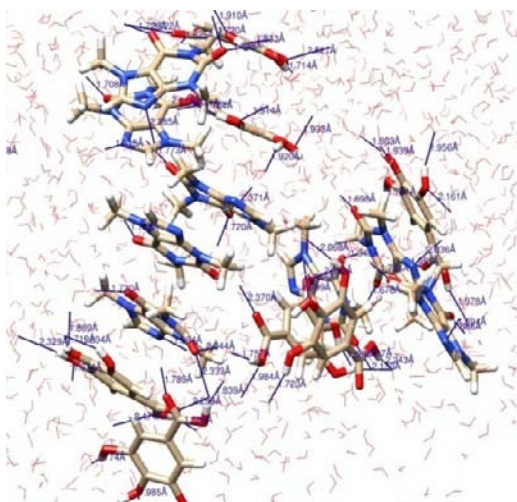


Figure 03. Pi-Pi stacking formed by the tea components in the water. The molecules represented by stick model are the various tea components which possess various aromatic groups and are exhibiting pi-pi stacking in aqueous phase i.e water (represented by grey lines in the background)

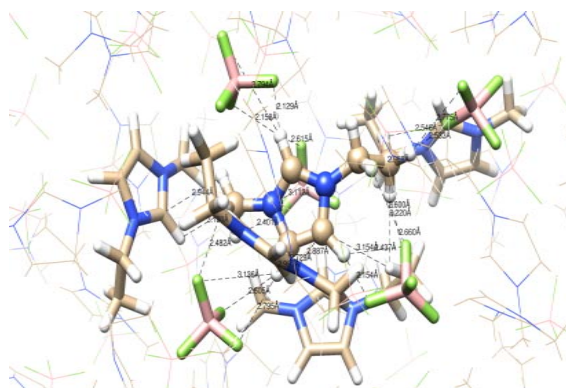


Figure 04. Electrostatic interaction between imidazolium cation and tetrafluoroborate anion. The molecules represented by blue-grey ball and stick model and stick model is the imidazolium cation which is interacting with surrounding tetrafluoroborate anions (represented by green-pink stick model)

Without proper analysis of any simulation there is no meaning of doing it. These students have learned how to analyze the simulation data by calculating various properties like densities of the solution, the diffusion coefficient of various species in the solution, viscosity, radial distribution functions and total energy of a system which gives them idea about the stability of the systems.

They have also done structural analysis of the systems to determine the first and second coordination shells of the particular species, which facilitates understanding the coordination structures and the coordination number of the species in the solvated conditions. For better understanding of extraction process, students have also converted their MD trajectory files into the movie with the aid of VMD software, in which they can actually visualize the movement of molecules with respect to time and see how the molecule of interest is getting extracted as shown in Figure 01. They have also analyzed various molecular clusters formed during the simulation in the box as shown in Figure 02. Molecular clusters are the aggregation of the same or different molecules at a

specific site in the simulation box. Molecular clusters have been previously studied for various organic and inorganic systems by performing MD simulations (Sabelli, 1994, Flöck et al., 2006, Singh et al., 2015). The students have also become very observant and they could easily spot the intermolecular interactions, e.g. π - π stacking between the aromatic compounds (Tavagnacco, Letizia et al., 2011) dipole-dipole interaction between the molecules, electrostatic interactions between the oppositely charged species, etc. Examples of π - π stacking and electrostatic interaction analysed by the students are shown in Figure 03 and Figure 04. Most of all the participating students learnt to keep patience while doing the MD simulations, as these calculations take from a few minutes to a whole day to complete depending upon the configuration of the machine.

To our delight, we could see these students working enthusiastically, spending longer times in understanding more the structures of each molecule and of the molecular clusters. Later when participants discussed about this workshop among their classmates, we got many new requests from the other students who were not the part of the workshop initially. We allowed the new students to join the workshop who approached us within the 1st week of the workshop but many more students who approached us later, we couldn't take as we had limited resources and the initial phase of the workshop was over. The other participants helped the new joiners while writing the input files. Once the students started getting conclusive results, they were very determined in completing the given task and learning new techniques in the field of molecular simulations. The experience has changed the way now these students learn chemistry and physics of the engineering systems that they encounter. Here is the feedback which we got from the one of the first year undergraduate students, who had attended molecular dynamics workshop.

“Molecular Dynamics Workshop was a great experience. It introduced me to an entire new world of chemistry- describing how molecules look, how they interact with each other, etc. The workshop helped me by easing the process of understanding chemistry as it is and not as it is in the books. In lectures, we are asked to imagine how molecules react (however imagination is limited), but using Chimera we can build molecules as we want and of any complexity. We get a 3-D overview of how the molecule is. Also, simulating the systems was really fun. Simulating the molecules helps in knowing the behavior of these molecules with each other. It can help us to predict how molecules will behave in different varying environments. We were taught how to analyze a given

result of the simulation. We analyzed the results by finding possible interactions between atoms, looking at the molecule's affinity for different solvents when mixed together, checking for the variation of density with temperature and lots more. This workshop has also helped in building team-working skills as we all worked on different parts of the project as a team. The workshop was valuable and was worth dedicating my summer vacation. I hope to learn more regarding molecular dynamics and attend similar other workshops. It is a good idea of learning something beyond the lectures!!!”

Another undergraduate student of chemical engineering wrote:

“A few months ago, I got an opportunity to work on a project involving Molecular dynamics and Simulations. After an introductory workshop that taught us how to use the software, we were each given a system to work on – for the extraction of metal ions from nuclear waste. But what I learnt along the way was much more than that. Essentially, it allowed us to study complex phenomena by the visualization of the structures, interactions and dynamics of the atoms and molecules. Further, by sequentially displaying a series of static frames, of the different states of the same molecule, I was able to create an animation that helped us see the behavior of atoms over time. Although under supervision, I was given the freedom to experiment with the software, “mess around” with the models, and try many “what-ifs” to see what would happen. This process of trial and error helped us learn more, than by simply following the rules. By interacting with the simulations ourselves, through the adjustment of various parameters and inputs, and by watching the results, I was able to construct our own mental pictures about the important physical and chemical concepts embodied in the simulations. I was able to understand certain aspects of chemistry, that no textbook or teacher could ever explain. After all, it is said a picture speaks a thousand words. Consequently, a movie is worth a 1000 pictures, and a model is worth a 1000 movies. Naturally, then, a model provides a much larger intellectual space for learners to explore. The experience was truly enriching and profound lessons were learnt, beyond those of the ordinary classroom.”

Outcome of the activity

This activity also encouraged research in the field of molecular modeling at undergraduate level. After finishing the one month of the workshop, almost all the students kept on working on their own beyond the workshop and completed a set of

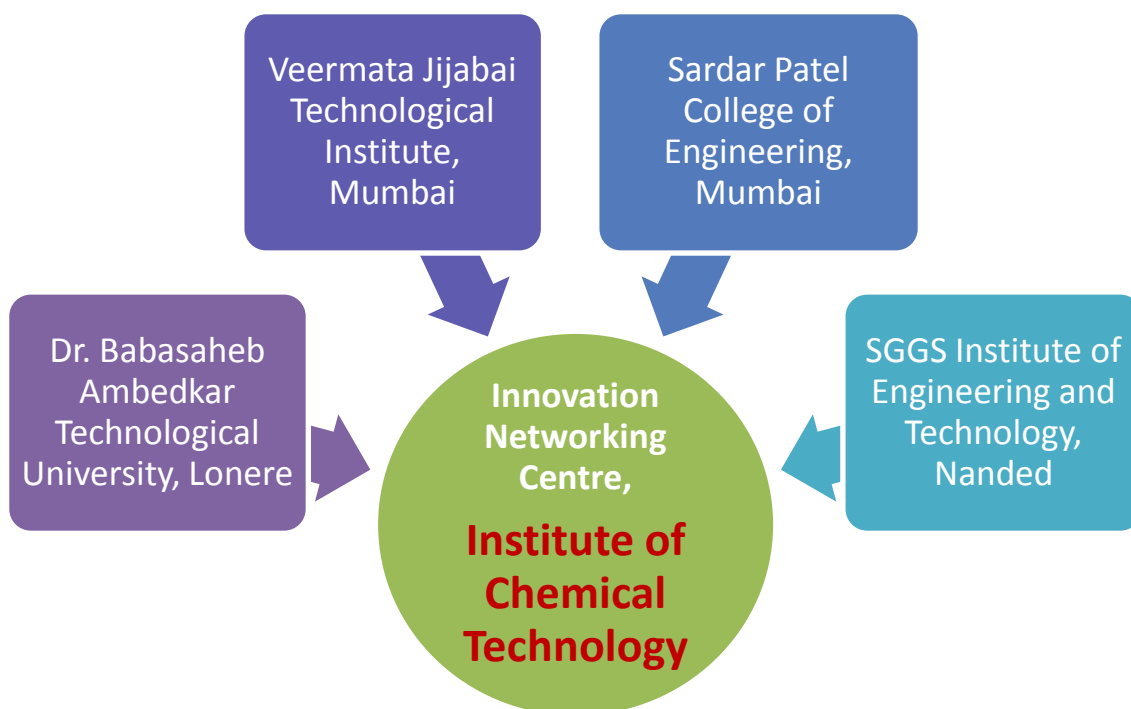
projects of their interests in spare time along with their regular lectures and practical laboratories in just last three months. Their interest in continuing with the project shows their increased interest in the basic science. The quality of work done by these students is good enough to publish papers in international journals. Some of the students also presented a poster on MD simulation in technical fest and won prizes too. Beyond that many of the students further want to take on new projects in the field of molecular dynamics on the topics of their interest.

Similar types of workshops could be conducted in other engineering institutes to encourage students for better understanding and learning of basic chemistry. We have already conducted similar type of workshop in Dr Babasaheb Ambedkar Technological University, Lonere in addition to this workshop and got positive response from students there. Other institutes have also requested us to conduct the similar workshop at their campus. We have developed a MD group which includes group of students participated in the workshop and then we are planning to conduct the similar workshop every year to include fresh students in the group and students participated in previous workshop can help during the training of fresh students. In this manner we can continue the chain every year, even after senior students from the group leave because till then new students will be in the MD group to help in the training of fresh batch every year.

Conclusions

Molecular dynamic simulation has been implemented for the first time as a teaching tool for undergraduate students in the Institute. This workshop also enabled them to understand chemistry better by relating their theoretical knowledge of chemistry to bulk experimental properties. The ability of modern software to rapidly convert numerical data into understandable three-dimensional representations cannot be ignored. Molecular modeling and simulation is clearly becoming a valuable research tool, which must be included at the undergraduate level.

TEQIP Innovation Networking




Project Supported by
Ministry of Human Resources and Development, G.o.I.
and
Government of Maharashtra
(1st July 2014-31st August 2015)







Institute of Chemical Technology (ICT) formed in 2014-15 a virtual **Innovation Networking of TEQIP Institutes in the State of Maharashtra** in the Networking Projects to share existing infrastructure and expertise to innovate New Products/ Processes/ Systems. This project is a special pilot project to enhance the capability of the partner Institutes for developing Innovation Environment at their Institutes. **The following TEQIP Institutes signed MoU with the ICT on 1st April 2014.**








Institute of Chemical Technology, Matunga, Mumbai (**as Lead Institute**)
Veermata Jeejabai Technological Institute, Matunga, Mumbai
Dr. Babasaheb Ambedkar Technological University, Lonere.
Sardar Patel College of Engineering, Mumbai
SGGS Institute of Engineering and Technology, Nanded




The project is supported by Ministry of Human Resource and Development and Government of Maharashtra. The Innovation Networking of the technical institutes in Maharashtra is expected to address needs of regional industries and society, in general, converting innovative prototypes for demonstration and possible commercialization. The project has supported out-of-box ideas to develop proof of concept. The project has been conceptualized and coordinated by Professor V. G. Gaikar, Bharat Petroleum Professor of Chemical Engineering in ICT. The ICT has taken complete responsibility of administration of the projects, including procurement and finance so that innovators are freed from administrative issues.

	<p style="text-align: center;">Prof. V. G. Gaikar, FNAE Institute Coordinator, TEQIP, ICT.</p> <p>Research Interests: Renewable Energy sources, Synthesis of nanoparticles for photochemical generation of hydrogen, CO₂ sequestration by reactive sorption, Molecular simulation of adsorptive separation processes and Design of selective ligands, Process Intensification, Natural products and Green Technology processes, Hydrotrophy, Surface Science and Engineering.</p>
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	<p style="text-align: center;">Prof. A. B. Pandit Department of Chemical Engineering, ICT.</p> <p>Research Interests: Multiphase Reactor Design, Cavitation Phenomena, Pollution control, Bubble Dynamics, Acoustic signal processing, Mixing and Hydrodynamics and Cavitational Transformations.</p>
	<p style="text-align: center;">Dr. P. R. Nemade.</p> <p>Department of Chemical Engineering & Oils, Oleochemicals & Surfactants Technology, ICT.</p> <p>Research Interests: Membranes, Waste Management, Carbon Nanomaterials</p>
	<p style="text-align: center;">Prof. M. D. Teli</p> <p>Department of Fibres And Textile Processing Technology, ICT</p> <p>Research Interests: Coated, Plasma modified Sound barrier and Technical textiles. Specialty finishes with antibacterial and fragrance and water repellent properties. Super absorbents and medical textiles.. Chemical Processing and Modification of Natural and Synthetic fibers and Thickeners.</p>
	<p style="text-align: center;">Dr. R. D. Kale</p> <p>Department of Fibres & Textile Processing Technology, ICT.</p> <p>Research Interests: Effluent treatment using nano particles, Application of nano emulsions in Textiles, Synthesis and application of nano particles, Use of Polyelectrolytes Multilayers for imparting Novel Properties to Textile Polymers, Green Composites</p>
	<p style="text-align: center;">Dr. Ratnesh Jain</p> <p>Department of Chemical Engineering, , ICT</p> <p>Research Interests: Novel Drug Delivery Systems, Nanoparticulate Drug Delivery, Drug Delivery Devices, Confocal Microscopy, Preclinical Imaging, Vaccines, Infectious Diseases, Microscopy Radioimaging Techniques, Cellular Models.</p>
	<p style="text-align: center;">Dr. Prajakta Dandekar Jain</p> <p>Department of Pharmaceutical Sciences & Technology, ICT</p> <p>Research Interests: Polymeric nanoparticles for drug and nucleic acid delivery, Pulmonary infections and inflammations, development of cellular models for pre-clinical research (2D and 3D cell culture), tissue engineering.</p>

	<p>Dr. Y. S. Mahajan Department of Chemical Engineering, DBATU, Lonere. Research Interests: Reaction Engineering and catalysis, Reactive separation, Reactive and Catalytic Distillation, Energy Engineering.</p>
	<p>Dr. M Sadaiah Department of Mechanical Engineering., DBATU, Lonere. Research Interests: Machining of Advanced Materials, Micromachining, Nanomachining, Tool Condition Monitoring, Photochemical Machining, CAPP.</p>
	<p>Dr. V. B. Tungikar Department of Production Engineering, SGGSIET, Nanded. Research Interests: Finite Element Analysis, Heat Transfer, Composites.</p>
	<p>Dr. Neetu Jha. Department of Chemical Engineering and Physics., ICT, Mumbai. Research Interests: Nanotechnology, Graphene</p>
	<p>Dr. V.H. Dalvi Department of Chemical Engineering, ICT Mumbai. Research Interests: Molecular simulation, solar energy</p>
	<p>Dr. V. D. Gotmare Head Textile Manufactures Dept, VJTI, Mumbai Research Interests: Textile designs</p>
	<p>Dr. N.R. Raykar Department of Mechanical Engineering, SPCE, Mumbai. Research Interests: Mechanical designs, Stress Corrosion Cracking</p>

	<p>Mrs. Vidya P. Joshi Department of Electrical Engineering, SPCE, Mumbai Research Interests: electronics</p>
	<p>Mrs. Anupa Subnis Department of Electrical Engineering, SPCE, Mumbai Research Interests: Visual Homing</p>
	<p>Dr. Naik Department of Mechanical Engineering, DBATU, Lonere</p>
	<p>Dr. Chavan Department of Mechanical Engineering, DBATU, Lonere</p>

Project Assistants working on Innovation Networking:

- Nikit Nair.
- Pravin Chavan.
- Prachity Wankhede.
- Nikhil B Ladhe.
- Rahul R Fulmali.
- Shirish Kadam.
- Rohit A Khake.
- Parija R Ghordadekar.
- Tejal Pant.
- Ronak Gudhka.

Ph.D. Students (VGG Lab) working on Innovation Project

- Vishal Sawant
- Pravin Bote
- Aditya Koli

INN Office Staff:

Neha Pisat (Accounts Assistant)

Ketan(Office Assistant; upto Oct 2014)

Background of the Innovation Networking of TEQIP Institutes

The Ministry of Human Resources & Development, GoI, invited ICT to participate in a meeting on 1st August 2013, to brainstorm on the activities of TEQIP to improve Industry – Institute of Interaction along with IIT, Kanpur, IIM-Calcutta and Indian school of Business, Hyderabad, amongst other Institutes. ICT is known to have long nurtured organic links with Chemical and Allied industries and is recognised by AICTE and CII as the Best Institute for its symbiotic interaction with the Industries. It was decided in the meeting that ICT shall be proposing a model for Industry-Institute interaction.

ICT conducted a meeting on 11th September 2013 with 28 TEQIP Institutes from Western India, i.e. Maharashtra, Gujarat, Madhya Pradesh and Rajasthan. Further, on 25-27th September 2013, ICT conducted ‘TEQIP Innovation Meet’ which was also attended by TEQIP institutes from rest of the country. ICT had presented the project concept to develop a Research & Technology Park in collaboration with partner Institutes and Industry in these meetings. The need of establishment of **Innovation and Technology Park** was acutely felt by all participants to convert the research done in laboratories in their institutions. However, considering the enormous investment required for establishing such a park and longer gestation period associated with such parks elsewhere, ICT was further asked to propose Networking Model for enhancing technology development for industries and society in a meeting conducted on 11th October 2013 by MHRD/NPIU.

This proposal for **Innovation Networking of TEQIP Institutes in the state of Maharashtra** is a result of meetings at MHRD, the brain storming sessions held between different Institutes who are willing to partner with ICT. The Innovation Networking involves use of current infrastructure and core strengths of each partner institute to develop innovative products or processes for commercialization. The Network is expected to address needs of regional industries and society. Currently five Institutes have formed a cluster for innovation and many more are willing to join the program. It is also hoped that the spirit of innovation shall be spread to other states throughout the country and to enthuse young engineers and technologists for entrepreneurship. ICT has agreed to reach to other Institutes under TEQIP and without TEQIP to provide a helping hand to promote this spirit of Innovation.

Need of Innovation

Research is a regular activity at major Universities and academic Institutes in the country. All TEQIP supported Institutes, in particular, have increased their research activities significantly

in the second phase of the TEQIP project. However, converting the research output in Technology is hindered by lack of cohesive infrastructure. It is unlikely that such infrastructure shall be built in near future anywhere in the country. At the same time, the faculty at different colleges need to understand that the process/product development is not innovation and for technology transfer the route is long. Most innovations require partners from other disciplines and thus creation and operation of Innovation Networking of Indian Institutes (INN) may become imperative.

Project Scope & Assumptions

- The Innovation Networking involves use of current infrastructure and core strengths of each partner institute to develop innovative products or processes for commercialization.
- It is expected to address needs of regional industries and society.
- Each project is provided for components for the prototypes, contingency, travel and hiring services if facilities are not available at any partner institutes.
- The IPRs for the new products/processes, if any, shall be equally shared amongst the Partner Institutes involved in the development of the unit. All the Institutes shall also share the cost of filing patents and maintenance of it equally.
- Innovation Networking projects should lead to new product(s) and/or new processes or new system(s) for implementation in Technical and Educational Institutes.
- The equipments developed in the project shall remain with the Lead institute of the project but shall be allowed for use to other partner institutes, as and when necessary in consultation with the lead institute.
- The cost of operation and maintenance of such units shall be jointly shared by the partner institutes.
- No procurement of ready-made equipment shall be permitted unless it is a unit required by regulatory bodies.

Benefit of the Project to Partner Institutes:

- (i) Each project is expected to lead to fabrication of a new unit/product/process for further research and technology development for implementation.
- (ii) The IPRs for the new products/processes, if any, shall be equally shared amongst the Partner Institutes involved in the development of the unit. All the Institutes shall also share the cost of filing patents and maintenance of it equally.
- (iii) Each Institute is free to adopt policies of its own for its share of IPRs so jointly generated.

Institute of Chemical Technology, Matunga, Mumbai, is the Lead institute of the Project.

Project Executive Team from ICT

No	Name	Designation	Email ID	Phone
1	Prof. V G. Gaikar	Professor and Project Coordinator	vg.gaikar@ictmumbai.edu.in	9920446256
2	Prof. A.B. Pandit	Member	ab.pandit@ictmumbai.edu.in	9920408067
3	Dr. P.R. Nemade	Member	pr.nemade@ictmumbai.edu.in	022-33612101
4	Dr. R.D. Kale	Member	rd.kale@ictmumbai.edu.in	022-33612813
5	Dr. V.H. Dalvi	Member	vh.dalvi@ictmumbai.edu.in	022-33612101
6	Dr. Neetu Jha	Member	nr.jha@ictmumbai.edu.in	022-33612101
7	Dr. Ratnesh Jain	Member	rd.jain@ictmumbai.edu.in	022-33612029

From Project Coordinator of INN

Innovation shall be a key parameter today in order to survive in the global competition. The academia and research fraternity need to work together to develop competitive technologies and products that can support Indian industries as well as society in general. It is unlikely that one Institute will have expertise in all areas and cooperation among different institutes and even industries, to share expertise and resources, may become imperative.

The MHRD had invited the PI, a couple of years ago, to brain storm on the activities of TEQIP to improve Industry –Institute of Interaction, along with IIT, Kanpur, IIM-Calcutta and Indian school of Business, Hyderabad, amongst other Institutes. ICT is known to have nurtured organic links with Chemical and Allied industries for long and has been recognised by AICTE and CII in 2013 and 2014 as the Best Institute for its symbiotic interaction with the Industry in Chemical Engineering and Technology. A concept to develop a Research & Technology Park in collaboration with partner Institutes and Industry in Western India was presented by the author in these meetings. The need of establishment of **Innovation and Technology Park** was acutely felt by all participants to convert the research done in different laboratories.

The **Innovation Networking of TEQIP Institutes in the state of Maharashtra** has been a result of the meetings at MHRD and the brain storming sessions held at different Institutes in Maharashtra. The project was whole heartedly supported by the State of Maharashtra and the National Project Implementation Unit (NPIU), TEQIP. It was envisaged that the Innovation Networking would use current expertise and infrastructure available at the partner institutes to develop/create prototypes for technology development and transfer. It was also hoped that the spirit of innovation would be spread to other states to enthuse young engineers and

technologists for entrepreneurship. ICT has become now a hub for networking with other Institutes under TEQIP to promote this spirit of Innovation.

ICT took the initiative to form a virtual network of Institutes in the State which promised to bring together different engineering disciplines to build products and prototypes. Although, initially planned for Western India, the scope was reduced to the state of Maharashtra because of funding pattern of TEQIP where the State was also expected to put in its own share in the project. ICT's close relationship to the chemical and allied industries has led, in the past, to relevant research programs with a high level of innovations, large consultancy programs, a dynamic curriculum development process and a high level of involvement from the industry. In Chemical Engineering, its contribution is well recognised by its peers and its highly motivated and qualified faculty and talented students have an outstanding history of academic achievements. ICT thus presented a role model to promote the Networking activities. Since ICT has expertise only in Chemical Engineering, it invited Institutes having expertise in other disciplines to partner with it in the proposal which was formally put up to the TEQIP/MHRD.

After a delay of few months, the final funding was approved by NPIU through TEQIP, for the Innovation Networking in Maharashtra in March 2014 but funds were received only in June 2014. Out of original 9 partners, finally 5 Institutes, Institute of Chemical Technology (ICT, Mumbai), Veermata Jeejabai Technological Institute (VJTI, Mumbai), Dr. Babasaheb Ambedkar Technological University (DBATU, Lonere), Sardar Patel College of Engineering (SPCE, Mumbai) and Shri Guru Govind Singh Institute of Engineering and Technology (SGGSIET, Nanded), signed MoU on 1st April 2014 to launch formally the Innovation Networking with 14 projects. The project is coordinated by the author with his colleagues and PhD students in ICT.

The selected projects were such that each partner institute had to bring in its own expertise for the project. It was not easy to convince the partners to participate in the program. While discussing with different Institutes, the participation of the individuals became more important than collective vision of the group from any Institute. This has to be learnt as a lesson from this program. Most faculty members that we talked to, preferred to work in their own confined boundaries, fiercely protecting their interests. The hurdle also seems to be because of the language barriers, not of English, but the language of each discipline. Each engineering branch follows its own terminology and teaching each other was a task itself. However, the final team emerged from these parleys, and over a set of lectures on the need of innovation at various

institutes. The final five Institutes accepted the spirit of Innovation in its true form. We realised the need of at least one champion from each place to pursue the idea of innovation in collaborative manner. The participation was thus kept entirely voluntary.

Our second hurdle was getting project staff to work on these short term projects. We faced the same problem as the industries, i.e. lack of talented and motivated assistants to work on these ideas. At this time, we took a conscious decision to involve the UG students from all partner institutes. This was a risk as we were working with inexperienced bunch of youngsters, but here was the biggest surprise for all of us. The undergraduate students, who participated, were the most enthusiastic lot that just jumped on the opportunities offered to them. That is when we started rethinking about the ability of the engineering graduates. Until now, they had very a few opportunities, if at all, to work on something on their own. These projects gave them a chance to apply to real systems, whatever they had learned so far. This experience also gave us a hope that the situation does not seem to be as bad as we thought earlier. We need to challenge these youngsters. They actually thrive on the challenges. If they get an opportunity to do things differently, we can change the mind set of the entire population of UGs towards their learning. The projects were quite a hit among these teams, who started learning from each other. We conducted design workshops at different Institutes at frequent intervals where different team members could ask questions or had to answer questions of other members. They had to go back to drawing board each time they realised that their idea has some problem or other. Working on calculations and designs again and again to meet the requirement of the projects became common. Engineering solutions had to be found for every problem encountered.

There were deadlines set up by project coordinator on each project, to complete the basic designs, to prepare a bill of materials, complete with entire set of specifications, online submissions of reports, and discussions for designs and input by each team member. Anyone from the team could bring in an idea and argue over it. Each one had the freedom to look for resources, build more networking and bring skills if the team was lacking in it. Many of these students learnt new techniques, and new softwares on the job, upgrading themselves continuously as they struggled to learn new areas, and other disciplines. If they had not studied the subject earlier, they learnt it from their seniors and brought themselves at par with them. For us, the experience has been satisfying, knowing that we have started a new movement among these students. At DBATU, Lonere, they considered this training equivalent to industrial training. Right from the beginning, we did not put restrictions on the students who wished to be a part of the project. Everybody has been welcome and we had probably a number

of UG students working on these projects, each member doing his/her bit. A few Ph.D. students from my own group pitched in with their experience and provided mentorship to the undergraduates. Communications by the emails and Whatapps, among the team members, exhorting each other to do more to beat the deadline has been common. We could use these communication tools very well.

I wonder if this approach can be adopted formally for education and to promote learning in our engineering education system, where the project building becomes an integral part of the curriculum. Case studies based teaching can build confidence of the graduates as it provides a holistic approach to engineering education. It also means a different teaching methodology which can challenge the students to do their best. The teacher will not just pass on the information to students in the lectures but facilitate the learning from each other while working on a project. It provides an avenue to interact with other disciplines and accountability as a team. The basic initial design stage on paper was cleared in just five to six weeks where many designs were drawn, modified and thrown away but at a point, we had to freeze the designs and the projects moved into building prototypes as per the designs. There was no 100% guarantee of success at the stage, but we knew that we would have to improve on the job.

We faced another hurdle. We had agreed to not purchase any readymade equipment under this scheme. The components of the system, however, could be purchased. But buying the components, as small as resistors costing a few rupees every time the team needed them, was difficult, considering stringent rules of purchase of any WB supported project. Finally, we decided to combine requirements of all projects, as mechanical, electrical, chemical and special materials. Our PhD students' teams fanned out throughout the city finding the vendors who could give the materials, collecting price-lists and registered them with the TEQIP-Networking office as we had to follow the e-store system of ICT to place the orders. The entire purchase was being coordinated at ICT for all partners who were located at remote places. The panel of the vendors was made and registered with the Purchase cell for the procurement of components. The process took more than a couple of months to collate all the information, selecting the vendors with value added services without additional cost. This had streamlined the purchase of all small items and fabrication procedures. Here is another lesson that we learnt, and so the student teams. Accountability of the project funds with specific requirements were identified at the beginning of the project execution. Each partner institute could send the requirement and the system could supply it within reasonable time frame, from approval to PO generation to purchase and payment. The accountants and auditors are unfortunately,

completely different lot. And their review comments led to delays that ate up a lot of time and, therefore, the enthusiasm of the youngsters. The young students were most impatient with the administrative procedures and it adversely affected the project's progress. For bigger items, we had to follow the centrally located procurement management system which almost killed some of the projects. It was only because of persuasion of ICT, that much procurement was completed and I must admit that a few of my PhD students wholeheartedly helped me in the procurement and fabrication processes. The entire exercise turned into Human Resources Development, Project Management and Inventory Management projects, apart from the Product Engineering. One of the Project Assistants will be using this experience for his Project Management internship.

We also realised how difficult it was to get standard materials for building the products. Unlike in US or Europe, where one can simply walk into a DIY store to buy every item of the shelf, we had great difficulty in identifying the suppliers. Many of the vendors did not want anything to do with the University fearing the paper work that they had to do. Some of the suppliers flatly refused to provide a material unless we order them in thousands! Most items are still imported and local vendors were not even aware of their availability. We had been working on a tight schedule and also on tight budget. In four months from the starting of project, the projects moved into fabrication stage and within three months, the first project prototype was ready. Today, we have 10 projects in the final stage of testing, two patents are already filed and more are to be filed soon as extended dead line of 15th May 2015 is approaching.

The success of these projects was not with the project investigators but with the bunch of youngsters and PhD students who sacrificed their vacations to work on the ideas. They have taken ownership of the projects as they have been promised the partnership in the project outcomes. They fiercely guarded their designs, and kept working furiously to meet the deadlines set for them. They learnt corporate working, team work, keeping the cost factor low, machine designs for easy maintenance, protecting own IPRs and respecting those of others. We see now among them healthy respect for other disciplines and appreciating the efforts that each one had put in. It does not mean that we had no problems. There were many. The UGs could work only when they had no lectures and examinations. Some of the teams changed completely. In one project, the entire team but one member, abandoned the project without any reason. But a lone member, a girl student, kept on working. I had to talk with the faculty investigator, to keep the project on for the sake of the spirit of one innovator. She did her part to her maximum ability, but now we will complete the other parts with another team. What was

disappointing was the majority of the students showed indifference towards the innovation activities. They are just happy to pass examination. Not all faculty members were enthusiastic for putting additional efforts in the activity. The Institutes, as whole, took cursory interests in providing necessary infrastructure or support system. It is only the persistent efforts of the few students and faculty members that the innovative products have come out of the entire project. Unless the benefits, tangible as well as intangible, of such activities are visible, it will be difficult to get participation of all stake holders in such activities. But those who participated have benefitted a lot. There was a change in attitude of the UG students who participated in the projects towards their profession. They are able to relate their theory classes with practical applications and thus are 'learning' better. Some of them were happy to do something different which they could not have done in the normal course. A bunch of electrical engineering students from Sardar Patel College of Engineering stands out because of their efforts to learn new things and build a controllable system for microwave reactor. The coordination amongst students had visibly increased and instead of competing, they complemented each other.

This experience probably throws up an answer to the question raised earlier, what we, as teachers, can do about the declining quality of graduates. The answer is probably involving them earlier in their profession, particularly to solve real problems as they progress through their classes. It may not be possible to teach every thing in the class, but learning on job would provide a better education. And each of them may be credited for their contribution in a continuous assessment. The idea is to make the learning an enjoyable experience and at the same time appreciating their efforts in learning. It is believed that such an approach would prepare graduates to meet the demands of the profession when they join the industry and industries' concern of employability of the graduates will be taken care of.

There would also be the possibility of the team members, with their stake in the development, opting for entrepreneurship for manufacturing and marketing their own products. The management of the engineering Institutes may have to take a role in promoting the Innovation Labs with ALL support extended for supply of materials for building such prototypes with clear understanding that the innovators will have a stake in the final IP rights. The participation of technical and support staff, in machining and fabrication, can be also welcome with appreciation in suitable form. The most important part is identification of right type of product and process that can have value addition to students' education. If these products and processes are built at affordable cost, it would help local economy and society. A great care is needed to identify the innovation in each idea that the students may bring to the table. We need to

engineer the engineering education to meet the demands of the country by appropriately modifying the curriculum to incorporate the innovation activity in the syllabus.

If this spirit of cooperation and collaboration catches up with other Institutes, we will be willing to share our experience. I have been conducting Ideation and Innovation workshops at the partner Institutes for a while to see if additional collaborative projects can be built. My own PhD students conduct hand-on tutorials at these colleges for help them in learning the tools necessary for designs, including molecular modelling. We get an overwhelming response immediately, but sustaining the interests over long time has been an arduous task as there are several external factors that can kill the entire innovation spirit. Holidays, examinations, regular assignment submissions in colleges, non-availability of standard materials, lack of teachers, unwillingness of faculty members/management to participate in the innovation activities and biggest of all, the procurement and accounting procedures, all can kill the project completely. It appears that we know what is needed but the process of doing is tiring if you need to chase multiple centres for one job. At this point, the lack of a supporting eco-system is felt acutely by all of us.

Ultimately, we believe that this will lead to innovations that are affordable in local communities, businesses and education. There still remains the question of role of the Government, particularly MHRD, in the process. It may not possible for a country with limited financial resources, to establish full fledged Research Parks costing crores of rupees over a short period of time, as Germany has done for its Fraunhofer Institutes in specific areas. But coordination amongst different institutes might help to work in the form of virtual networking. A set of Networking Innovation Parks at different locations in the country, with dedicated set of people who can facilitate the growth of Innovation, still remains the acute need to promote the Innovation using the largest resource we have, i.e. the engineering students in their third and final years. The success of this small pilot project under TEQIP can probably rekindle the proposal that ICT put forward to MHRD for establishment of Innovation Parks in four corners of the country.

This experience has taught us many more things which we would not have learnt in lab. And given a choice, we would be happy to work again with different Institutes in the country to build their own local networks.

The following projects are currently on under Innovation Networking Project

01. Microchannel reactors for highly exothermic and high pressure and high temperature systems.
02. Sensors for pesticides and biological species in water management and therapeutic materials.
03. Continuous and tunable Microwave assisted reactor system for chemical reactions.
04. Microwave assisted microreactor for chemical manufacturing and natural product extraction.
05. Continuous and tunable cavitation system for chemical reactions.
06. Ultrasound assisted sub-litre size continuous water purifier.
07. Lab-scale self-sustaining pyrolysis system for polymer-to-chemicals reactor.
08. Development of Mosquito-repellent textiles.
09. Laboratory scale inexpensive gas chromatograph.
10. Continuous Enzyme Reactor in microcapillary bundles with reduced pressure drop.
11. Solar energy based biomass to chemical conversion system.
12. Robust Iris Recognition system.
13. Polymer-Metal composite stent(s) for drug delivery in angioplasty.
14. Design and fabrication of Improved Mobile blancher for turmeric processing.

P01-Microchannel reactors for highly exothermic and high pressure and high temperature systems.

Project Investigators:

ICT : Prof. V. G. Gaikar

DBATU: Dr. M. Sadaiah

SPCE : Mrs. Anupa Subnis, Dr. (Mrs.) V.P. Joshi

Need of innovation: There was a need to develop low cost manufacturing technology for microreactors in India for different applications, particularly for high pressure and high temperature applications where glass microreactors can not be used.

Product Developed: Low cost Micro Reactor for highly exothermic and high Pressure & high temperature systems

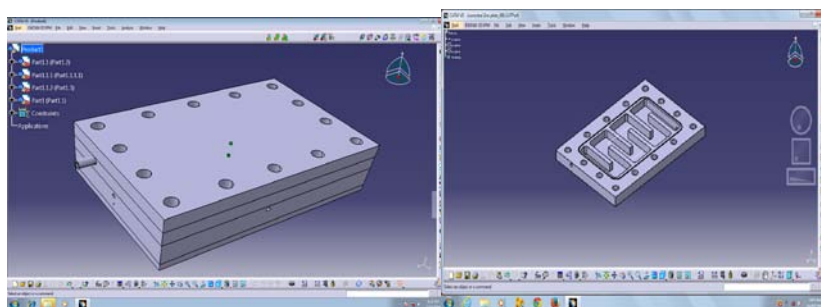
Product Novelty: Low cost Micro reactors

Project Description: Micro reactors are continuous reactors, which distinguish themselves from conventional flow chemistry systems due to small lateral dimensions (<1mm), resulting in an improved temperature control and reduced mass transfer limitations. Micro-reactors are studied in the field of micro process engineering, together with other devices (such as micro heat exchangers) in which physical processes occur. The micro-reactor is usually a continuous flow reactor (contrast with/to a batch reactor). Micro reactors offer many advantages over conventional scale reactors, including vast improvements in energy efficiency, reaction speed and yield, safety, reliability, scalability, on-site/on-demand production, and a much finer degree of process control.

Micro reactors, in their simplest form, consist of a network of micro channels. They may be fabricated from different materials including glass, silicon, quartz, metals and polymers. Optimal material selection depends on chemical compatibility with solvents and reagents, costs and detection methods used in price control. The most commonly used material is glass since it is chemically inert and transparent which allows the visual inspection of micro channels. Metal devices are often used in fast exothermic, heterogeneously catalysed reactions and in different separation processes. Different fabrication techniques are also included in micro-channel production. Photolithography, hot embossing, powder blasting, injection moulding, ultrasonic technologies and laser micro-formation are some of them

Steps Involved in Product development:

- [1] Idea of micro reactor put on drawing paper with help of CAD software's.
- [2] Bill of material is prepared by anticipating machine tools and machine requirement and then Master CAM is used for simulating machining process.
- [3] Raw material and cutting tools are purchased.
- [4] Raw metal blocks are rough finished then finishing operation is done to achieve accuracy and better surface finish.



3D View of Assembly Drawing

Basic Characteristics and Advantages :

1. The small dimensions of micro-reactors allow usage of minimal amounts of reagent under precisely controlled conditions and make it possible to rapidly screen reaction conditions and improve the overall safety of the process.
2. Excellent mass and heat transfer, shorter residence time, a smaller amount of reagents, lightweight and compact system design, catalyst and waste products comparing to equivalent macro scale reactors, laminar flow, effective mixing, better process control and small energy consumption.
3. They could be easily coupled with numerous detection techniques together with the pre-treatment of the samples on the one single chip. But one of the main motivations for the use of micro-reactor technology is the gain in the yield and safety.

Application of Micro reactor

1. Micro reactors, carry out, on a small scale, reactions that are too exothermic or explosive to run at large scale.

2. The ability to miniaturize entire biomedical systems has the potential to reduce the cost of health-care management. There is also special attention paid to the usage of micro-devices in tissue engineering and micro-engineering development.
3. Implementing micro-reactor scaffolds cell migration could be altered together with proliferation and differentiation to achieve functional tissue replacement.

P02- Sensors for pesticides and biological species in water management and therapeutic materials.

Project Investigators:

ICT : Dr. P.R. Nemade, Dr. Ratnesh Jain, Dr. Neetu Jha,

DBATU : Dr. M. Sadaiah.

SPCE : Mrs. Anupa Subnis, Dr. (Mrs) V.P. Joshi, Mr. B.B. Pimple.

Need of innovation: Wide scale food adulteration and pollution of water bodies with different pesticides leads to difficulty in human survival. Hence, a low cost robust sensing device is a must to quantify the contaminant in the system.

Product developed: Sensor for biological species

Product Novelty: Low cost sensors

Project Description:

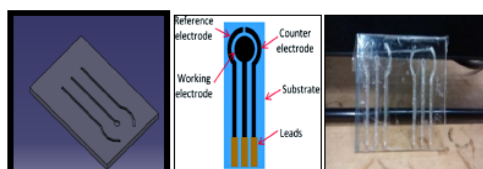
A biosensor is an analytical device which converts a biological response into an electrical signal. A biosensor is a device for the detection of an analyte that combines a biological component with a physicochemical detector component. Carbamate and organophosphate pesticides have come into widespread use in agriculture because of their high insecticidal activity and relatively low environmental persistence. However, overuse of these pesticides results in pesticide residues in food, water and environment, and leads to a severe threat to human health due to their high toxicity to acetylcholinesterase (AChE), which is essential for the functioning of the central nervous system in humans.

Outcome of this project will be low cost micro channels based sensors as import substitutes that can be made available to masses. The basic problem of the current technologies is the cost at which some of these sensors are available in market. New principles shall be built in the products, from manufacturing processes to availability of the enzymes by low cost manufacturing.

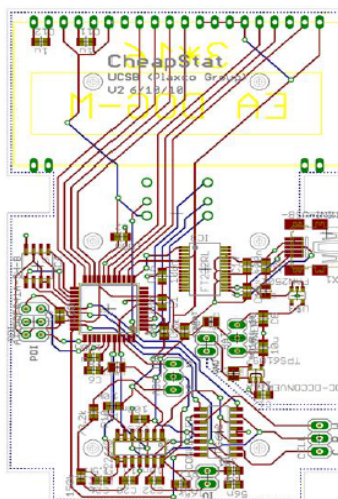
Three institutes ICT, DBATU and SPCE were working on this project with corresponding Project Investigators. Innovation involved in the Project is Low cost Sensors for water management, particularly for pesticides in drinking water is biosensors with microchannels. The expertise provided for the project from ICT is Microchannel System analysis, Chemical Characterization and high end characterization facilities, Chemical Reaction Engineering Analysis. Expertise provided for project from DBATU is Microstructure/ fabrication facility and from SPCE is Electronics and Instrumentation.

Steps Involved in Product development:

- [1] Machining of acrylic sheet
- [2] Application of Silver conductive
- [3] Testing



Electrical design for Cheapstat of Biosensor



P03- Continuous and tunable Microwave assisted Reactor system for chemical reactions.

Project Investigators:

ICT : Prof. V. G. Gaikar,

SPCE : Mrs. Vidya Joshi

Need of innovation: Reactors with microwave heating are not commercially available. For manufacturing high value and low volume chemicals and /or highly heat labile materials, supplying energy to sites of the reactions has been important which is not possible with conventional heating or reactor systems with commercially available reactors.

Product Developed: A continuous reactor with microwave assistance for chemical reactions

Novelty of Product: Combination of microwave energy transfer to reactor systems for catalytic and non-catalytic reactions.

Project Description: Continuous reactors distinguish themselves from conventional chemistry systems resulting in an improved temperature control and reduced transfer limitations. Microwave assisted reactions are studied in the field of process engineering, together with other devices. The microwave-reactor is developed as a continuous flow reactor in contrast to a commercial batch reactor reducing the reaction time to minutes instead of hours and thus making the reactors very compact. Microwave reactors offer many advantages over conventional scale reactors, including improvements in energy efficiency, reaction speed and yield, safety, reliability, scalability, on-site/on-demand production, and a much finer degree of process control.

Three institutes ICT, and SPCE are working on this project. The innovation involved in the project is directed microwave energy transfer to reactor systems for catalytic and non-catalytic reactions. The expertise for project from ICT is Microwave System analysis, Chemical Characterization and high end characterization facilities, Chemical Reaction Engineering Analysis and Process Design. SPCE team provides the support for electronics and instrumentation.

Steps involved in product development:

- [1] Idea of reactor was put on drawing paper with help of CAD software's.
- [2] Bill of material is prepared by anticipating machine tools and machine requirement and then Master CAM is used for simulating machining process.
- [3] Raw material and cutting tools are purchased. Raw metal blocks are rough finished then finishing operation is done to achieve accuracy and better surface finish
- [4]



Fabricated waveguide and cavity of microwave reactor



P04- Microwave assisted microReactor system for chemical reactions.

Project Investigators:

ICT : Prof. V. G. Gaikar,

DBATU: Prof. M. Sadaiah

SPCE : Mrs. Vidya Joshi

Need of innovation: Microreactors with microwave heating are not commercially available. For manufacturing high value and low volume chemicals and /or highly heat labile materials, supplying energy to sites of the reactions has been important which is not possible with conventional heating or reactor systems with commercially available reactors.

Product Developed: A continuous microreactor with microwave assistance for chemical reactions

Novelty of Product: Combination of microwave energy transfer to microreactor system for catalytic and non-catalytic reactions.

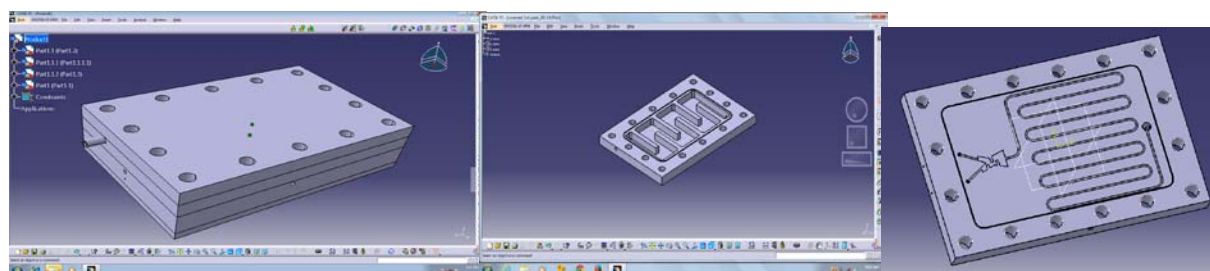
Project Description: Continuous microreactors distinguish themselves from conventional chemistry systems resulting in an improved temperature control and reduced transfer limitations. Microwave assisted reactions are studied in the field of process engineering, together with other devices. The microwave-reactor is developed as a continuous flow reactor in contrast to a commercial batch reactor reducing the reaction time to minutes instead of hours and thus making the reactors very compact. Microwave reactors offer many advantages over conventional scale reactors, including improvements in energy efficiency, reaction speed and

yield, safety, reliability, scalability, on-site/on-demand production, and a much finer degree of process control.

Three institutes ICT, DBATU and SPCE are working on this project. The innovation involved in the project is directed microwave energy transfer to microreactor systems for catalytic and non-catalytic reactions. The expertise for project from ICT is Microwave System analysis, Chemical Characterization and high end characterization facilities, Chemical Reaction Engineering Analysis and Process Design. SPCE team provides the support for electronics and instrumentation.

Steps involved in product development:

- [5] Idea of reactor was put on drawing paper with help of CAD software's.
- [6] Bill of material is prepared by anticipating machine tools and machine requirement and then Master CAM is used for simulating machining process.
- [7] Raw material and cutting tools are purchased. Raw metal blocks are rough finished then finishing operation is done to achieve accuracy and better surface finish



P05-Continuous and tunable cavitation system for chemical reactions.

Project Investigator:

ICT : Prof. V. G. Gaikar

Need of innovation: Several systems are available in market for extraction and synthesis. However, most of these units work for maximum power input having density of a few MW/m³. Most of these systems are not tunable and not suitable for continuous manufacturing because of high energy input. There is no system available that can give the energy input than as 100W/m³- to 1kW/m³. Also each reaction system needs specific designs and need to be tailor-made for the applications

Product Developed: A microwave assisted tunable cavitation reactor for chemical reactions with temperature control

Product Novelty: Tunable, and continuous cavitation intensified reactors for continuous chemical manufacturing.

Steps involved in product development:

- [1] Idea of reactor put on drawing paper with help of CAD software's.
- [2] Bill of material is prepared by anticipating machine tools and machine requirement and then Master CAM is used for simulating machining process.
- [3] Raw material and cutting tools are purchased.
- [4] Raw metal blocks are rough finished then finishing operation is done to achieve accuracy and better surface finish



P05- Cavitation assisted sub-litre size continuous water purifier.

Project Investigators:

ICT : Prof. V. G. Gaikar, Dr. A.B. Pandit

DBATU: Dr. M. Sadaiah

Need of innovation: Water purification at affordable cost remains a constant need. The use of chemicals in water purification also needs to be reduced. Cavitation by either ultrasound or hydrodynamic principles is expected to reduce the chemical consumption in water purification. A portable water purifier using ultrasound will be prepared in the project that should be applicable at domestic level.

Product Novelty: Low cost water purifier system

Product Developed: Water purification based on cavitation.

Project Description:

Cavitation is the formation of vapour cavities in a liquid – i.e. small liquid-free zones ("bubbles" or "voids") – that are the consequence of forces acting upon the liquid. It usually occurs when a liquid is subjected to rapid changes of pressure that cause the formation of

cavities where the pressure is relatively low. When subjected to higher pressure, the voids implode and can generate an intense shockwave. Cavitation is a significant cause of wear in some engineering contexts. Collapsing voids that implode near to a metal surface cause cyclic stress through repeated implosion. This result in surface fatigue of the metal causing a type of wear also called "cavitation". The most common examples of this kind of wear are to pump impellers and bends where a sudden change in the direction of liquid occurs. Cavitation is usually divided into two classes of behaviour: inertial (or transient) cavitation and non-inertial cavitation.

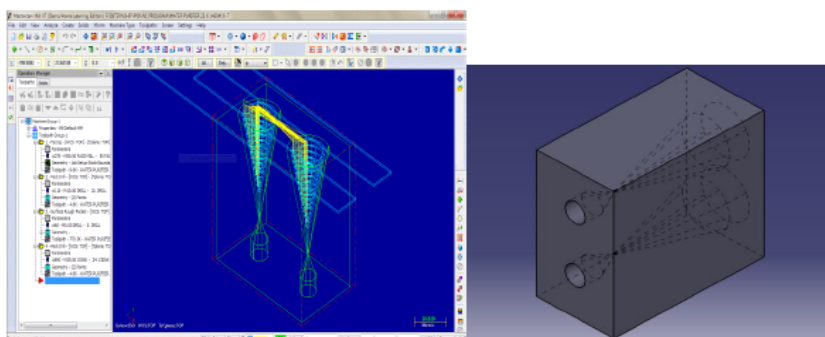
Outcome of this project is a cavitation assisted water purification system. The product would cost less than the current water purifiers available in market or supplement them at reduced power consumption. There is already interest generated in industry for the product.

Two institutes ICT and DBATU are working on this project with corresponding Project Investigators. Innovation involved in the Project is hydrodynamic cavitation based water purification system. The expertise required for project from ICT is Cavitation analysis, Chemical Characterization and Process Design. The expertise required for project from DBATU is Microstructure/ fabrication facility. Deliverables of this project is cavitation based water purification system.

Steps involved in Product development:

- [1] Purchase of raw steel block and cutting tools required.
- [2] Rough machining to steel block.
- [3] Drilling dia. 0.5mm hole with the help of EDM.
- [4] Machining with custom made conical tools.

3D Design and Simulation of ultrasound water purifier



Machining simulation of raw material for ultrasound water purifier

P06-Lab-scale self-sustaining pyrolysis system for waste polymer-to-chemicals reactor

Project Investigators:

ICT : Prof. V. G. Gaikar.

SPCE : Dr. N. R. Raykar, Mr. D N Jadhav.

Need of innovation:

Polymer waste processing is becoming necessity, particularly after a certain number of recycle of the plastics by conventional methods. The current practice of burning waste can be avoided by converting the unrecyclable plastic and electronic waste into useful fuel or recyclable chemicals. Use of electric heated systems is more common in laboratory but electrical energy is an expensive option and it is usually difficult to give energy balance on such system. The gases evolved during pyrolysis themselves must be recycled to provide the energy for the pyrolysis. However, no such system is available at laboratory scale. The units is envisaged for technically evaluating the process for material and energy numbers for developing an economic process for plastic waste treatment which is self sustained by the energy of the gaseous output of the process with all instrumentations for establishing numbers for commercial operations.

Product Developed: Pyrolysis set up for converting waste polymer to chemicals

Product Novelty: Self sustaining Pyrolysis system for converting waste polymers to chemicals

Working Principle:

- Heating of the waste matter and pushing it forward through the screw conveyor
- Separation of char from the gaseous product in the char collector
- Separation of very fine char particles in the cyclone convertor
- Catalytic reactor to improve the quality of the product
- Condensing the fuel vapours from the gaseous mixture in condenser
- Separating the liquid fuel from the gases like methane, carbon-dioxide etc.
- Collection of gases in a gas collector
- Burning of gases in excess air and passing the hot gases through the shell surrounding the screw

Two institutes ICT and SPCE are working on this project with corresponding Project Investigators. Innovation involved in the Project is development of Lab-scale unit for studies in pyrolysis of plastic waste to convert it into liquid fuel. Expertise required for project from ICT is Chemical Characterization and high end characterization facilities, Pyrolysis systems

and Process Design. Expertise required for project from SPCE is Mechanical fabrication and Power system design and Instrumentation.



Pyrolysis System

Future Scope

- The length and the weight of the entire system can be reduced (depending on application) which can facilitate its transportation and can also use the simpler support structure and the flooring of the space where the system is placed will also be a lesser risk getting damaged.
- The functions and effectiveness of char collector and cyclone separator can be combined into one single component.
- A system whose functioning is similar to the reactor, but giving diesel grade fuel can be made.
- The gas instead of being used only for the reactor purpose can also be used as fuel for household purposes after purifying it.

P07-Mosquito-repellent textiles using sustainable and eco-friendly materials.

Project Investigators:

ICT : Prof. M. D. Teli, Dr. R. D. Kale.

VJTI : Dr. V. D. Gotmare.

Need of innovation:

Mosquitoes are known to be very dangerous to humans as reports indicate 1 in 17 deaths caused due to mosquitoes. Thus, there is a need to produce mosquito repellent substances and

fabric substrates. While thousands of compounds have been studied for their use as insect repellents, DEET (n, n-diethyl-m-toluamide) has been used more than any other. A number of insect repellent oils include citronella, cedar, peppermint, lemongrass, and geranium oils . A mosquito repellent substrate includes a fabric which is impregnated or coated with a repellent carrier composition.

Product Developed :

1. Mosquito Repellent cradle cover
2. Mosquito Repellent Shrug
3. Mosquito repellent Gamcha
4. Mosquito repellent dupatta

Project Description:

The project aims to use the minimum amount of mosquito repellent compound in a new form so that its harmful effects if any are limited. There is a scope to chemically modify it to make it enhance its durability on the fabrics. We can also replace these chemicals with natural based oil compounds which will be eco friendly also and non toxic to human being. We can also achieve simultaneous fragrant and mosquito repellent finish in one step.

Two institutes ICT and VJTI have been working on this project with corresponding Project Investigators. The innovation involved in the project includes identification and testing of natural and eco friendly products for mosquito repellency. The expertise required for project from ICT is Development of value added fabrics by way of finishing; Research on the Development of Mosquito Repellent fabric has already been started with positive results. The expertise required for project from VJTI in manufacturing and weaving of fabric, composites and nonwoven materials required for project.

Product Novelty:

1. Cradle cover

Novelty in design:

- a. The designed cradle cover which is given mosquito repellent finish has been divided into four parts and for convenience Velcro is attached to its edges. If any side gets dirty, it can be easily removed, washed and replaced. This will provide enhanced and durable mosquito repellence.

b. For enhanced ventilation and comfort a separate untreated cradle top is provided. This part is attached to the cradle cover with Velcro.

c. The developed cradle cover gives visual side view and is a properly fitted cradle cover.

2. Shrug

a. The concept of mosquito repellent shrug is new.

b. The shrug is attractive in appearance and has good aesthetic value.

c. The sleeves of the shrug are given mosquito repellent finish which will easily prohibit mosquito bites.

d. As the product is worn next to the skin, it will give enhanced mosquito repellence for outing, jogging, in parks etc.

Novelty in Technology Used:

1. The net fabric used for the cradle cover is treated with mosquito repellent using Layer by Layer (LBL) technology which is a room temperature technique

2. Completely natural active ingredient has been used to impart the repellent finish.

3. The active ingredient has been applied in nano form so as to increase the efficacy. This enables reduced concentration of active ingredient required to be used leading to cost effectiveness.

3. Gamcha/ Dupatta:

1. The Gamcha or Dupatta which we have prepared is treated with Modified DEET (MD) by using DMDHEU Resin

2. So the bonding of MD with fabric is covalent bonding and it is able to give us mosquito repellency upto longer duration even after washing of treated fabric.

3. Chemical used is relatively in very low concentration and hence it is quite safe to human health.

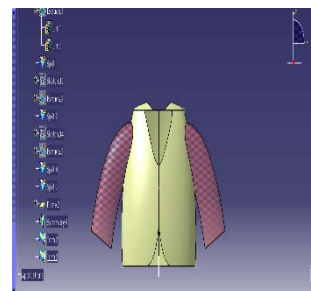
4. The concept of Mosquito repellent Gamcha/dupatta is new and innovative

Steps involved in Product development :

Both the **cradle cover and shrug** have been treated with the natural mosquito repellent using room temperature LBL technology.

- Search for mosquito repellent natural oils
- Procurement of material (active ingredient, auxiliaries, fabric)
- Preparation of nano emulsion

- Conducting trials with different oils
- Standardization of the technique
- Testing: mosquito repellency and mortality (in house), SEM analysis, wash fastness
- Getting fabric treated with standardized technique from outside accredited lab
- Treating required amount of fabric required for product development.
- Testing of final product



Mosquito repellent cradle cover, Mosquito repellent shrug, Mosquito Repellent Gamcha and Mosquito Repellent Dupatta

P08-Continuous Enzyme Reactor in microcapillary bundles.

Project Investigators:

ICT : Prof. V. G. Gaikar,

DBATU: Dr. Y.S. Mahajan

Need of innovation: Enzyme reactors in microchannel are the need of the present day science and also in several industrial operations where packed bed of supported columns in bead form of compressible materials, pressure drop is a major consideration which impacts the operation of reactors. The microcapillary reactors shall use the large surface area to volume ratio, having the enzyme loaded on the substrate on the inner surface of the column. This is using

microchannel bioreactors for biotransformation in pharmaceutical product manufacturing without having any mass transfer limitations and hydrodynamic limitations.

Product Developed: Enzymatic reactor

Product Novelty: Continuous Enzymatic reactor in microcapillary bundles

Project Description:

A) Roller Arrangement:

For etching purpose, initially roller system assembled to carry out etching action inside capillary tube with hydrofluoric acid. Capillary tube filled with concentrated hydrofluoric acid taking various concentrations, sealed both ends with plastic caps and placed over roller arrangement to carry out rolling action. Etched surface was not observed under SEM. Probably due to very small volume of etchant inside capillary, flow restrictions inside it and lack of turbulence proper results had not been obtained.

B) Continuous arrangement with recycle:

For continuous etching action, we used peristaltic pump for continuous passage of hydrofluoric acid taking different concentrations (5, 10, 15, 20, 25 & 40%) to allow it to flow through capillary tube as shown in figure 2. For this purpose we used capillaries having different inner diameter as 1, 2 and 4 mm. During this process, we got best results with 25% concentrated HF for 4 hours of continuous operation.

Outcome of this project is a Low cost enzyme reactor cartridges of different enzymes for different biotransformations for continuous operations to be made available for Pharma industries and science Colleges for educational purpose.

Two institutes ICT and DBATU are developing Enzyme Reactors with reduced operational pressure drop for continuous operations using micro capillaries having supported & immobilized enzymes. The expertise required for project from ICT is Enzyme Technology, Chemical Characterization and high end characterization facilities, Process Design. The expertise required for project from DBATU is Microstructure/ fabrication facility. Deliverables of this project is Continuous Enzyme Reactors in microcapillary with reduced operational pressure drop as cartridges.



Module of the Reactor without Capillaries and A fabricated capillary module



Enzymatic reactor Assembly

P09-Polymer-Metal composite stent(s) for drug delivery in angioplasty

Project Investigators:

ICT : Dr. Ratnesh Jain; Dr. Prajakta Jain, Prof. V G Gaikar

DBATU : Dr. M. Sadaiah.

Need of innovation:

Presently, the bare-metal stent and drug eluting metal stents, which are most commonly utilized by cardiac surgeons, typically cost around Rs. 80,000 per stent. Considering various limitations of these current stent products, such as their lack of biodegradability, issues with biocompatibility and high cost, employment of biodegradable stents is regarded as a promising alternative. Biodegradable stents, approved by the US FDA, are based on lactic acid based polymers (and cost approximately 2000 USD). Current biodegradable polymeric stent also

possesses limited mechanical strength and sustainability within the blood vessel. Thus through this proposal, we aim to develop a biodegradable material, buttressed with metal nanoparticles, to afford it sufficient mechanical strength for developing improved stent products. We aim to use polylactide reinforced with cobalt nanoparticles for this purpose. It is already known that the high radial force and durability of cobalt-chromium alloy enables the construction of stents with improved elasticity, which provides a strong rationale to use cobalt nanoparticles for impregnating on polylactide base. The anticipated favourable mechanical properties of this material, along with the indigenous technology of stent design, are foreseen to reduce the cost of stent development. It is projected that with this innovative approach the cost of our biocompatible stent may be reduced to around Rs 25,000 per stent. Additionally, the dissolution assembly and spray coating machine will be assembled for stent drug release and stent coating.

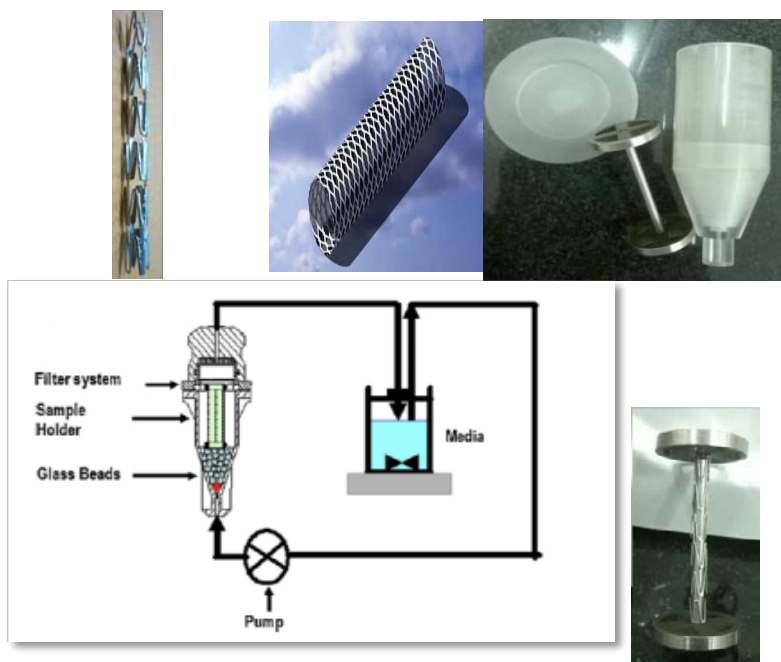
Product Developed: Paclitaxel loaded stain less steel Stents, Stent holder for dissolution testing and modified flow through cell.

Product Novelty: Design of the stent holder which needs to be used for dissolution testing that is for checking the amount of drug being released from the stent surface at any given time.

Two industries Electrolab and Eureka have already shown interest in the product.

Steps involved in Product development:

- a. Development of stainless steel stents from SS hollow pipes.
- b. Development of paclitaxel loaded nanoparticles.
- c. Coating of nanoparticles on bare stain less steel stents.
- d. Development of the sample cell for dissolution testing.
- e. Selection and installation of pump for flow through cell.



P10- Design and fabrication of Solar Energy Integrated Mobile blancher for turmeric processing

Project Investigators:

ICT : Prof. V. G. Gaikar, Prof. A.B. Pandit.

SGGSIET : Dr. B.M. Dabade , Dr. V.B. Tungikar.

Need of innovation: Traditional handling method of boiled Rhizomes causes trampling, mud-mixing, scorching, leading to quality and quantity loss. Labor cost is very high for cleaning Rhizomes, washing, loading, unloading the pan and drying the Rhizomes. The energy required boiling needs to come from solar energy. Utilization of solar energy will make it a renewable energy process.

India ranks first in production of turmeric i.e.701.16 Lac tones from 185.32 Lac hectare of area. Maharashtra produces about 400 MT from 700 hectare area .Turmeric is the dried rhizome of the plant *curcuma domestica* val. syn. *C. Longa* L. The genus *Curcuma* originated in the Indo-Malayan region. Considerable species diversity of *curcuma* occurs in this region. In India about 40 species of the genus including *C. Longa* are indigenous , indicating the Indian origin. Most of the producers use the traditional method for seasoning of rhizomes which is an inefficient and labour intensive with heavy wastages, inconsistent quality. Therefore the proposed blancher with successful implementation can lead to 40 to 60 % improvement in terms of heat utilization, quality and cost. The added advantage is the proposed blancher is mobile and hence convenient to transport and install in any field for turmeric processing. Thus

it will be helpful to the farmers to improve their quality of life through increase in income from turmeric.

Product Developed: Compound Parabolic Collector (CPC) systems are developed for the application of turmeric processing. Steam is generated using Compound Parabolic Collectors (CPC) solar panels

Product Novelty: Use of solar energy for Turmeric Processing

Project Description:

A prototype blancher for processing 100 kg raw turmeric (Rhizomes) is to be designed and fabricated and energy integrated with solar steam generation. The blancher should have facility to load and unload the materials to reduce laborious work in the field. The quality parameters must be better than traditional methods. The blancher method of turmeric processing reduces fuel consumption from 87.5 kg to 20 kg for two 50 kg batches. It also reduces time for processing of turmeric and saves the labour cost. The use of solar energy should make the process still cheaper and environmentally friendly.

➤ **Methodology:**

- Component Design (CPC and Mobile Blancher Unit)
- Fabrication and installation of CPC units and Blancher at SGGSIET Nanded
- Experimentation on Blancher
- Thermal Analysis and Heat balance sheet
- Comparative Study of the process parameters to improve the quality of Rhizomes

Pressurized steam is used for processing. Water has heated in the Pressure Cocker about 15 minutes for generation of required steam pressure and temperature. Then obtained pressurized steam is passed through pipes. After this, steam is supplied to flow meter for regulated steam flow. Steam supplied at various flow rates for taking the readings.. The temperature was measured periodically after every 5 minutes for safety. After taking 3-4 readings we come to conclude the results.

Two institutes ICT and SGGSIET were working on this project with corresponding Project Investigators. Innovation involved in the Project was energy supply for the operation, particularly steam used in the blanching operation is to be generated with solar concentrating system. No such system is available today. Expertise required for project from ICT is solar

concentrators. The expertise required for project from SGGS was fabrication facility and Instrumentation and Control. Deliverables of this project is Solar Energy integrated Improved Mobile blancher for turmeric processing.

Steps involved in product development:

- a. Design of Compound Parabolic Collector (CPC) and Mobile Blancher for turmeric processing
- b. Fabrication and Installation of CPC and mobile blancher
- c. Mounting of instruments and accessories of the entire system
- d. Final Assembly of different parts like 16 CPC Units, Blancher, Steam water separator, Data logger etc.to obtain the maximum output
- e. Execution of the entire system for turmeric processing
- f. Performance analysis for determination of optimum parameter



Fabricated Mobile Blancher unit for Turmeric processing and Steam Water Separator with Insulation Cover and CPC Panels

Innovation Networking Project Management

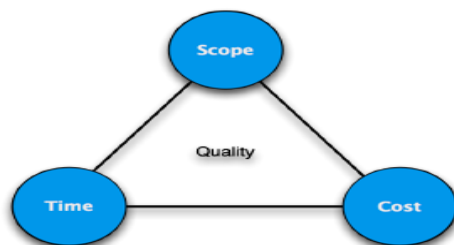
The Innovation Networking Project is in the completion phase with majority of the projects under it is ready with the final prototypes. Satisfactory working of prototypes is being ensured. The proof of concept actually justified the desired output more efficiently. However, further Development is still going on so as to enhance its applicability in a better way as far as its commercialization is concerned.

The deliverables were to build unique designs with novel technological innovations incorporated so as to meet the regional, both social and industrial, needs in a comprehensive manner. ICT along with the partner institutes have taken a first step towards these initiatives and has successfully executed the ideas collectively decided in the planning stage. The brainstorming of all the faculties, research students and other stake holders helped in achieving these milestone.

The portfolio of Innovation Networking included 14 projects, which had the potential of being patented, it was essential to follow a holistic approach at each phase of the projects starting from Initiation, Planning, Monitoring to now the Project Closure. These fourteen projects had very extensive requirements starting from manpower to the physical resources required for the project work. The emphasis was also laid on astute handling of the finances. Since this was a World Bank (WB) sponsored projects, there were stringent procurement guidelines which had to be followed. Everything had to be documented in an organized manner as prescribed in the WB procedures. So it was quite evident that PI needed to adopt all Project Management Body of Knowledge (PMBOK) starting from Project Integration Management, Project Cost, Time, Risk management to Project Stakeholder Management so as to efficiently handle all the project parameters.

There were deadlines set up by the PI on each project, to complete the basic designs, to prepare a bill of materials, complete with entire set of specifications, online submissions of reports, and discussions for designs and input by each team member. Anyone from the team could bring an idea and argue over it. So timely monitoring and controlling the necessary requirement changes has to be taken care off.

Triple Constraints



The successful project Management practice was in managing triple constraints. Aligning with predefined scope is one thing which became very important. If there is sudden change in scope, it would directly affect the project deadline, perhaps even cost escalation could be the outcome. We had to make some changes on the spot considering the technical feasibility of the project. Bit still we had to postpone some of the deadlines considering the difficulties in procurement of materials as well as services. If the deadline of the project is postponed then it also led to increase cost, particularly in arranging the resources and , hiring man power and services. It became very necessary to manage the triple constraints very efficiently , because if one of the parameters was altered, the whole project got hampered leading over budget, time over run or

poor quality. Since this was still a development project, there was always a chance of scope change in terms of change in design.

Project expenses

Innovation Networking of TEQIP Institutes in Maharashtra

(Figures as on 30th June 2015)

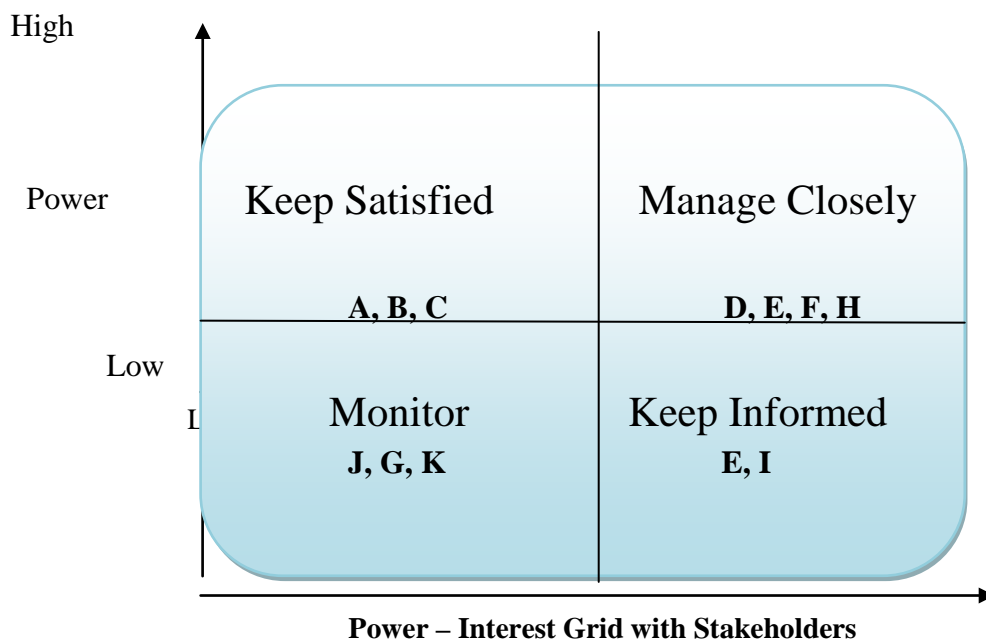
Sr. no	Activities	Sub Activities	Expenditure (in INR)
1.	Equipments	Expenditure on Components of prototype, fabrication of new equipments, Consumables & materials and special equipments procured for complete set up under PMSS	66,90,194
2.	Project Staff	Expenditure of salary to staff	5,49,555
3.	Project Assistantships	Expenditure on Project Assistants	10,04,085
4.	Internship	Expenditure on Internship for Students	0
5.	Meetings and Travel	Expenditure on Travels and Meetings (Academic, and with Industries/ Other Institutions), Lodging & Boarding expenses	363190
6.	Miscellaneous Expenses	Expenditure on Printing materials, stationaries, etc.. and advertisement for recruitment	37,164
		Total Expenditure	86,44,188.00
		Amount Received from SPFU	1,50,50,000.00

Project Stakeholder Management of Innovation Networking

Stakeholders are the entities who can directly or indirectly has the potential to impact or be impacted by the project. The most important thing in Stakeholder Management is to identify all the stakeholders. The project of Innovation Networking is indeed a huge portfolio because it includes lot of Direct & indirect stakeholders. And each and every stake holder is important and can seriously impact or can be impacted by the project.

Stakeholder analysis is a very important part of project management. It is a technique of systematically gathering & analyzing quantitative & qualitative information to determine whose interest should be taken into account throughout the project. It is very important to

assess how key stakeholders are likely to react or respond in various situations. This helps in influencing them to enhance their support & mitigate potential negative impacts. It is made depending on the power & interest of each stakeholders. There is a need to act accordingly to each of the concerned stakeholders, for efficient project outcomes.



Direct Stakeholders

- A. World Bank
- B. National Project implementation Unit (NPIU), MHRD
- C. State Project Facilitation Unit (SPFU), Gov. of Maharashtra
- D. Institute of Chemical Technology, itself
- E. Each partners institutes, (which includes VJTI, SPCE, DBATU & SGGSI & T)
- F. Project Investigators
- G. Team Members

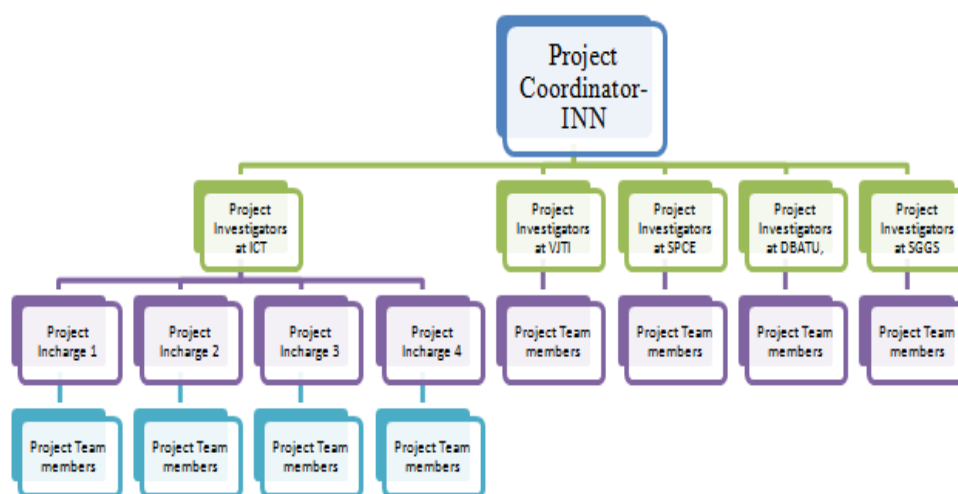
Indirect Stakeholders

- H. Regional Industries
- I. Society
- J. Regional Institutes

Direct Stakeholders are the ones with whom it is advised to work closely and keep informed about the project activities. NPIU & SPFU were the key stake holders. They monitored whether the project is executed as per the WB guidelines or not. Each partner institutes haa a

very important part to play, because they are the ones who are providing their expertise and facilities so as to complete the project deliverables on time. Project Team members are the important asset for any project to be successful. They are the ones who work with tons of efforts so as to accomplish project milestones within time & budget. So there is always a need to monitor their activities and keep informed about the desired project results.

Regional Industries and other institutes as of now have less part to play. Once the product or process is in commercialization phase, there importance will be taken into consideration. Already the Industries have shown interest in the products developed in the projects. The society should also accept the product coming out of these process. One of the product, cavitation based purifier has been already tested at different locations in the Mumbai city. It is really taken care that process used for making certain product in the all the projects are safe, convenient to use, greener & faster and not polluting the environment. So society can also be considered as an important stakeholder because they are the ones who will be benefitted by the outcome of the product



Project Organizational chart for Innovation Networking

Project Coordinator is the Project Manager of Innovation Networking. He chairs the meeting of project review on Innovation Networking. Here Project Coordinator himself is also a project investigator for some of the projects. He ensured satisfactory functioning of each department and pressurized on the Investigators and Team members to achieve each project milestones. Then there are project investigators at each partner institutes. Depending on the participation on number of projects, there are number of investigators assigned to the same project. The main role of the Investigators was to get work done from the respective team members, brainstorming on project difficulties and coming out with possible solutions. Investigators needed to report to the Project Coordinator about the project progress, shortcomings, project requirements and so on. Project Team members formed the base of the organizational chart. If

the base is not strong, the entire structure may get stranded. The project members strongly impacted the project outcome as evident in some of the successful project while some lagged behind substantially.

WORKSHOPS, LECTURES AND TRAINING CONDUCTED BY ICT FOR INNOVATION NETWORKING INSTITUTES

- May 2014 - Innovation Workshop at SGGSIET, Nanded
- May 2014 - Innovation and Commercialization of Research, Workshop conducted at Amravati University
- July 2014 - 1st Review Meeting of the Project at DBATU, Lonere
- July-October 2014 - Design workshops for training undergraduates at DBATU, ICT, SPCE and SGGSIET for the INN projects and additional Innovation Projects –
- November 2014 - 2nd Review meeting at ICT
- June 2015 - Five Day Training programme on Patent Filing, Processing & Drafting at Rajiv Gandhi National Institute of Intellectual Property Management, Nagpur

There were several visits of the project coordinators to all participating Institutes during the project period and other Institutes in Maharashtra to promote the Innovation Networking approach

POSITIVE OUTLOOK OF THE TEQIP INNOVATION NETWORKING PROJECT

- Involvement of UGs in the program-They are trained in necessary skills as per the projects
- Enthusiastic participation of team members
- Team spirit in progress of the project
- Direct application of engineering and scientific principles
- Learning by experience for all participants
- Understanding of all facets of project- design, materials, fabrication, finance, purchase, testing, interdisciplinary input, accountability, deliverables

- Triggering interests among the students for doing something different
- Several offshoot projects from the partner institutes
- Interest generated in other institutes
- Possible Entrepreneurs from the participants
- An immensely satisfying experience

Molecular Dynamics Workshop (30th May 2015-30th June 2015)

Generally the students at the first year level have difficulty to visualize the 3D molecular structures and many lose interests in the chemistry. It was thought to introduce the concept of molecular dynamics(MD) to the students during the summer vacation period. The option was open to all first year students after their semester examination was over. But only total of 27 students registered that accounted for roughly 10% of the first year UGs. Five students from Dr. Babasaheb Ambedkar Technological University, Lonere, also attended the workshop. The first day was general introduction to the MD basics and understanding the approach. From the second day, the hands-on training was provided to each participant by one of PhD students, Ms. Meena Singh, who gave almost four weeks of her time to train this group, starting from the installation of the necessary codes, to executing and solving errors of each and every participant. Initially, the computers from the Information and Processing Centre were used, but when the processing power became the limitation, the action was shifted to Library e-resources, which the Librarian Mr. Amogh Lokhande, graciously extended to the group. In six weeks, the group has completed the objective of the simulations of different systems. The enthusiasm in learning the MD and using it for real systems for predictions was perceptible in all participants. Only a handful left the program midway for personal reasons and yet almost 90% of the participants continued to work on the project to achieve the results in gruelling simulation sessions stretching sometimes over 12 hours on a day.



1st yr UGs giving MD presentation



MD Group of ICT

It was satisfying to know this group appreciates everything that they learnt, probably it was their effort that brought learning to them rather than learning from lectures in class. They are able to correlate their learnings now in their own field. The experiment has shown that if we excite the students to learn the basics on their own, using the new and readily available tools, they are ready to learn, far more quickly without feeling the burden of the learning.

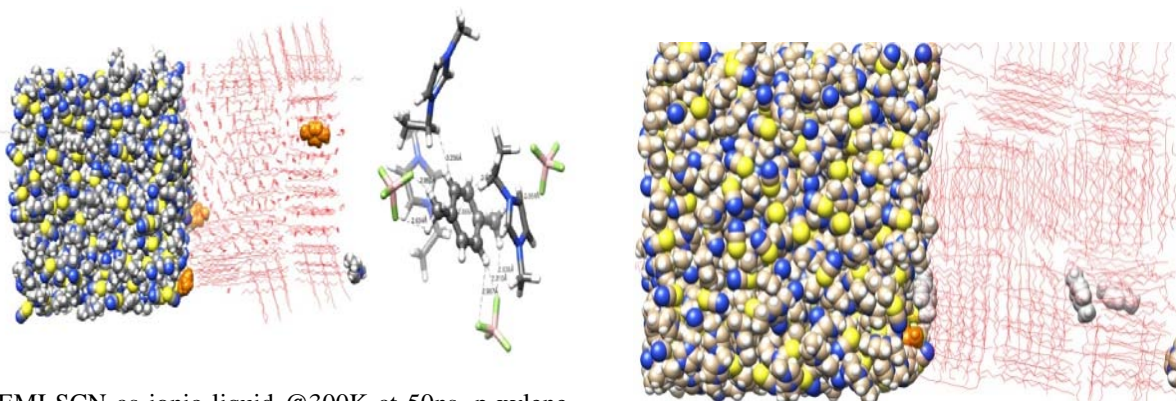
We hope to repeat the same workshop in Summer of 2016 with the help of the group that we trained this summer of 2015 and to build MD group in ICT for learning on own. It may become a regular practice if the workshop is continued from one year to following year. The approach can be also repeated for other subjects where the students find difficulty in learning. Special thanks to Ms. Meena Singh who conducted the entire program tirelessly, IPC and Library Staff for accommodating the boisterous bunch of youngsters in their working environment and facilitated their program.

Extraction of p-xylene with Ionic Liquid Approach

Aditya R. Kamat (S.Y. BPharm, ICT, Mumbai)

A binary mixture of 345 n-dodecane, 500 ionic liquid & 4 molecules was simulated using GROMACS code. to extract the p-xylene from the n-dodecane using 1-ethyl 3-methyl imidazolium(EMI) tetrafluoroborate(TFB) and 1-ethyl 3-methyl imidazolium(EMI) thiocyanate(SCN) as ionic liquids.

The EMI cation gets oriented parallel to the plane of the benzene ring of p-xylene, while the TFB anion was arranged along the axis of the xylene molecule. In the binary mixture, p-xylene present primarily in the n-dodecane starts moving towards the ionic liquid dodecane interface. It eventually gets surrounded by the ionic liquid molecules and therefore gets extracted from the hydrocarbon layer.



For EMI-SCN as ionic liquid @300K at 50ns, p-xylene molecules are seen approach the interface

At 76 ns, p-xylene molecules gets surrounded by ionic liquid and is extracted. (molecule in orange)

Getting to do novel research in the very first year was an amazing experience! The exposure that I got was just huge. Molecular dynamics enabled me to see the molecules in action, changing my outlook about looking at molecules as a whole.

Separation/ Extraction of Dibenzo thiophene from dodecane using an Ionic Liquid

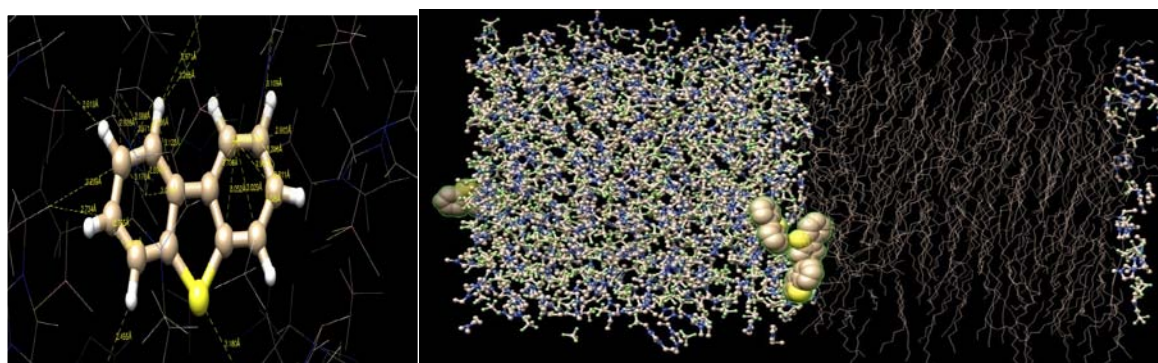
Ameya Harmalkar (S.Y. B. Chem, ICT ,Mumbai)

Crude oil contains a mixture of hydrocarbon compounds; both aromatic and aliphatic, and relatively small quantities of other materials such as oxygen, nitrogen and sulphur. The presence of sulphur compounds in fuel is the major concern worldwide, because the combustion of such fuels generates (SO_x), leading to respiratory diseases, health disorders, environmental pollution and acid rains. The conventional technology for removing sulphur impurities like sulphides, disulphides and thiols i.e. catalytic hydrodesulphurization is highly efficient. Nevertheless, aromatic compounds such as dibenzothiophene, and dialkylated dibenzothiophene show a poor efficiency because of their highly steric structures, thus making it hardly possible to attain ultra-low-sulphur-fuels. Ionic liquids which are also termed as Green Solvents can be used as an alternative to the conventional HDS process.

The present work involves MD simulation of a system composed of the fuel, represented by dodecane and the heterocyclic aromatic compound dibenzothiophene (DBT). A biphasic system comprising of two systems; i.e., dodecane with DBT, and an Ionic liquid, is simulated to approximate the behavior of the extraction system comprising of an Ionic liquid. The study is expected to provide us with the efficiency of the particular ionic liquid as well as energetic and kinetic information of the process, and a broad view on the mechanism of the entire extraction process. The process involved construction of unit cell of all the systems. The

structural analysis of one system .i.e. the ionic liquid-ethyl methyl Imidazolium cation and Tetrafluoroborate anion with the compound dibenzothiophene is shown here:

The system were then mixed so as to create a biphasic system which comprised of the two phases, namely, the ionic liquid and the fuel .i.e. dodecane with the impurity compound DBT in it. Molecular Dynamic runs were carried out at suitable time resolutions so as to equilibrate the entire system to observe the transition of the DBT molecules from one phase comprising of the fuel to Ionic liquid phase. The plots of density and diffusion coefficients with temperature were studied for all the systems. This helped us to make us some conclusions regarding the effectiveness of the prescribed organic solvent and the feasibility of the solvent as well.



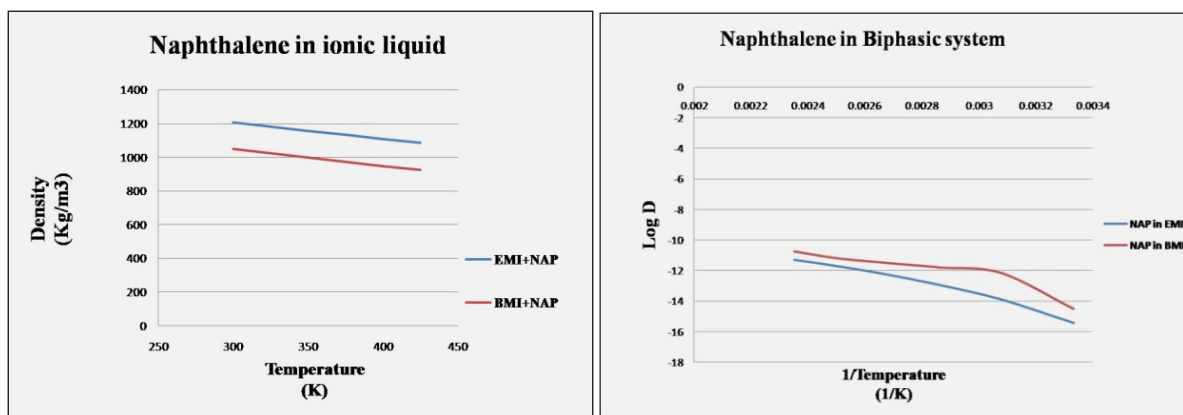
The entire workshop was an experience of a lifetime for me. The whole idea of learning a new programming language was itself much more enticing when we heard about it first. Now, we have not only understood the pros and cons of it, but also have suitable knowledge for the development of an entire system on our own. This has ensued an immense interest in the work we do. The workshop was not just about learning, but it also allowed us to develop curiosity which extra reading brings on to us. In all, it was an experience we all benefitted from!

Extraction of naphthalene from dodecane using ionic liquid

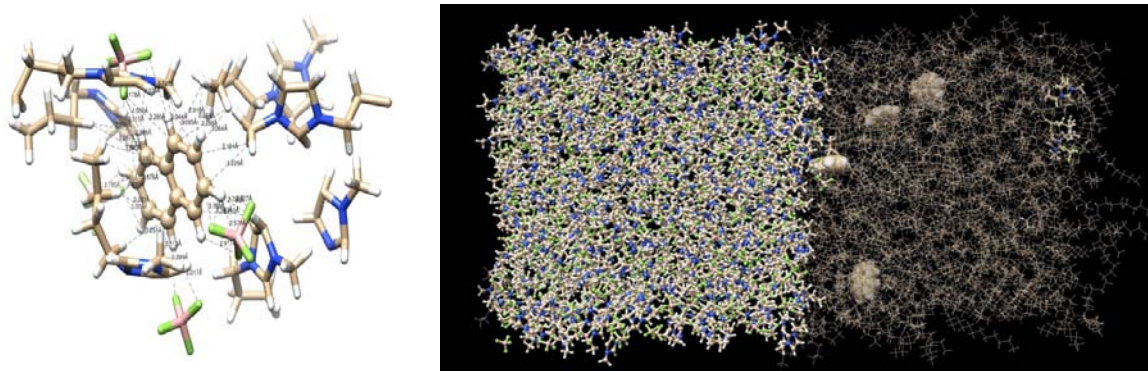
Aniket R. Vartak(S.Y. B.Tech .Dyes ICT ,Mumbai)

Aromatic compounds needs to be removed from petroleum since these compound cause environmental problems during use of petroleum as fuels. But these compounds have vast applications in other fields. For example naphthalene is an important material in dyestuffs ,insecticides etc. Our study was basically focussed on methods to achieve low level of these compounds using ionic liquids for extraction. Th extraction of naphthalene from dodecane using ionic liquids was studied through molecular dynamics(MD) stimulations. In MD stimulation the atoms and molecules are allowed to interact over a period of time, giving a view of the motion of the atoms. The project was divided into three different systems(i) compound +dodecane system (ii) Ionic liquid +compound system and (iii) Biphasic system. The ionic

liquids under investigation were Butylmethylimidazolium/tetrafluoroborate and Butylmethylimidazolium /thiocyanate. The simulation was analysed at different temperatures for different systems. It was observed that density of the system decreases almost linearly with the increase of temperature and was matching with experimental data. The diffusion coefficient of naphthalene in the system increases exponentially with increase in temperature



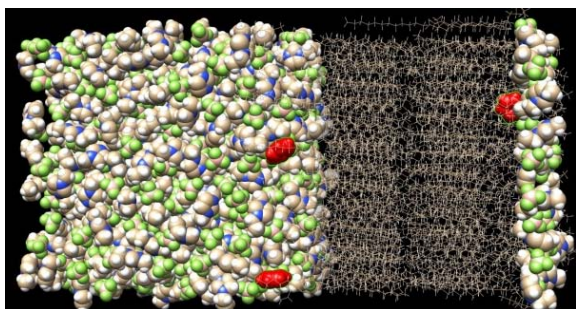
The interaction between ionic liquids and naphthalene was studied along with transfer of naphthalene from dodecane phase to ionic liquid phase



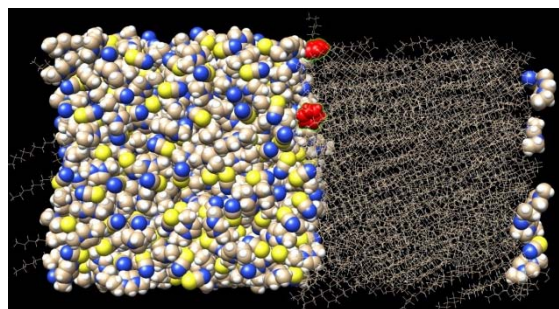
Extraction of Benzene from dodecane using ionic liquid

Keyur Rana (S.Y. B. Pharm. ICT, Mumbai)

To extract benzene from dodecane, two biphasic systems were investigated at 6 different temperatures (300K, 325K, 350K, 375K, 400K, 425K). However, only at one temperature, each system showed the maximum extraction of benzene from dodecane. The system-1 consisted of 485 molecules EMI(Ethylmethylimidazole) and anion TFB(Tetrafluoroborate), 348 molecules of dodecane and 4 molecules of benzene. The system showed maximum extraction at 350 K. The image below shows the extraction results at 75ns. Benzene is shown in red colour. Two benzene molecules are located at interface



System 1



System 2

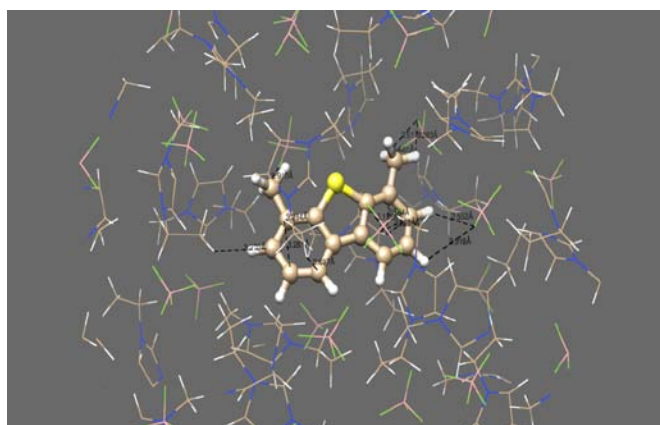
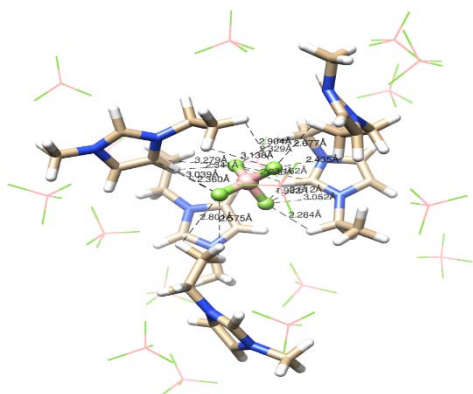
System 2 consisted of 500 molecules EMI(Ethylmethylimidazole) and anion SCN(Thiocyanide), 348 molecules of dodecane and 4 molecules of benzene. The system showed maximum extraction at 375 K.

I gained experience of working with students of different streams and learned to use computer simulation to study molecular dynamics.

Extraction of Dimethyl dibenzothiophene from dodecane using an Ionic Liquid

Labdhi Hariya(S.Y. B. Chem.,ICT ,Mumbai)

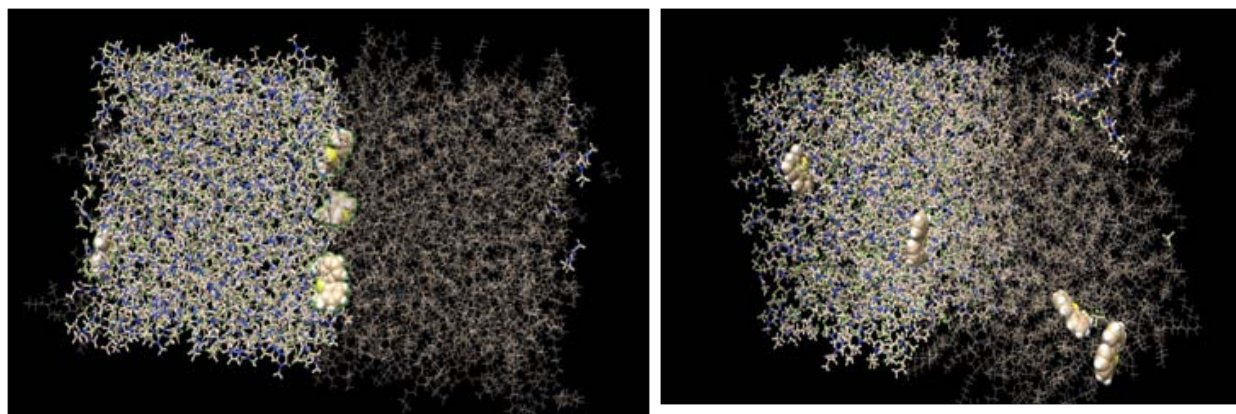
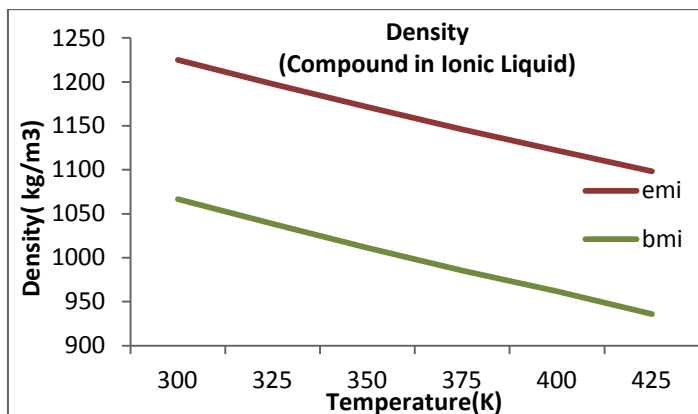
Extraction of dimethyl dibenzothiophene (DMDBT) from dodecane was investigated using Ethyl methyl imidazolium ion and tetraflouoroborate and Ethyl methyl imidazolium ion and Thiocyanate as Ionic Liquids. Dodecane being non polar does not interact much with the Ionic liquids. However, the DMDBT interacts with the ionic liquid and hence can be separated from dodecane. This method can be useful for the purification of fuel which contains hazardous sulphur impurities.



Interactions of compound with ionic liquid

By molecular simulations , different properties of the system such as density, diffusion coefficient etc. were also estimated at different time intervals and compared with published

data. A plot of density of the system at different temperatures is as shown below. In the biphasic system the transfer of DMDBT from dodecane into the ionic liquid was studied.



The workshop has been the best learning experience. Working with molecular simulations we learnt to observe the chemistry at a molecular level and hence visualize better.

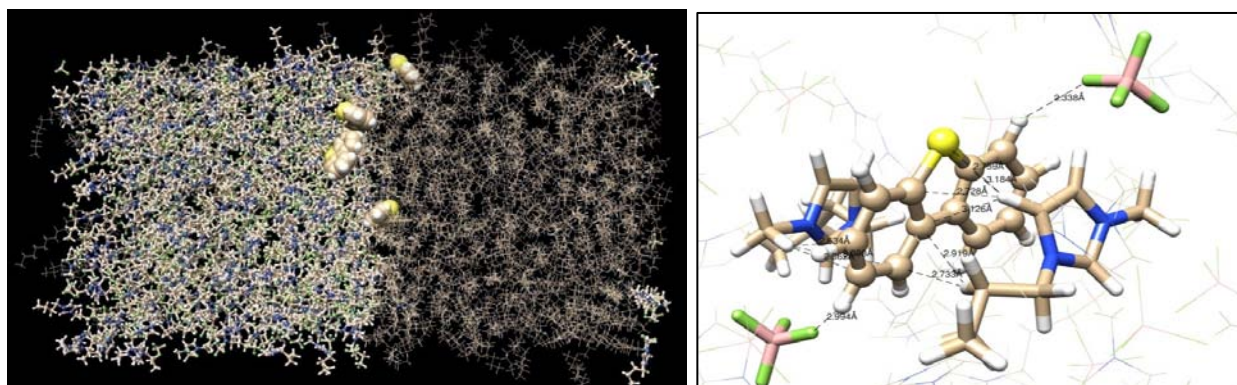
Molecular dynamics-a journey, an experience

Neha Pai(S.Y. B. Pharm., Mumbai)

The process of molecular simulation was unknown to me until I joined the molecular dynamics workshop in the year 2015 during summer vacation. Having vast applications in different fields, MD simulation provides detailed information on the fluctuations and changes of compounds and their systems. I understood through the process of MD simulations that one can actually visualize the project and then implement it on a large scale. The project investigated extraction of dibenzothiophene(DBT) from n-dodecane using butylmethylimidazolium tetrafluoroborate (ionic liquid 1) and butylmethylimidazolium thiocyanate(ionic liquid 2). Three systems were made: (i) Ionic liquid; (ii) DBT in n-dodecane (iii) Biphasic system

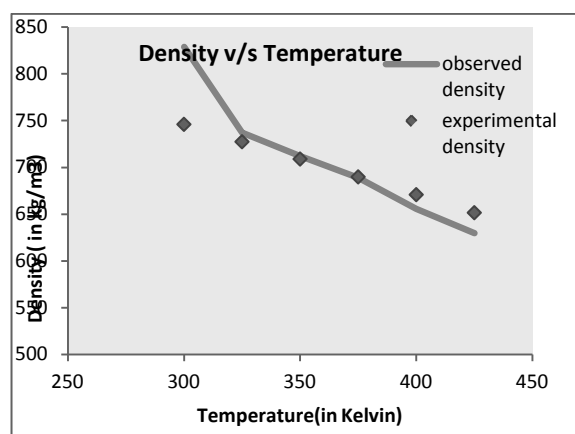
The molecules were created using the chimera (visualizer). A box was created with defined dimensions and molecules were added to it. The process of extraction was studied at 6 different temperatures (300K, 325K, 350K, 375K, 400K and 425K). However only at one temperature, the extraction was maximum. In the biphasic system, the compound was found at the interface or extracted into the ionic liquid.

The system, 1 contained n-dodecane, ionic liquid (both cation and anion) in equal numbers and 4 molecules of dibenzothiophene. The density and potential energy of the system and viscosity of the compound in the system was estimated at steady state and plotted on the graph. The system was studied at each temperature and the results proved that extraction was maximum at 300K. The Figure below shows the biphasic system and the compound at the interface at 300K.

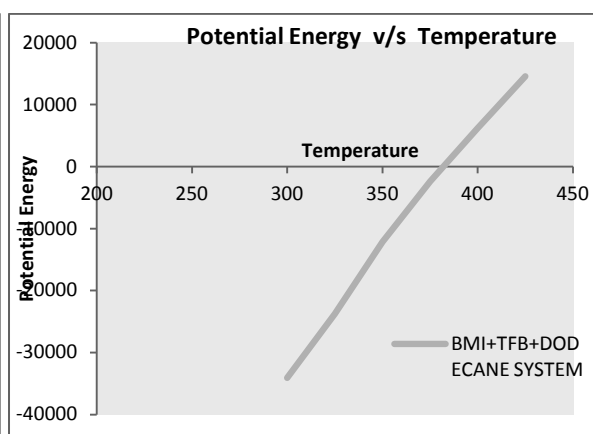


Dibenzothiophene at the interface

DBT in ionic liquid at 350K



density v/s temperature



Potential energy v/s temperature (biphasic system)

The system 2 molecules of n-dodecane, ionic liquid (both cation and anion) in equal numbers and 4 molecules of dibenzothiophene. Along with the process of extraction, the bond

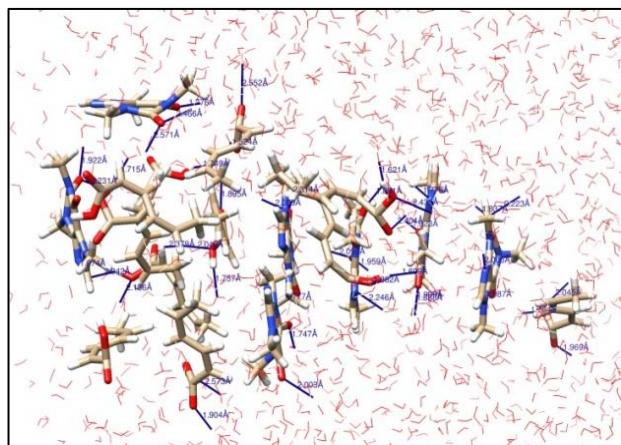
interactions of dibenzothiophene with ionic liquid-(anion and cation separately) and n-dodecane was also studied..

Molecular dynamics workshop was really an awesome experience. The journey of the compound from being designed to getting stabilized in the system kept me on my toes. I really feel that joining the workshop was one of my wisest decisions.

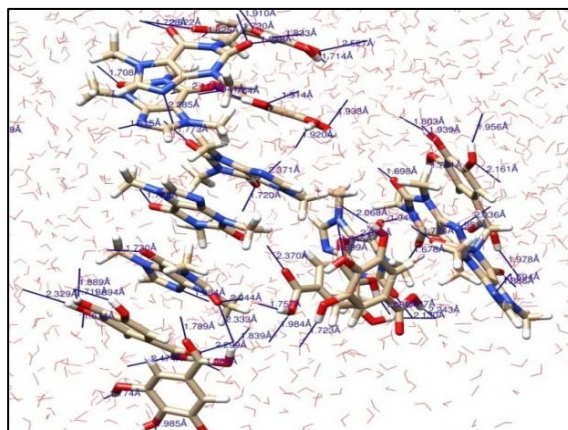
Co-crystallization studies of caffeine with gallic acid and sorbic acid

Parth Shah(S.Y. B. Chem. ICT ,Mumbai)

The project of investigation was co-crystallization of caffeine with gallic acid and sorbic acid at different temperatures. The main objective of the project was to find whether organic acids affect the solubility of caffeine in water. In the aqueous environment 9 molecules caffeine and gallic acid each were created and then equilibrated by D simulation. In the caffeine and sorbic acid system, 9 molecules of caffeine and 16 molecules of sorbic acid were put together. The MD simulations were run at different temperatures ranging from 300K to 333K at a difference of 5K .Major interactions were noticed between caffeine and gallic acid. Hydrogen bonded stacking of caffeine and gallic acid was seen due to interaction of π electron cloud. At higher temperatures the stacking increased because of the hydrophobic effect .The ratio of caffeine to gallic acid molecules was approximately 2:1 in the stacking. The diffusion coefficient of both molecules increased at higher temperatures. In case of sorbic acid, the aggregation of molecules increased, at higher temperatures.



Caffeine and sorbic acid system at 330K(10 ns run)



Caffeine and gallic acid system at 330K(10 ns run)

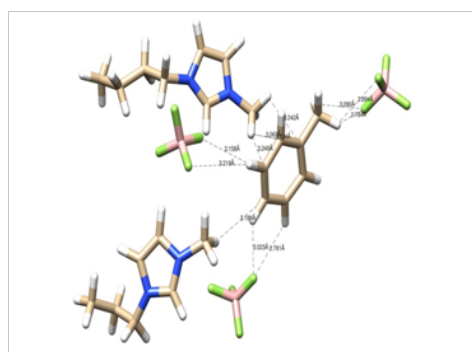
This workshop has been very beneficial.I can now imagine how a molecule interacts and moves in a system. It has enabled me to think about new projects using this software. It has helped me to find the properties of the system. It has been a learning process for us without the fear of EXAM!!!!

Extraction of toluene from dodecane using ionic liquids

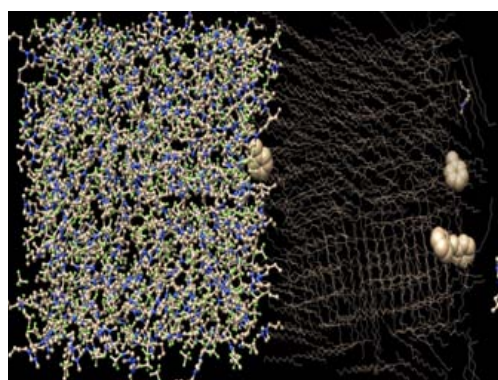
Pranav K. Raval (S.Y.B.Tech, ICT, Mumbai)

Removal of aromatic hydrocarbons is one of the processes involved in petroleum refinery, since these impurities give a negative impact on the environment. Our study basically focused on methods to achieve low-level of these compounds in the petroleum products using a newer and innovative idea of Ionic Liquids. Molecular Dynamics(MD) is a computer simulation of physical movements of atoms and molecules. MD calculates the motion of the atoms in a molecular assembly using Newtonian dynamics (particularly second law) to determine the net force and acceleration experienced by each atom. The MD was used to estimate density of the entire system, diffusion coefficients of toluene and Ionic Liquids in the system, viscosity of the system and potential energy of the System.

It was observed that density of the system decreases linearly as the temperature increases and diffusion coefficient of toluene in the system increases exponentially with temperature which has direct effect on transfer process



Interaction of Toluene with Ionic Liquid



Movement of Toluene into Ionic Liquid from Dodecane in BIPHASIC System

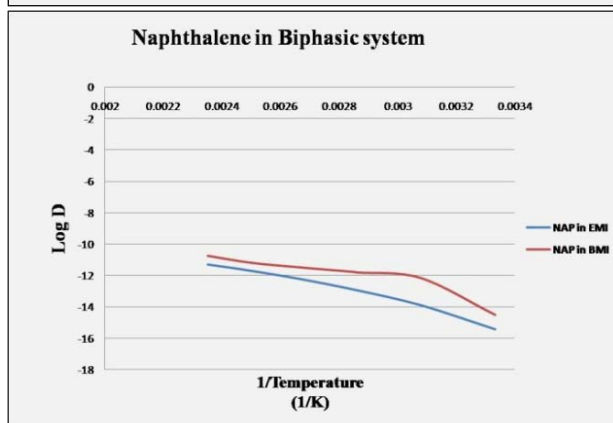
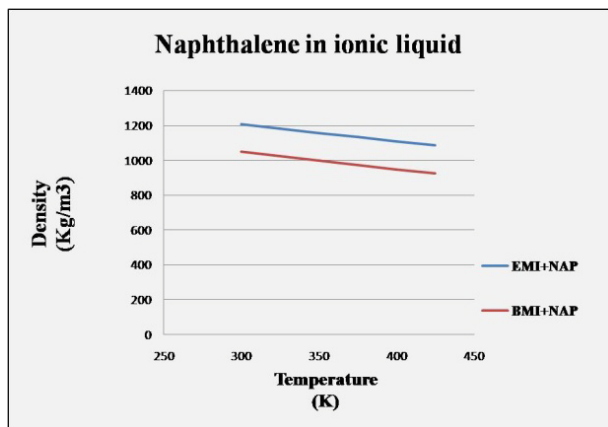
Molecular Dynamics was something new to learn and fun to do at the same time. A lot of chemistry concepts became clear during the workshop . I got an opportunity to work for a research project just on the first year level. The experience was so intuitive and interactive that I would like to continue doing MD Simulations .

Extraction of naphthalene from dodecane using ionic liquid

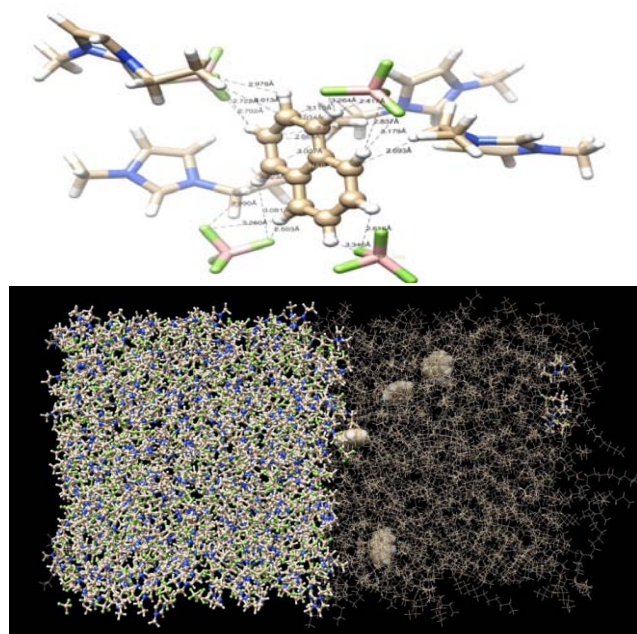
Ritesh R. Chogale (S.Y.B.Tech, ICT, Mumbai)

Removal of aromatic hydrocarbons is one of the processes involved in petroleum refinery, since these impurities give a negative impact on the environment. Our study basically focuses on methods to achieve low-level of these compounds in the petroleum products using a newer and innovative technological idea of Ionic Liquids. In Molecular dynamics simulation the

atoms and molecules are allowed to interact for a period of time, giving a view of the motion of the atoms. It was observed that, density of the system decreases almost linearly with the increase in temperature. The diffusion coefficient of naphthalene in the system increases exponentially with increase in temperature.



Interaction between the molecules was studied by structural analysis as shown below:

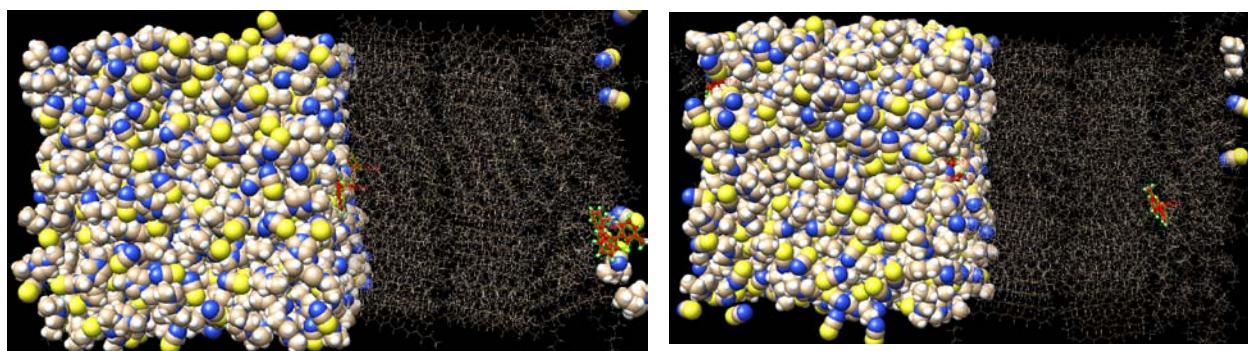


It was great opportunity at stage of first year to do such kind of research work. The work was quiet well distributed so, that we were able to concentrate on our system as well as getting a good experience of team work.

Separation of sulphur compounds from dodecane using suitable ionic liquids

Saumil Chheda(S.Y. B. Chem. ICT ,Mumbai

The project was separation of sulphur compounds from dodecane using suitable ionic liquids. Sulphur compounds are impurities in the hydrocarbons of fossil fuels. Thus the extraction of impurities using ionic liquids is proposed as an alternative to current hydrodesulphurization practice. Methyldibenzothiophene was separated from dodecane using Ethyl Methyl Imidazolium Tetrafluoroborate and Ethyl Methyl Imidazolium Thiocyanate. The system containing of MDBT in dodecane and ionic liquid was simulated for migration of MDBT from the dodecane to the interface of the ionic liquid and dodecane. The results were analyzed by finding possible interactions between atoms, looking at the molecule's affinity for different solvents when mixed together, checking for the variation of density with temperature, the relative affinity of the compound for the ionic liquids and lots more.



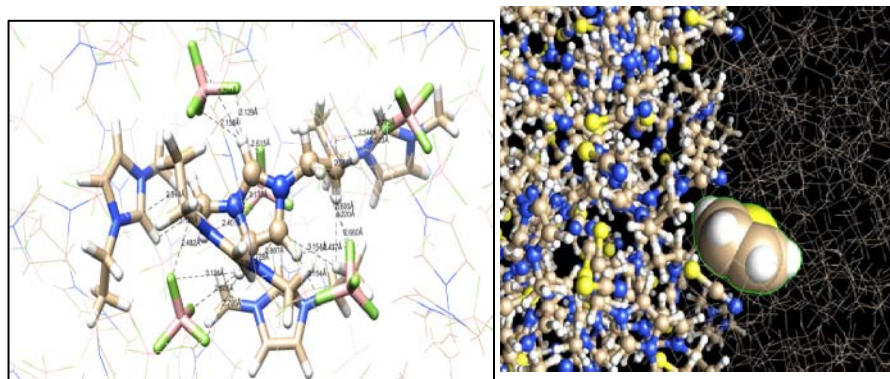
Molecular Dynamics Workshop was a great experience. It introduced me to an entire new world of chemistry- describing how molecules look, how they interact with each other, etc. The workshop helped me by easing the process of understanding chemistry as it is and not as it is in books. Using Chimera we build molecules of the required compounds and simulated the system. This workshop has also helped in building team-working skills as we all worked on different parts of the project as a team. The workshop was valuable and was worth dedicating my summer vacation. I hope to learn more regarding molecular dynamics and attend similar other workshops. It is a good idea of learning something beyond the lectures!!!

Molecular dynamics simulations to separate Thiophene from Dodecane using ionic liquids

Shashank Bhangde (S.Y.B.Tech. ICT, Mumbai)

There are two ionic liquids under consideration Ethylmethyimidazolium (EMI) tetrafluoroborate (TfB) and Ethylmethyimidazolium (EMI) thiocyanate (SCN).

The project was basically trying to separate out Thiophene from Dodecane using ionic liquids. We studied the ionic liquids, their interactions, thiophene and its interactions in ILs and dodecane and lastly, biphasic system consisting of thiophene in dodecane as phase 1 and ionic liquid as phase-2 and transfer of thiophene from dodecane to ionic liquid phase



The separation of thiophene (THI) on the interface of the ionic liquids from the dodecane system was simulated at temperatures in the range from 300K to 425K. Both the ionic liquids are able to extract thiophene at 350K. The interaction of thiophene at the interface has been studied.

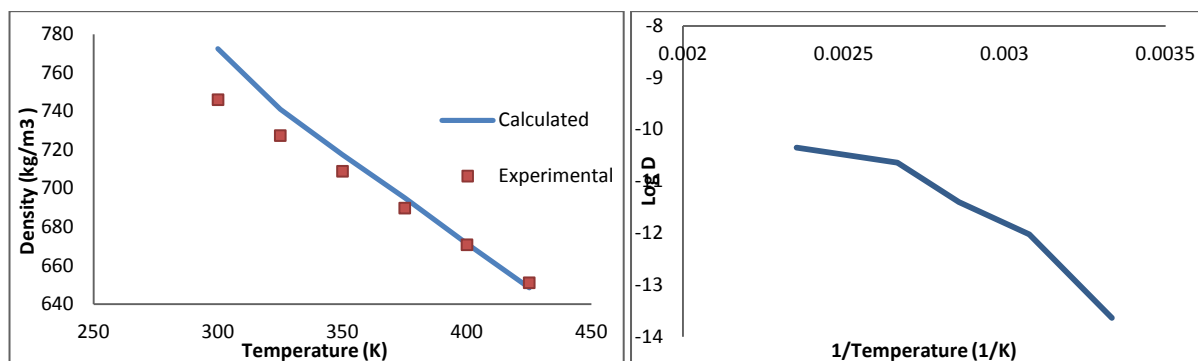
Molecular dynamics simulation

Sonali Makarand Vaidya(S.Y.B. Pharm, ICT, Mumbai)

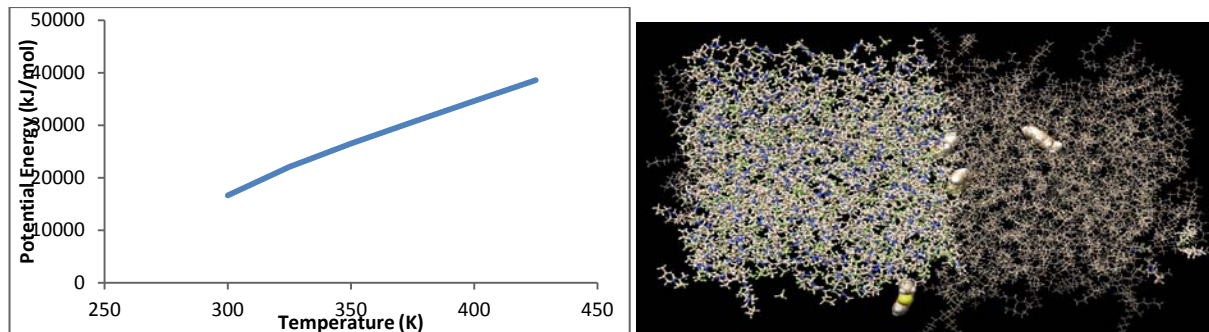
Extraction of 4-Methyldibenzothiophene from in dodecane using Buthylmethyimidazolium tetrafluroborate and butylmethyimidazolium thiocyanate ionic liquids was simulated by molecular dynamics. Removal of sulfur compounds is extensively important in petroleum industry. The sulfur present in fuels pollutes the atmosphere in the form of SO_x. In order to reduce maximum sulfur content in fuels, **extractive desulfurization (EDS)** with ionic liquids can be effective to remove some sulfur compounds, such as the sterically hindered dibenzothiohene (DBT) derivatives. 4-MDBT is one of the most difficult sulfur pollutants to remove by the conventional process of hydrodesulfurization.

The EDS process is the separation of DBT derivatives from diesel by extraction with a liquid solvent that, preferably, does not solubilize in the fuel. Ionic liquids are thermally stable and interact strongly with sulfur compounds. Using simulation, Newtonian dynamics data

assessment for **three systems** was performed using **GROMACS**, wherein physical properties of the system were calculated such as density, potential energy and diffusion coefficient. The structural interactions-ionic and van der Waals interaction of 4-MDBT with dodecane and ionic liquids were also analysed. The extraction process was analyzed using the biphasic system. On basis of experimental and theoretical studies from simulation process, the extraction of 4-MDBT for biphasic system was seen best at 375 K for butylmethylimidazolium tetrafluoroborate



Variation of Density with Temperature in Dodecane Variation of Diffusion Coefficient with Temperature



Potential Energy with Temperature

Biphasic System At 375 K

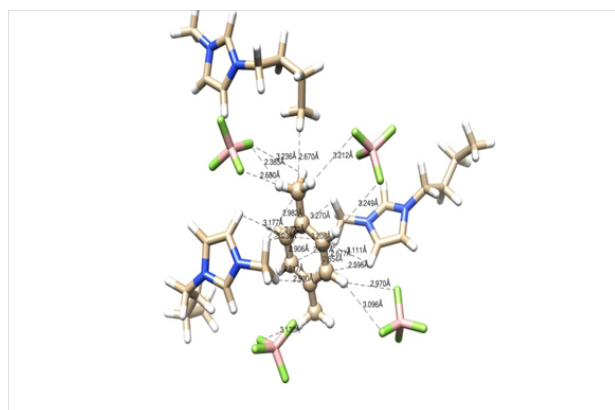
The extraction of 4-MDBT into the ionic liquid Butylmethylimidazolium tetrafluoroborate was feasible at 375 K

Extraction of p-Xylene from dodecane using ionic liquid

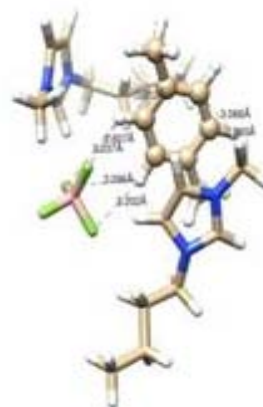
Gulsha .B. Motihar(T.Y.B.tech Pharma, ICT, Mumbai)

Petroleum is complex mixture of paraffins, aromatics, naphthenes, etc. Removal of aromatic compounds and sulphur compounds from petroleum is essential as these compounds cause environmental problems during use of petroleum as fuel. Also, high aromatic content in petroleum fraction results in lowering of cetane number which is a measure of fuel's ignition

delay. In order to improve the cetane number the reduction of aromatics is essential. The current study basically focuses on methods to achieve low level of these compounds using an innovative technology of extracting these compounds using ionic liquids. The project was on the extraction of p-xylene from dodecane using ionic liquids using molecular dynamics simulations. Molecular Dynamics is an essential tool as it can track systems from microscopic to macroscopic level and track down rapid processes happening in any system. First, we analysed the interactions of p-xylene in two different ionic liquids

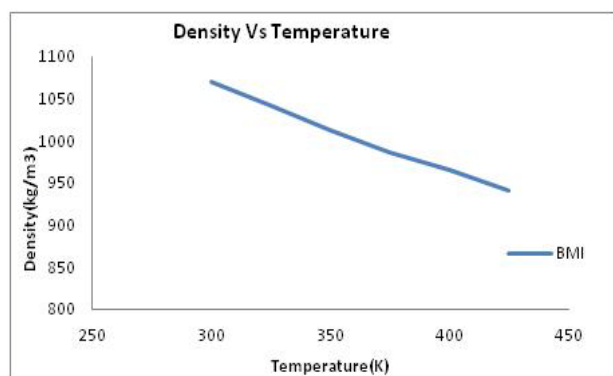


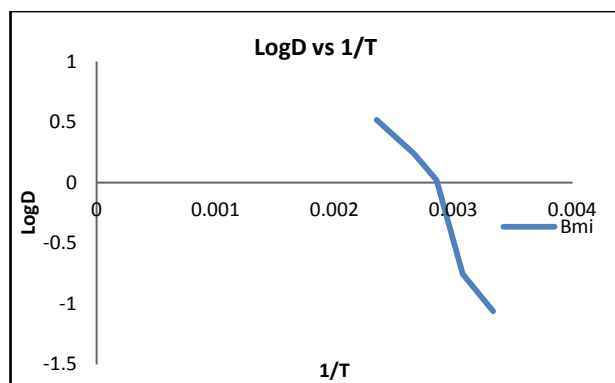
Butylmethylimidazolium/tetrafluoroborate



Butylmethylimidazolium thiocyanate

From the structural analysis it was observed that the cation BMI was attracted to the electron cloud on the xylene ring, thus orienting itself parallel to the plane of the ring whereas the anion BF₄ was oriented towards the methyl part to the ring which has partial positive charge. Various Parameters of the system like density, diffusion coefficient, viscosity and potential energy of the system were analysed.





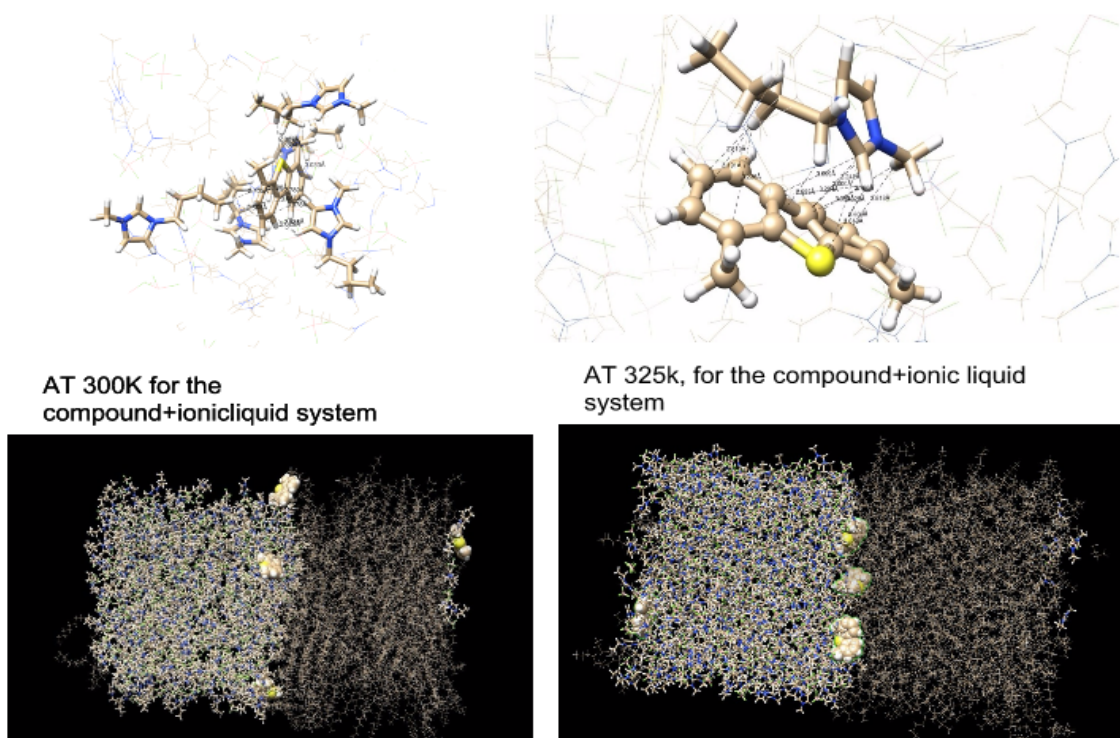
The density data obtained by molecular simulation was identical to the experimental data. It was observed the density of the system decreases linearly with the increase in temperature. From the diffusion data obtained we could conclude that the diffusion coefficient of xylene in the system increases exponentially with increase in temperature.

Learning Molecular Dynamics in a workshop conducted enriched my knowledge in the field of computer simulations. Being a pharmaceutical science student, I believe that Molecular Simulation has an important role to play in pharmaceutical science research. Having knowledge in this field will enable me to have a better aspect in designing drugs using in silico experimentation technique and in assessing drug delivery which would prove useful in my career ahead. As it is not a part of our academic curriculum it would be an added advantage for me.

Molecular dynamics simulation for Desulphurization of fuel

Revathi Reddy(S.Y.B. Pharm., ICT, Mumbai

The aim of the project was to study the extraction process of an aromatic sulphur compound, i.e. 4,6-dimethyldibenzothiophene(DMDBT) from an organic solvent dodecane using ionic liquids. During the process, two systems were studied, one employing 1-Butyl-3-methylimidazolium ion as the cation and tetrafluoroborate ion as the anion, and the second system with the same cation and thiocyanate as the anion of the ionic liquid. All the studies were done by performing molecular dynamics simulation. Each system consisted of three sub-systems through which the interactions of the aromatic sulphur compound with the solvent dodecane, and with the ionic liquid were analysed and the behaviour of DMDBT in a biphasic system was studied.



AT 350K for the biphasic system, the compounds are seen moving towards the ionic liquid and at 425K for the biphasic system, the compounds have lined up at the interface. At the end, it was observed that the compound progressively was entering into the ionic liquid from the organic solvent and best result was obtained at 325K and 425K.

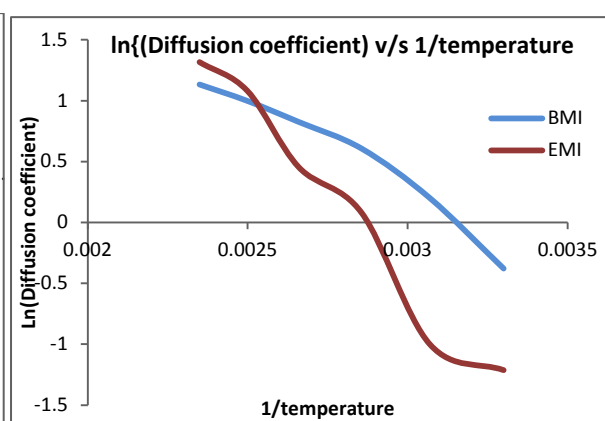
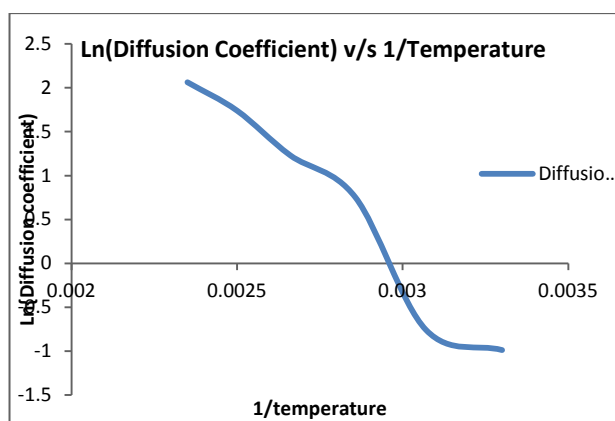
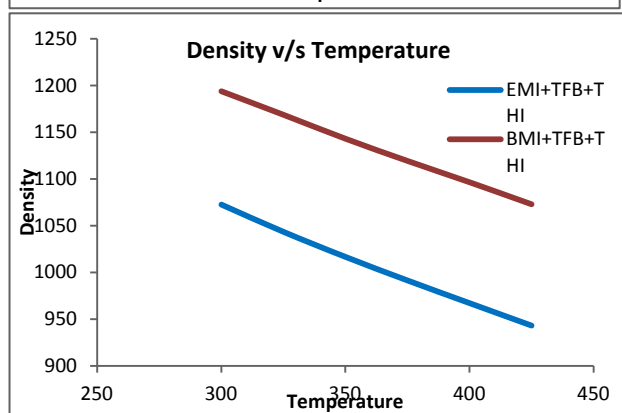
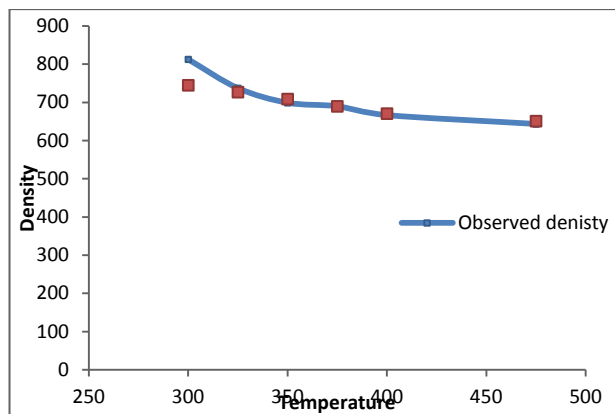
It was a totally new experience to learn a new software and work on an interesting project as this. This workshop provided an opportunity to work with the students of other branches as well.

MOLECULAR DYNAMICS SIMULATION

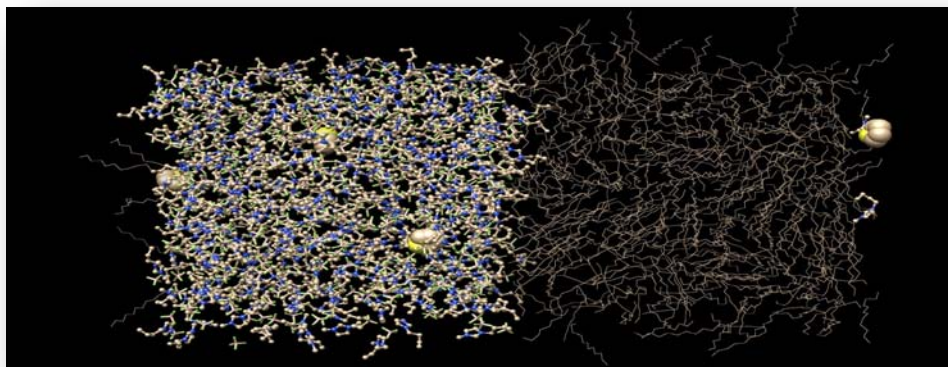
Saina Prabhu(S.Y.B. Pharm., ICT, Mumbai)

Extraction of thiophene from dodecane was simulated using butylmethylimidazole and butylmethylimidazolium thioscyanate. Removal of sulphur compounds is used in the petroleum industry as these impurities have a negative impact on the environment. Ionic liquids are thermally and mechanically stable and have a strong interaction with sulphur compounds. Using Newtonian dynamics and simulation we have performed the data assessment for the system in three stages of the simulation process: (i) thiophene and dodecane system, (ii) thiophene in ionic liquid system and (iii) Biphasic system by merging two above systems. The same process was used for both the ionic liquids. After every *ns* time period we assessed the data using GROMACS calculating and studying the physical properties of each system like

density, potential energy and diffusion coefficient. We also studied the ionic and van der Waals interactions of thiophene with dodecane and the ionic liquids.



The extraction process was analysed using the biphasic system. According to theoretical studies and experimental analysis using the simulation process the extraction of thiophene for the biphasic system was seen best at 350K for both the ionic liquids. The extraction process for thiophene into both the ionic liquids for both biphasic systems reached its completion at 350K.

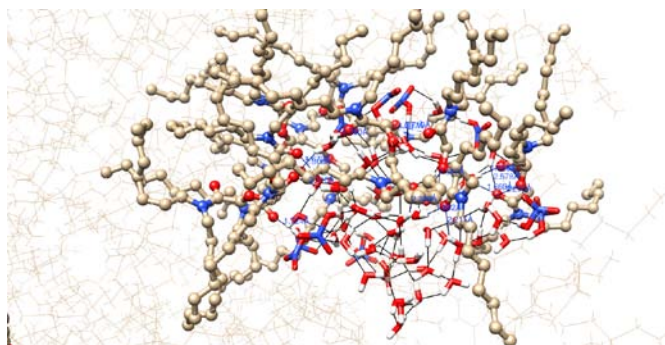


It was a great experience working for this project. The entire process was quite tedious but very resourceful. We got to learn more about drug designing, their interactions, learning the depth of chemistry behind different molecules. I look forward to many more projects like this in future and would like to work on projects pertaining to drug designing, docking and studying protein interactions with different molecules.

Extraction of nitric acid from aqueous to organic phase using TODGA as a ligand

Aishwarya A Lohi(T. Y. Chem. Engg. Dr. Babasaheb Ambedkar Technological University)

N,N,N',N'- Tetraoctyl diglycolamide (TODGA) is a tridentate ligand that displays a tendency towards aggregation in n-dodecane at lower acidities. The aggregation properties of TODGA were studied in a 5 nm unit cell using molecular dynamics simulation. The system comprised of 400 n-dodecane molecules, 6 TODGA molecules, 12 nitric acid molecules and 60 molecules of water. The analysis was done over a temperature range of 300-375 K. The best results were obtained for 350 K at 10 ns. A cluster of four TODGA molecules was formed. TODGA formed 7 hydrogen bonds with water and 3 hydrogen bonds with nitric acid. The structure was reverse micellar in nature where all the polar heads were directed towards water in the centre. The diffusion coefficients were $D_{[TOD]} 3.1422 \pm 0.0432 \times 10^{-5}$ and $D_{[DOD]} 0.1816 \pm 0.0184 \times 10^{-5}$ (cm²/s)



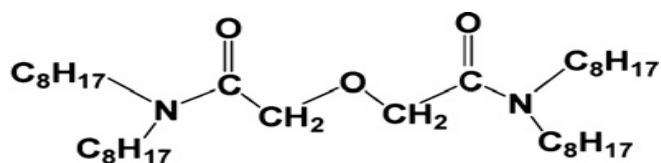
Some papers have reported clusters of up to 7 TODGA molecules. Analysis for aggregation properties of system containing 10 TODGA molecules is in progress.

Molecular dynamics is a lesser known area in college curriculum and it was a great experience to learn it. With the help of softwares such as Chimera, it is easier to visualize and imagine the interaction of atoms and molecules at the microscopic level. This certainly finds many applications in several subjects of chemical engineering and allied branches.

Aggregation studies of TODGA

Suneha Patil(T. Y. Petrochemical Engg.Dr. Babasaheb Ambedkar Technological University)

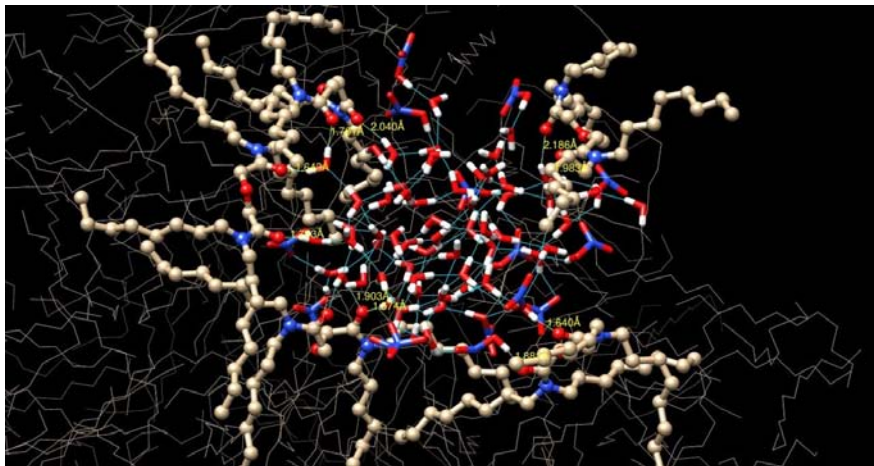
TODGA molecule also known as Tetra Octyl Diglycoamide is a tridentate ligand and used in separation of lanthanides and actinides from nuclear waste. It is a promising extractant also for extraction of other metal ions from highly hazardous nuclear wastes which currently pose a great threat to the environment if not disposed properly.



TODGA molecule.

The study involved identifying aggregation characteristics of TODGA in different solvents. Initially, TODGA system was simulated with only adding water molecules. Later, nitric acid molecules were added to the system in varying composition and simulated at increasing temperatures of 300, 325, 350, 375°K (Kelvin). The analysis for the aggregation of TODGA molecules at each temperature for 1-5 successive MD runs was carried out for 5 different systems varying in composition and sometimes the solvent. The systems are as follows : (i) 6 TODGA, 60 water, 400 D; dodecane; (ii) 7 TODGA, 21 water, 400 Dodecane; (iii) 6 TODGA, 12 nitric acid, 50 water, 400 Dodecane; (iv) 6 TODGA, 20 nitric acid, 60 water, 400 Dodecane and (v) 10 TODGA, 12 nitric acid, 40 water, 400 Dodecane. The results have been varying to a great extent. For the first system, the best aggregation of 3 TODGA molecules was found at

375 K at the second MD run. The diffusion coefficients were seen to be increasing with the increasing temperature. For the second system maximum 2 TODGA molecules at 375 K came together.



For satisfactory results the system was added with nitric acid. And it was seen that nitric acid increases the cluster formation of TODGA. Thus the third system at 375 K formed a cluster of 4 TODGA molecules. The fourth system, however, at 325 K at 3,4 and 5_ns runs had 5 TODGA molecules in a cluster with bonds with water and nitric acid in between. This was by far the best aggregation analysis. The diffusion coefficients obtained were in the range of ; TODGA ($0.20-0.42 \times 10^{-5}$); Dodecane ($1.8-2.5 \times 10^{-5}$); water ($0.4-1.5 \times 10^{-5}$); nitric acid ($0.3-1.1 \times 10^{-5}$) cm^2/sec .

It has been a very good experience attending this workshop and working in ICT. I am looking forward to work on another project in the same stream in future.

Molecular Dynamics Simulation Workshop

Shivangi Borate (T. Y. Chem. Engg., Dr. Babasaheb Ambedkar Technological University)

I was a part of the simulation workshop which was held at our University earlier. It was an interactive session and it had intrigued me to know about it further. Hence I decided to take it up as my summer internship. We were given interesting topics on the second day itself to work on. Most of the systems were of extraction processes. The wonderful thing about it was we were given different topics each.

Although the course was tiring, it taught us many important features. I got an insight into how exactly the molecular systems work, how they bond and how their behaviour is affected in the presence of foreign media. Things which we just learnt through books and had tough time

imagining was made easy by this workshop. As I am in my third year chemical engineering now, visualising diffusion in mass transfer was lot easy.

The project was on diffusion of anthracene in ethyl methyl imidazolium tetraflouoroborate and dodecane system. Furthermore, we had to give a mid work presentation, where we were asked many questions. Because of that we could understand where we were lacking and what possible errors were there. We were provided with necessary technical support by ICT, Mumbai. This course enabled us in understanding chemistry at a whole new level. I am interested, therefore, in taking up my own project wherein I can use whatever molecular dynamics knowledge I have acquired. Although a further study is needed. As we were briefed through the internship, I understood that the topic is vast and it would take a great amount of dedication. We also compared the results which we got with the experimental data, if any, available. The effect of a very important thermodynamic variable that is the temperature was very well studied. We simulated our systems with various temperature modifications to know how properties like density, viscosity, diffusion coefficient of each component changes.

7.3 Best Practices

7.3.1 Give details of any two best practices which have contributed to better academic and administrative functioning of the university.

❖ Title of the Practice

BEST PRACTICE – I : E-ATTENDANCE SYSTEM DEVELOPMENT

❖ Objectives of the Practice

It has been our observation that given a choice, the students tend to stay away from the lectures because of several distractions in terms of internet surfing and mobile apps. It was necessary to bring the students back to class. Although the students were aware of the requirement of the attendance in the class, it was difficult to enforce it.

We decided to build a completely new custom made system to address the attendance of the students and to ensure delivery of the content. If the students come to class at least they know the content of the subjects. Although several courses are available for on-line learning, the element of ‘Teacher ‘ cannot be taken out of the learning process as finer points can be explained only by an expert teacher. If the teacher practices what he teaches the learnings gets multiplied by manifold.

❖ The Context

The need was to get the students back to class itself first. A student attending a class has an exposure to the course content first hand while learning from peers or on-line learning resources have limited explanations and sometime even wrong information. The on-line information can be even misleading. The urge to learn comes only by human interaction with the teachers who can explain the finer details of the subject in depth. Although it is mandatory, the 75% attendance rule is rarely followed in most Universities and its implementation would become difficult in the absence of manual data which is also tedious.

❖ The Practice

It was decided to implement on-line e-attendance system in the class which should have minimum disturbance in the class. We had to sit down with the IT and Communication

experts, detailing the requirement of the entire system, right from infrastructure development, data collection and recording. The system is today is based on wireless transmission of the attendance to a central sever. In each class, a safe with biometric lock is kept that is opened only by the faculty members having lectures in the same class. The teacher starts the class by using an app on a tablet, selecting his course and class in a drop down menu. A biometric machine is circulated amongst the students with preregistered finger prints, so that each student, present in the class gets registered on the machine. At the end of the class when the app on the tablet is closed, the names of registered students are sent to the central server. The names of the absent students are flashed on the tablet for a double check by the faculty and the student also receives a message of his absence in the class. This has ensured not only attendance of the students but also timely lectures by the faculty as well.

❖ **Evidence of Success**

The main objective of having such a system was to get the students back to class. Before the implementation of the system, the average attendance used to be about 50 to 60%, sometime as low as 25%. After the implementation of the system the attendance of students is usually in excess of 90%. It also gets reflected in their performance as now they do not miss out the continuous assessment tests that teachers conduct, sometimes as surprise tests. The faculty also is relieved from the manual work of taking attendance in the class.

❖ **Problems Encountered and Resources Required**

There were several difficulties encountered in the implementation of the system. The mind-set at the students level as well as faculty level had to be changed because many old faculty member were not very comfortable with the system. Since the system was to be built from scratch and made custom made, it was a pilot project for the IT company as well. The hardware was becoming too expensive for the implementation and each stage we had to work out least expensive option.

❖ **Title of the Practice**

BEST PRACTICE – II : UNDERGRADUATE RESEARCH PROJECTS

❖ **Objectives of the Practice**

The strength of the ICT is in its culture of research and inculcating a habit of quest for excellence amongst the students. If the students get involved in research in the early stage of career, their interest in the subject also improves and so their learning capacity. The employability of the students improves along as they have an edge over other competitors in the international arena. ICT encourages the students after their first or second year examination to spend either in ICT in the laboratories of different faculty members and elsewhere in the country in prominent Government research labs.

❖ **The Context**

Research and Innovation is the need of the hour and an early exposure to the research activities is useful for the graduating students either getting offers from Universities abroad as well as from industries as the students have a far better learning skills in newer areas.

❖ **The Practice**

The First and second year students are offered opportunity to work in research laboratories in the ICT. The applications are invited from the students well in advance for selection. A group may still decide to enjoy the vacation, but over the years, a large number of students prefer to work over six to eight weeks learning the trade. Doing with hands and experiencing the scientific principles is a different experience for these youngsters, who are not averse to risk. There is also thrill of doing something different from other disciplines. In the lab they work with group of students doing PhDs and master's project, learn handling sophisticated instruments and interpret the results. This hand-on training changes their attitude towards their regular studies also.

❖ **Evidence of Success**

The success of the practice is in increasing popularity of the activity where almost everyone vies to get inducted in the program. Many students also avail the facilities offered by Science Academies in the Country. The research papers are published by the

students while they are still in undergraduate years. Most of the students who work on these projects go for higher studies, either for MS or PhD, most with full scholarships

❖ **Problems Encountered and Resources Required**

There are not many problems in the implementation of this practice. Our only problem is that we cannot take everyone who wants to work with us because of limited infrastructure in the Institute. In recent years, we have started helping students and teachers of other institutes by providing internship in ICT. Every year we admit 20 to 25 students from institutes, including NITs, from all corners of the Country.

EVALUATIVE REPORT OF THE DEPARTMENTS

List of Departments
Chemical Engineering Department
Chemistry Department
Dyestuff Technology Department
Fibres & Textile Processing Technology Department
Food Engineering Technology Department
General Engineering Department
Mathematics Department
Oils, Oleochemicals and Surfactant Technology Department
Polymer & Surface Engineering Department
Pharmaceutical Sciences & Technology Department
Physics Department
DBT-ICT Centre for Energy Biosciences

Chemical Engineering Department

The Department of Chemical Engineering of ICT is one of the leading Chemical Engineering Departments in the Country maintaining high standards in teaching, research and industrial liaisoning, rated by the international surveys conducted by Professor Jude Sommeffield of Georgia Tech, USA since 1964 for every five year period as well as every year which included all IITs and IISc. Besides, it is among the top 12 departments in the world and in terms of productivity as measured by papers per faculty per dollar spent, it is number one in the world.

The Confederation of Indian Industries (CII) and AICTE survey has ranked Chemical Engineering Department as No. 1 in the country for best Industry linked Institute, consecutively for 3 years in a row.

The number of papers published in peer reviewed journals per faculty is also the highest in India. The FIST program of DST has also revealed that the Chemical Engineering Department is the Best Department in all engineering departments in India. This is again the record which has been held due to the research contributions of faculty in international journals of repute. The value and impact of our research is reflected in highest number of papers per faculty member, highest impact factor per paper, and highest number of citations for papers of Chemical Engineering Department. The faculty has been acting as consultants to industry and the earnings are the highest for any engineering department in India. During the last 5 years, more than 400 peer reviewed international papers have been published and more than 50 sponsored research projects have been successfully completed. The Department graduates 75 B. Chem. Engg., 45-50 Masters students and 25-30 Ph.D. students every year. At present Department has more than 200 Ph.D. students working on various research problems keeping in tune with present day needs. The support for these students come from University Grant Commission as the Department is recognized as the Centre of Advanced Studies in Chemical Engineering, Department of Atomic Energy, Department of Biotechnology, CSIR, Department of Science and Technology, and several industry sponsored projects.

Major Thrust of Research Areas:

- Development of Novel Reactors, Reactions and Separation Processes
- Computational Fluid Dynamics for Multiphase Systems
- Analysis of Multiphase Phenomena
- Novel Catalytic Materials and Processes,
- Green Technology
- Surfactant Science and Hydrotrophy
- Development of Organic Chemical Processes

- Adsorptive and Chromatographic Separations
- Cavitation Phenomena, Sonochemistry
- Drying of industrial and food products
- Industrial Crystallization and Filtration
- Advanced Separation Techniques
- Energy Engineering
- Material Science
- Biotechnology
- Nanscience and Naotechnology
- Biochemical Characterization
- Technologies for society such as energy efficient cooking, food processing and preservation, water treatment, waste utilization

The Department of Chemical Engineering of ICT has a unique distinction in terms of awards received by the faculty members. Major Awards and Honors to the Faculty:

- Padmavibhushan, Padmabhushan, Padmashree by Government of India
- Fellowships of TWAS, Royal Society (UK), INSA, NASI, INAE, IASc, MASC
- J. C. Bose Fellowship
- S. S. Bhatnagar Award
- VASVIK Awards
- INSA Medals for Young Scientists, Associates of Indian Academy of Sciences, INAE Young Engineer Award, Young Scientist award of NASI
- I. I. Ch. E. Awards for excellence in Basic and Applied Research
- Membership of Policy Making Bodies of Government (State & Central)
- Membership of the Editorial Boards of Reputed International Journals
- Directorship of Public Limited Companies

The “HOMEPAPER” or “DESIGN PROJECT” of the final year undergraduate students have been repeatedly rated as the best by IChE and Ambuja Cements and Sir P.C. Ray Foundation. The Ph.D. students have also bagged many awards at national and international conferences. Students have also received Outstanding Young Chemical Engineer (OYCE), IChE several times. The prestigious N. R. Kamat Chemical Engineering Quiz Trophy have been won by Chemical Engineering Department many times in succession. The chemical engineering research students have also won several prestigious awards such as **Bill & Melinda Gates Foundation Award, Dell Social Innovation Award, Agilent and Mondialogo Award of UNESCO.**

The department has dedicated all the activities for the benefit of chemical industry and society. This is also reflected in the vision and mission of the Department.

Vision

We will strive to be a vibrant department, with continuously evolving curricula and programmes that will charter the future of chemical, biological, materials and energy industries of the nation and be on par with the very best in the world through the participation and scholarship of our faculty, and students who will be torch bearers in education and research and have great impact in solving societal needs for the benefit of mankind at large.

Mission

We will create an atmosphere conducive to generate new knowledge at every opportunity for our students at large. Our education will enable new chemical engineering solutions to meet the need of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources. Our endeavors will enhance the public welfare. Our activities will not be limited to class-rooms but will extend to a greater multi and cross disciplinary platform to conduct research, discovery, technology development, service to industry and entrepreneurship in consonance with India's aspiration to be a welfare state. We will team chemical engineer with professionals in other disciplines to arrive at better solutions. We will provide all students with a strong foundation in chemical engineering and applied sciences to encourage them to be our ambassadors at national and international level, in whatever professional activity they undertake to serve the society. Through our vision, we will serve the chemical engineering profession and society and strive to reach the summit as a team and stake-holders and as role models to the younger generation.

The undergraduate program has an intake of 75 students. The course syllabus has been designed by keeping in mind the Chemical Engineering syllabi of various international institutions. It is regularly updated keeping in mind the changing needs of the times. Nearly 50% of our undergraduate students choose to pursue further education in the topmost universities worldwide, namely, MIT, Minnesota, Stanford, Caltech, Delaware, UC Santa Barbara, Purdue, etc. The remaining opts for jobs in the Chemical Industry. The students are well paid and picked up by the top most industry within the country as well as outside the country well before the course gets over. The course content is thus geared towards a combination of rigorous theory and practical applications. The course is intended to bring out Chemical Engineers that can serve the academia and industry in particular and society and the nation in general. The course syllabus contains a combination of theory courses as well as laboratory experimentation. This inculcates a habit of relating observations to fundamentals. In addition, the students spend six – eight weeks in industry during their vacations, so as to update themselves with real life industrial situations. In doing so, they get an opportunity to apply theory to real – life

problems. The students are also made to do independent projects, seminars and home papers. This develops their independent thinking and creative ability. It helps them analyze a given problem through various angles and synthesize innovative engineering solutions. Faculty members share their learning in industrial consultation in their classroom teaching. Undergraduate students are encouraged to carry out undergraduate summer research in ICT as well as other premier research institutes. Sometimes this work is also published in International peer reviewed journals. All these features make the Chemical Engineering course, most sought after in the country. The Chemical Engineering Department also caters to the 7 branches of Chemical Technology of the B. Tech. courses as well as Pharmacy in the relevant subjects.

Chemical Engineering Department also offers Master of Chemical Engineering course with intake of 30-40. This is a two year course with one year dedicated for research activity. Students work on real life problems faced by industry using modern research tools. Department also caters to other M. Tech courses such as Green Technology, Bioprocess Technology, Perfume and Flavor Technology. Looking at the importance of safety in chemical operations and frequent request from Industry, Department has also started since 2015, a Certificate course in Chemical Safety Management.

The programs conducted by the Department have excellent placement records. About 50% students pursue their career in Research and opt for M.S. and Ph.D. degree in leading US universities and other countries. Some of the students enroll for Management degree in IIMs and the rest of the students get placed in Chemical and allied Industries. The salary range for students placed in industries is 6 to 20 lakhs per annum.

The chemical engineering department of ICT has lion's share in the first generation entrepreneurs, since the inception of the Institute. Out of over 600 first generation entrepreneurs of ICT, almost 50% are from Chemical Engineering Department. However, these developments took place due to certain geographical advantages of Mumbai, such as being close to harbour or being an international trade centre. The entrepreneur development cell is being proposed to promote the spirit of techno-entrepreneurship in a bigger way. This will catapult ICT into the world stage as Stanford of East.

Almost all the faculty members of the Department have Ph.D. Degree and guide Ph.D. students. The faculty members have world recognition in their chosen field of research. Due to consistent interaction with Industries, the faculty members impart knowledge beyond syllabus to the students and prepare them for the needs for society. Many of the faculty members have been awarded as Best Teacher at State and National level. Faculty members apart from teaching, research and industrial consultation, also help in government bodies in policy making and proposal evaluations. Some of the faculty

members also serve on editorial board of prestigious International journals. The Department has vibrant environment and young faculty members are trained and supported by senior faculty to solve their problems. At present, the average age of the faculty members in the Department is 46. Due to the spectacular performance of the Department in last several decades, Department has attracted many young scientists/researchers from reputed universities abroad to be part of faculty members on regular positions, faculty recharge programs, INSPIRE program and DAE scientist positions. Department also has several endowment positions which help to attract and retain young as well as experienced teachers and researchers. Recently Dr. (Ms.) Manneppalli Lakshmi Kantam, Former Director of IICT, Hyderabad, has joined as Dr. B. P. Godrej Distinguished Professor and Dr. Pushpito K. Ghosh, Former Director of CSMCRI has joined as K. V. Mariwala – J. B. Joshi Distinguished Professor. Apart from regular full time endowments, Department has several other endowments under which Scientists/ Professors from foreign/other universities visit us, deliver lectures, interact with faculty and students.

Collaborative Academic Programs have been initiated with national and international institutes/R&D laboratories and industries. Following is the list of major organizations:

National:

- ❖ National Chemical Laboratory, Pune, India
- ❖ Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd. (Gokul Dairy)
- ❖ NMIMS- Nanoparticle synthesis and characterization
- ❖ COEP, Pune
- ❖ Bhabha Atomic Research Centre, India
- ❖ Dr. Babasaheb Ambedkar Technological University, Lonere
- ❖ Sardar Patel College of Engineering, Mumbai
- ❖ Shri Guru Gobind Singhji Institute of Engineering and Technology (SGGSIE&T), Nanded
- ❖ International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi,
- ❖ CSIR-National Institute for Interdisciplinary Science and Technology, Trivandrum, India,
- ❖ Centre for Advanced Bioenergy Research, Indian Oil Corporation Limited, India, DBT New and Extension Proposals, Indo Australia Grand Challenge Project, Indo UK BBSRC RICEFUEL Project
- ❖ The Energy and Resources Institute (TERI), New Delhi, , Indo Australia Grand Challenge Project
- ❖ CSIR-Central Salt and Marine Chemical Research Institute (CSIR-CSMCRI), Bhavnagar, India, Indo UK BBSRC SuBBSea Project
- ❖ Tata Institute of Social Sciences, Mumbai (TISS),
- ❖ Chemical Engineering Department, VIT, Pune

- ❖ Chemical Engineering Department, Sinhgad Institute of Technology, Pune
- ❖ Chemical Engineering Department, AISSMS College of Engineering, Pune
- ❖ Chemical Engineering Department, VNIT, Nagpur
- ❖ National Institute of Research in Reproductive Health, Parel, Mumbai
- ❖ Foundation of Medical Research, Mumbai, India
- ❖ National Burns Centre, Airoli, Navi-Mumbai

International Collaboration:

- ❖ Bradford University, UK, Co-crystallization under UKIRI
- ❖ Centre for Tropical Crops and Biocommodities, Queensland University of Technology, Brisbane, Australia, Prof. William Doherty, Dr. Philip Hobson, Indo Australia Grand Challenge Project.
- ❖ Centre for Energy, The University of Western Australia, Perth, Australia, Prof. Dongke Zhange, Indo Australia Grand Challenge Project.
- ❖ CSIRO Energy Transformed Flagship, North Ryde, New South Wales, Australia,
- ❖ Dr. Victoria Haritos, Indo Australia Grand Challenge Project.
- ❖ NSW Department of Primary Industries, New South Wales, Australia,
- ❖ Dr. Tony Vancov, Indo Australia Grand Challenge Project.
- ❖ Centre for Biomolecular Sciences, University Park, The University of Nottingham, UK, Prof. Nigel Minton, Indo UK BBSRC RICEFUEL Project.
- ❖ School of Biological Sciences, Queens University of Belfast, UK, Prof. Christine Maggs, Indo UK BBSRC SuBBSea Project.
- ❖ School of Biological and Biomedical Sciences, Durham University, Prof. John Bothwell, Indo UK BBSRC SuBBSea Project.
- ❖ Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth, Dr. David Bryant, Indo UK BBSRC SuBBSea Project.
- ❖ Centre for Synthetic and Systems Biology and School of Biological Sciences, The University of Edinburgh, Edinburgh, UK, Dr. Chris French, Indo UK BBSRC SuBBSea Project.
- ❖ Bangor University, Bangor, Gwynedd, UK, Dr. Katherine Steele, Dr. Lewis Le Vay, Indo UK BBSRC SuBBSea Project.
- ❖ The University of York Wentworth Way, York, UK, Dr. Neil Bruce, Dr. Simon Mc Queen Mason, Indo UK BBSRC RICEFUEL Project.
- ❖ Institute for Cell and Molecular Biosciences, Newcastle University, UK, Dr. Harry Gilbert, Indo UK BBSRC RICEFUEL Project.
- ❖ Department of Biological and Medical Sciences, Oxford Brookes University, UK, Dr. David A Fell, Indo UK BBSRC RICEFUEL Project.
- ❖ Department of Chemical Engineering, Centre for Process System Computations, Curtin University, Perth, Western Australia, Prof. Vishnu Pareekh, Dr. Ranjit Utikar, Indo Australia Grand Challenge Project, AISRF DBT Project.

- ❖ National University of Singapore, Singapore
- ❖ Norwegian University of Science and Technology, Norway
- ❖ Lappeenranta University of Technology, Finland
- ❖ Otto von Guericke University of Magdeburg, Germany
- ❖ King Mongkut's University of Technology (KMUTT) – Bangkok, Thailand
- ❖ University of West Hungary, Hungary
- ❖ University of Paderborn, Germany
- ❖ Professor Prodromos Daoutidis,
- ❖ University of Minnesota.
- ❖ University of New Castle
- ❖ University of Minho, Portugal

Industries at International level:

- ❖ The Coca Cola Company
- ❖ Bio-Rad laboratories USA
- ❖ Pepsico Inc, USA
- ❖ British Petroleum International
- ❖ Oxbow Ltd.
- ❖ Ecosphere Technologies

The Department is well-equipped with the state of art research facility. The list of major instrument added in last five years is provided below:

- ❖ Maliksons `LAB-30` Laboratory Model Single Screw Extruder
- ❖ Microreactors
- ❖ Scanning electron microscope
- ❖ Particle size analyzers
- ❖ High performance computing
- ❖ Thermal Imager Testo 885-2
- ❖ Variable Wavelength Detector VWD-3100
- ❖ High Speed Refrigerated Centrifuge
- ❖ Micro Ultra Centrifuge
- ❖ Nitrogen Generator
- ❖ Fixed Bed Micro Reactor
- ❖ High Pressure Reactor
- ❖ Agilent Nano-LC
- ❖ Agilent Capillary Electrophoresis
- ❖ ICP
- ❖ GC-MS
- ❖ HPLCs with different detectors

Centres of Excellence in Department

In the Xth and XIth Five Year Plan, BARC and Department of Chemical Engineering, ICT had undertaken a joint research program encompassing several DAE research projects in the Chemical Engineering field. Through the Virtual Centre, called, DAE-ICT Centre for Knowledge Based Engineering, BARC scientists and ICT faculty have collaborated and very successfully completed several projects. In view of the success of the collaborative program through the Centre for Knowledge Based Engineering, BARC and IGCAR proposed to enlarge the scope of collaboration by establishing the DAE-ICT Centre for Chemical Engineering Education and Research that will synergize the strengths of both these Organizations. The centre strives to develop innovative technologies to tackle the problems of efficient nuclear fuel utilization in the second and third stages of nuclear power program.

Based on the spectacular and consistent performance of the Department of Chemical Engineering, UGC has awarded first ever Networking Resource Centre in Chemical Engineering, in October 2008, to undertake following activities:

1. Research, training and skills development of the faculty and research scholars through periodic discussion, workshop and summer/winter schools
2. Capacity building by adopting faculty and Departments for augmenting their research skills and to mentor them
3. Hosting and facilitating researcher from other institutes/universities to carry out key experiments
4. Augmentation of information resource facility of the Department to provide quality research information to other institutes/researchers
5. To enhance and build the state of the art in-house research infrastructure and other research facilities in the Department.

The rapidly changing face of research in chemical engineering offers new opportunities for integrating new research areas within its fold and several workshops, courses, demonstration experiments, regular experiments and seminars have been organized by the Centre. The objective of many of these activities is to acquaint the Chemical Engineering community especially from academic institutions with the emerging face of our discipline, and the how to meet the new challenges that it poses to contribute at the leading edge. The idea is also to train the academic fraternity so that the overall research and development in chemical engineering is promoted. The interactive workshops also aim at initiating a dialogue on how the new face of Chemical Engineering can be used to address problems, specific to us as a growing nation. The vacation periods, long weekends and week-long program are undertaken which are publicized on the homepage of the institute and also communicated to all chemical engineering Departments.

IICHe Chemical Engineering Congress (ChemCon, 2013)





Ozone Day Celebration, 2015



1. World Forum for Crystallization, Filtration and Drying (2013, 2014)





Activities under UGC-NRC centre





1. **Year of establishment:** 1934
2. **Is the Department part of a School/Faculty of the university?:** Yes
3. **Names of programmes offered:**

Sr. No.	Course	UG/PG	Degree Abbreviation
1	Bachelor of Chemical Engineering	UG	B. Chem. Engg.
2	Master of Chemical Engineering	PG	M. Chem. Engg.
3	Ph.D. (Tech)		
4	Ph.D. (Sci)		

4. **Interdisciplinary programmes and departments involved:**

Sr. No.	Course	Other depts. Involved
1	M. Tech. (Bioprocess Technology)	Foods, DBT-ICT centre
2	M. Tech. (Green Technology)	Chemistry, Polymers, Oils
3	M. Tech. (Perfumery and flavour Technology)	Dyes, Oils and Pharmaceutical

5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

Sr. No.	Course	UG/PG
1	Post graduate Diploma in Chemical Technology	PG/ PhD/ industry personnel
2	Certificate course on safety and risk management	PG

6. **Details of programmes discontinued, if any, with reasons:** No
7. **Examination System:** Semester
8. **Participation of the department in the courses offered by other departments:**

Sr. No.	Course	UG/PG
1	B. Tech.	UG
2	M. Tech. Bioprocess Technology	PG
3	M. Tech. Green Technology	PG
4	M. Tech. Perfume and flavour Technology	PG

9. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	05	02	7
Associate Professors	06	03	6
Asst. Professors	06	03	3
Other	16	16	8

*Other includes endowment positions, INSPIRE fellows and UGC FRPs

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance.

Sr. No.	Name of the faculty member	Highest Qualification	Designation	Area of Specialization	Experience (years)	Research Under Guidance (Ph.D.) Last four years
1	Bhagwat S S	PhD	Professor	Interfacial sciences, Thermodynamics, Energy engineering	29	12
2	Dalvi V H	PhD	Assistant Professor	Energy engineering, Thermodynamics	5	--
3	Gaikar V G	PhD	Professor	Microwave assisted processes, Molecular modeling, process intensification	30	13

4	Gogate P R	PhD	Assistant Professor	Sonochemical processes	8	01
5	Jain R D	PhD	Assistant Professor	Biotechnology and nanotechnology	3	--
6	Jha N	PhD	Assistant Professor	Material science	3	--
7	Joshi J B	PhD	Professor	Reactor Design and CFD	42	06
8	Lali A M	PhD	Professor	Bioprocess technology, chromatographic separations	30	12
9	Marathe K V	M. Tech.	Associate Professor	Material science	24	03
10	Mathpati C S	PhD	Assistant Professor	CFD	7	1
11	Nemade P R	PhD	Assistant Professor	Catalysis and material science	5	--
12	Pandit A B	PhD	Professor	Sonochemical processes, reactor design and process intensification	25	11
13	Patwardhan A V	PhD	Professor	Advanced separation techniques, ionic liquids	8	03
14	Patwardhan A W	PhD	Associate Professor	CFD, energy engineering, advanced separation techniques	17	06
15	Rathod V K	PhD	Associate Professor	Enzymatic processes, advanced separation techniques	13	05
16	Sontakke S M	PhD	Assistant Professor	Photochemical processes	4	--
17	Thorat B N	PhD	Professor	Crystallization, Drying and filtration technology	21	10
18	Vaidya P D	PhD	Assistant Professor	Catalysis and CO ₂ sequestration	8	04
19	Yadav G D	PhD	Professor	Catalysis, process intensification	29	19

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors:

Sr. No.	Name	Designation
1	Professor M. M. Sharma	Emeritus professor
2	Dr. M. Sriram	Visiting Faculty
3	Mr. Yogesh Anvekar	Visiting Faculty
4	Ms. Anjali Majumdar	Visiting Faculty
5	Mr. Goyal O.P.	Visiting Faculty
6	Dr. Ravi Mariwala	Visiting Faculty

List of Endowment:

Sr.No.	Date	Name of Faculty	Title	Endowment
1.	28.11.2013	Professor D.H. Thompson	Cyclodextrin Based Materials for Gene Delivery and Niemann-Pick C Type Therapy	Shri G.M. Abhyankar Memorial Distinguished Fellow
2.	02.01.2014	Professor Prashant Jain	Elucidating Chemical Reactions on the Nanoscale	Golden Jubilee Visiting Fellowship
3.	09.01.2014	Professor R. Krishna Univ. of Amsterdam	Molecular Traffic in Nanoporous Materials	B S Joshi Distinguished Fellow
4.	16.01.2014	Dr. Ken Williams	The science and technique behind Raman Spectrometer and its application in Material Sciences	TEQIP
5.	30.01.2014	Dr. Uday Shenoy	Targeting and Network Synthesis for Optimal Use of Resources	Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship
17	4.02.2014	Prof. Artur Cavaco-Paulo,	Micro/nanotechnology and Biotech for pharma and personal care	Professor B.D. Tilak Visiting Fellowships
18	20.02.2014	Dr. Allen P. Minton	How biochemistry <i>in vitro</i> can differ from biochemistry <i>in vivo</i>	K.J. Somaiya Visiting Professor Fellowship
19	13.03.2014	Kiran Golwalkar	Safety Management and Project Management in Chemical Industry	Prof. R.A. Rajadhyaksha Memorial Lecture
20	27.03.2014	Kiran Golwalkar	Safety Management and Project Management in Chemical Industry	TEQIP
21	07.04.2014	Prof. Suresh	Quantum molecular sieving of	Golden Jubilee Visiting

		Bhatia	light isotopes	Fellowship
22	17.04.2014	Prof. Dr. Asit Baran Mandal	How much we know about self-aggregated / self assembled systems? Utility of various techniques	B.D. Tilak Visiting Fellow
23	21.04.2014	Prof. Alfredo Ortiz	The importance of Ionic Liquids for attaining sustainable process intensification	Golden Jubilee Visiting Fellowship
24	02.05.2014	Dr. Jeff Kenvin	Textural Characterization and a Unified Approach to Isotherm Modeling & Thermodynamic Parameters	K.J. Somaiya Visiting Professor
25	22.05.2014	Prof. S.P. Moulik	Energetic of Micelle formation: Non agreement between the Enthalpy Measured by the direct method of Calorimetry & the indirect method of Van't Hoff	Dr. J.P. Kane Visiting Fellowship
26	29.05.2014	Dr. M. O. Garg	Simultaneous Production of US Grade Gasoline and Pure Aromatics from High Severity FCC Gasoline	Prof. R.A. Rajadhyaksha Memorial Lecture
27	09.07.2104	David Hodge	Alkaline and Oxidative Chemical Pretreatments and Fractionations for the Production of Fuels, Chemicals, and Materials from Lignocellulose	Golden Jubilee Visiting Fellowship
28	14.07.2014	Ashutosh Sharma	Self-organization on Small Scales: Fabrication beyond the Top-down and Bottom-up	Shri V.V. Mariwala Visiting Professorship
31	16.09.2014	Bala Subramaniam	Resource-Efficient Catalytic Technologies for Emerging Feedstocks	The Dow Professor M.M. Sharma Distinguished Visiting professorship in Chemical Engineering
35	10.2.2015	Prof. Mohan Karmarkar	practical reactor design	
36	29.11.2015	Dr. Nejat Rahmanian	Seeded Granulation	K.J. somaiya Visiting Professorship
37	21.01.2015	Prof. P.Somasundaran	Structure Property/Performance Relationships for Synergy and Antagonism New possibilities of greener chemicals for sustainable and benign consumer products	Dr. Balwant S. Joshi Distinguished Visiting Professorship

12. Percentage of classes taken by temporary faculty – programme-wise information

We do not have temporary faculty. Subjects related to humanities, management and communication skills are taken by visiting faculty which contribute to 6-8% of total credits.

13. Programme-wise Student Teacher Ratio:

Sr. No.	Course	Student Teacher Ratio
1	B Chem Engg (UG)	10.12
2	M Chem Engg (PG)	1.6

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

Sr. No.	Position	Sanctioned	Filled
1	Higher grade stenographer	2	--
2	Lower grade stenographer	2	--
3	Technical	21	12

15. Research thrust areas as recognized by major funding agencies:

- 1) Green chemistry and engineering
- 2) Energy science and engineering
- 3) Reactor Design
- 4) Advanced Separation Techniques
- 5) Biotechnology & biomedicine
- 6) Nanotechnology and materials science
- 7) Process systems engineering
- 8) Environmental protection and Hazardous waste management
- 9) Product Engineering

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Sr. No.	Name of Faculty	Funding Agency	National/ International	Project Investigator	Grant (in lakhs)	Duration	Project title
1	Bhagwat S S	IGCAR		Bhagwat S S	25 Lakhs	3 years	Alternative methods/solvents for dissolution: (a) Methane sulphonic acid derivatives for dissolutions & electrowinning, (b) Sonochemical method for dissolution of ThO ₂
		NTPC		Bhagwat S S	71 Lakhs	4 years	Improvement of Turbine Cycle Heat Rate Through Multi-component Ammonia Liquor Absorption Engine (MALAE)
		BRNS		Bhagwat S S	16 Lakhs	2 years	Development of foam formulation
		Rajiv Gandhi Commission for Science & Technology		Bhagwat S S	266.8 Lakhs	4 years	Cold storage for Post harvest preservation

		(RGCST)					of fruits & vegetables using Solar & Biomethane Heat Based Refrigeration
		British Petroleum International		Bhagwat S S	54 Lakhs	4 years	Refrigeration utilizing waste heat as energy inputs
		Aditya Birla Group		Bhagwat S S	1 Lakhs	1 year	Polymer Surface wettability
		IPCA		Bhagwat S S	--	6 Months	Vapor-Liquid equilibrium thermodynamics
		FDC		Bhagwat S S			Interfacial properties of eye drop formulations
		Tri-Diagonal Solutions (TDS)		Bhagwat S S	8 Lakhs		Forming and aeration
		Amines and plasticizers		Bhagwat S S	2.53 lakh	3 years	Surface studies on lean amine solvents from gas treating units
2	Dalvi V H	Ministry of Food Processing Industries		Dalvi V H	25.00 Lakh	3 years	Development of a Continuous

							Rice Cooker
3	Gaikar V G	Department of Atomic Energy / Knowledge Based Engineering Centre		Gaikar V G	84.4 Lakhs	5yrs	Design of solvent and extractant by molecular modeling for heavy metals
		Department of Atomic Energy / Knowledge Based Engineering Centre		Gaikar V G	48.4 Lakhs		Experimental determination of H ₂ -I ₂ -HI-H ₂ SO ₄ vapor-liquid equilibria
		Indira Gandhi Centre for Atomic Research (IGCAR)		Gaikar V G	24.725 Lakhs		Studies in Runaway reactions
		Indira Gandhi Centre for Atomic Research (IGCAR)		Gaikar V G	24.725 Lakhs		Studies on steam pyrolysis of a CHON Amide as a waste solvent management method
		Indo-European Collaboration, Department of Science and Technology (DST-AMCOS)		Gaikar V G	79.88 Lakhs	2008-2012	Advanced materials as CO ₂ removers: A computational study of CO ₂ sorption Thermodynamics and

							kinetics
		Hindustan Unilever Ltd, Mumbai		Gaikar V G	Rs. 45 lakhs	Four years	Thermodynamics of Solubility of Tea components
		Hindustan Unilever Ltd, Mumbai		Gaikar V G	Rs. 10.5 lakhs	One year	Solubility of Ca-Stearate in water
4	Gogate P R	Department of Science and Technology, Govt. Of India, New Delhi		Gogate P R	10.2 Lakhs	2010-2012	Development of novel treatment strategies for treatment of water containing pesticides
		University Grants Commission, New Delhi		Gogate P R	8.6 Lakhs	2011-2013	Process Intensification of emulsification and atomization
		Unilever, Bangalore		Gogate P R	11.1 Lakhs	July 2013 to July 2014	Wastewater treatment
5	Jain R D	DAE-BRNS		Jain R D	16.95 Lakhs	Three years (2013-2016)	Polysaccharide Based Nanocarriers for Improved Therapy of Systemic Fungal Infections
		DST Nanomission		Jain R D	282 Lakhs	Three years (2014-	Development and evaluation

		2014-2017				2017)	of siRNA loaded nanomedicine in computational and cellular Models
6	Jha N	DST		Jha N	35 lakh	5 yrs	Development of electrocatalyst for fuel cell
7	Joshi J B	BRNS		Joshi J B	159.14 Lakhs		Development of ACE
		DAE-BARC		Joshi J B	221.00 Lakhs		Passive Decay Heat Removal system of AHWR
		DAE-IGCAR		Joshi J B			Fumeless Dissolution in Thermosiphon and Rotary Dissolver
		DAE-BARC		Joshi J B			CFD simulation of reactive (combustion) submerged gaseous jet under steady and unsteady state conditions
		DAE-BARC		Joshi J B			Studies in

							Synthesis and Characterization of Carbon Nanotubes by Catalytic Chemical Vapor Deposition
		DAE-BARC		Joshi J B			Studies on High Strength Carbon Fibre Composites
8	Lali A M	Bio-Rad laboratories USA		Lali A M	Rs. 22.50 lakhs	2008-2011	BioRad-MUICT Initiative on Adsorptive and Chromatographic Separations for Biotech and Allied Industry
9		Pepsico Inc, USA		Lali A M	Rs. 98.17 lakhs	2008-2011	Assisted Extraction, Isolation and Scalable Chromatographic Purification & Biotransformation of Active Components from Plants/Herbs
		General Mills		Lali A M	\$ 45000	2010-	Value Added

						2011	Products from Milling By-products
10		General Mills		Lali A M	\$ 45000	2010-2011	Value added Products from GMI Vegetable Waste streams
		Chemtrols India Ltd		Lali A M	40.00 lakhs	2010-2012	Development of process for production of Lactic acid and Poly-lactic Acid
11		DST, India		Lali A M	1210 Lakhs	2014-2016	Green Enzymatic fat-splitting technology for production of fatty acids and acyl glycerol
12		DBT, India		Lali A M	1800 Lakhs	2013-2018	DBT-ICT Centre for energy biosciences: New and extension proposals
13		DBT-BBSRC		Lali A M	806 Lakhs	2013-2016	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw

14	Marathe K V	Department of Science and Technology, Govt. of India, New Delhi		Marathe K V	17 lakhs	2011-2013	Removal of flouride from concentrated stream obtained after membrane separation treatment of ground water
15	Mathpati C S	DAE		Mathpati C S	80 Lakhs		Thermal hydraulic studies related to coolants for new generation reactors
16		TEQIP, CoE-PI		Mathpati C S	16 Lakhs	1 year	Design aspects of two opposed jet microreactor: Experimental and computational fluid dynamics
17	Nemade P R	RCF Ltd		Nemade P R	Rs 12.26 L	Jul 2012- Jun 2013	Development of Quality Water-resistant Gypsum Plaster
18		BIRAC-Bill and Melinda Gates		Nemade P R	Rs 25.00 L	1 year	Hygienic Water-Free

		Foundation					Toilet
19		SERB: Scheme for Young Scientists		Nemade P R	Rs 22.40 L	3 years	Development of Polymerizable Ionic Liquid Membranes for Gas Separations
20	Pandit A B	Department of Atomic Energy under the scheme of Knowledge based Engineering		Pandit A B	88.9 Lakhs	2005 – 2011	Characterization of cavitation phenomena and its applications in solid-liquid mass transfer operations
21		Jawaharlal Nehru Center for Science Society – UGC		Pandit A B	25 Lakhs	2009 – 2012	Development of novel cavitation based treatment schemes for water disinfections
22		Department of Science and Technology under India Australia Fund for Scientific and Techno-logical cooperation		Pandit A B	9 Lakhs	2007 – 2010	Advanced oxidation processes for the degradation of organic pollutants in aqueous environment
23		(IGCAR)		Pandit A B	23.82 Lakhs	2008 – 2012	Design of Sodium Cold-Trap
24		(IGCAR)		Pandit A B	23.8 Lakhs	2008 – 2012	Preparation of Mono-Disperse MOX

							Sphere
25		(IGCAR)		Pandit A B	24.8 Lakhs	Pandit A B	Role of Cavitation and its Prevention in Sodium Pump
26		(IGCAR)		Pandit A B	21.5 Lakhs	2008 – 2012	Scale up of MOX Precipitation
27		(IGCAR)		Pandit A B	38 Lakhs	2015-2018	Characterization of the regeneration process for liquid sodium cold trap in secondary system of fast
28		BPCL		Pandit A B	25 Lakhs	2011-2014	Degradation of Industrial Wastewater
29		Hindustan Unilever Ltd., Bangalore		Pandit A B	75 Lakhs	2013-2018	LDH Formation and Converging Diverging Cavitating
30	Patwardhan A V	Department of Atomic Energy		Patwardhan A V			Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane (HFSLM)

31		Department of Atomic Energy		Patwardhan A V	Rs 72.4 Lakhs		"Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membranes "
32	Patwardhan A W	IGCAR		Patwardhan A W	24.2 Lakhs	2007 – 2011	"Thermal Mixer Design"
33		IGCAR		Patwardhan A W	Rs 24.9 Lakhs		"Flow Distribution in Inlet Plenum of Steam Generators"
34	Rathod V K	IGCAR		Rathod V K	24.57 Lakhs	2008 - 2011	Removal of dissolved TBP from aqueous stream
35		DST/FAST TRACK		Rathod V K	19.00 Lakh	2008 - 2011	Biodiesel from Waste Frying oil
36	Sontakke S M	DST		Sontakke S M	35 lakh	5 years	Development of anodic material for dye sensitized solar cell
37	Thorat B N	Rajiv Gandhi Commission for S&T, Government of Maharashtra		Thorat B N	25 lakhs	12 months	Ultrahealth: Water Fun Station

38		Bill and Melinda Gates Foundation		Thorat B N	USD 100,000	18 months	Solar Grain Dryer
39		Bill and Melinda Gates Foundation		Thorat B. N.	USD 100,000	18 months	Solar Conduction Dryer
40		Rajiv Gandhi Commission for S&T, Government of Maharashtra		Thorat B. N.	100 Lakh	2 years	Jaggery Granulation
41		Bill and Melinda Gates Foundation		Thorat B. N.	USD 100,000	2013	Cassava Drying
42		Gujrat Stevia Growers and Marketing Federation		Thorat B. N.	5.00	2013	Stevia Processing
43		Gujarat Heavy Chemical Limited		Thorat B. N.	10.00	2015	Eco-friendly detergent
44	Vaidya P D	University Grants Commission		Vaidya P D	7.47 Lakhs	1st February 2011 to 31st January 2014	CO2 capture using novel amines
45		Carbon Clean Solutions Pvt. Ltd.		Vaidya P D	12.31 Lakhs	1st October 2010 to 30th September 2011	Novel solvents for CO2 capture from flue gas
46		DST		Vaidya P D	29.82 Lakhs		Diesel Production by Karanja-oil hydrotreatment
47		DAE		Yadav G D	95.00		Self

	Yadav G D						assembly of tethered nanoparticles :Macromolecule' for tailored nanomaterials
48		DST-Indo-Finnish Project		Yadav G D	30.00		Sustainable catalytic chemical synthesis with carbon dioxide as feedstock (University of Oulu, Finland)
49		Ministry of Chemicals and Fertilisers; Hindustan Insecticides		Yadav G D	167.00		Alternatives to DDT: Synthesis of New Molecules , Toxicological Studies and Scale - Up
50		ONGC Energy Centre		Yadav G D	12.00		Some preliminary studies on HI synthesis
51		ONGC Energy Centre		Yadav G D	860.00		ICT-OEC novel process for production of hydrogen
52		DST- Indo-EU New Indigo		Yadav G D	€50000		Green Water Tech (with

		Project					University of Cantabria, Santander, Spain & University of Oulu, Finland)
53		UK India Education and Research Initiative (UKIERI)		Yadav G D	25.00		Green processing technologies for poorly soluble drugs (with University of Bradford)
54		Indo-US S & T Forum		Yadav G D	50.00		Centre on PROTECT: Program for Research on Thin-Films and nanostructured Emerging Coating Technologies (with SUNY Buffalo, NY)
55		ONGC Energy Centre		Yadav G D	200.00		Molten salts for energy storage
56	J.B. Joshi	DBT		Joshi JB	34.00	1997-2001	Design of Fermenters for Shear Sensitive Proteins and Enzymes.

57		LRI		Joshi JB	3.00	1994-2001	Efficient scale-up of solar cookers
58		Reliance Ind. Ltd.		Joshi JB	6.00	1998-2002	Development of new impellers designs for three phase stirred reactors
59		Hindustan Polymides and fibres Ltd		Joshi JB	5.00	2002-2005	Solar Energy based refrigeration systems
60		United Phosphorus Ltd.		Joshi JB	7.00	2002-	Miniaturization of liquid-liquid extraction Equipment
61		BRNS		Joshi JB	150.00	2002-2010	Development of jet reactors
62		Department of Atomic Energy		Joshi JB	150.00	2003-2010	Knowledge Based Engineering : Improvements in reactor design, heavy water production efficiency, nuclear waste management and development of novel

							separation processes.
63		BRNS		Joshi JB	150.00	2007-2010	Development of Annular Centrifugal Extractors
64		Department of Atomic Energy		Centre	7500.00	2008-2017	Chemical Engineering Education and Research
65		Department of Biotechnology		Centre	2400.00	2007-2012	Energy Biosciences

17. Inter-institutional collaborative projects and associated grants received

a) National collaboration b) International collaboration

Professor V G Gaikar

a) National collaboration			
1	Innovation Networking of TEQIP Institutes in Maharashtra (ICT, DBATU, VJTI, SPCE, SGGSET	TEQIP, MHRD (2014-16)	150 lakhs
b) International collaboration			
2	Advanced materials as CO2 removers: A computational study of CO2 sorption Thermodynamics and kinetics	Indo-European Joint Project- Department of Science and Technology (2009-12)	78 Lakhs

Prof. A. B. Pandit

a) International collaboration			
1	Advanced oxidation processes for the degradation of organic pollutants in aqueous environment	Department of Science and Technology under India Australia Fund for Scientific and Techno-logical	09 Lakhs

		cooperation (2007-2010)	
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Prof.G.D. Yadav

a) International collaboration			
	Indo-US S and T Forum Centre : PROTECT along with DrTapan Rout of Tata Steel Jamshedpur	SUNY Buffalo, USA (Now with Texas A & M University)	
	Indo-Canadian I.C. IMPACTS with University of British Columbia, University of Alberta and University of Toronto	University of Alberta, Canada	
	Collaboration on Catalysis through student exchange	University of Waterloo, Canada	
	Indo-Finish Project on GreenCO2 Indo-EU New Indigo Greenwater	University of Oulu, Finland	
	Joint Organizers, Indo-German Conference On Catalysis, Rostock (DST and German Govt.)	Leibnitz Institute of Catalysis (LIKAT), Rostock, Germany	
	Indo-European INDIGO project GreenWater	Universidad de Cantabria, Spain	

Prof B.N. Thorat

International collaboration			
1	Indo Brazil , No.INT/Brazil/P-01/2013 Engineering aspects of manufacturing of Granular Rebaudioside A from stevia.	Universidade de Sao Paulo, Brazil	28.77 lakhs

Professor J. B. Joshi

a) National collaboration

1	(a) Design and Optimization of Solar Thermal Technologies	Indian Institute of Technology, Bombay	
2	(a) Application of Three Phase Fluidization for Froth Flotation (b) Design of Solid-Liquid Fluidized Beds and Circulating Solid-Liquid Fluidized Beds (c) Design of Multiphase Reactors: Biomethanation	Indian Institute of Technology, Gandhinagar	
3	(a) Thermal Hydraulics (b) Hydrogen production by thermochemical methods (c) Unit operations in nuclear energy	Homi Bhabha National Institute, Mumbai	
b) International collaboration			
2	(a) Fluid Catalytic Cracking: Contacting of Particle and Droplet at High Temperature (b) Direct Numerical Simulation of Flow Past Spheres and of Solid-Liquid Fluidized Beds (c) Characterisation of Turbulent Dispersion in Multiphase Systems (d) Hydrodynamics and Mass Transfer Characteristics of Microfluidized Beds for Chromatographic Separations	University of New-Castle, Australia	
	(a) Discrete Particle Modeling of Solid-Fluid Suspensions	Louisiana State University, USA	

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE,

etc.; total grants received

Sr.No.	Projects	Total Grant	Sanction	Received grant
1	UGC-CAS	15,000,000	11,415,000	11,415,000
2	DST-FIST	7,25,00,000	3,73,00,000	3,73,00,000
3	UGC-NRC	10,00,00,000	9,00,00,000	9,00,00,000

19. Research facility / centre with

- **State recognition**
 - a) Innovation Networking of TEQIP Institutes in Maharashtra
- **National recognition**
 - a) UGC Networking Resource Centre in Chemical Engineering
 - b) DAE-ICT Centre for Chemical Engineering Education and Research
- **International recognition**

**Ranking of CHEMICAL ENGINEERING Department
WORLD RANKING OF CHEMICAL ENGINEERING SCHOOLS (2007-11)
(Prof. Jude Sommerfeld, USA, 22nd Jan. 2012)**

Institute	Pubs 2010	Total Pubs 06-10	Rank	2011 Pubs	07-11 Pubs	Rank
India						
Mumbai (ICT)	185	960	1	198	1025	1
Bombay (IIT)	72	368	2	75	393	2
Kanpur (IIT)	72	356	3	80	378	3
Kharagpur (IIT)	68	301	4	59	305	4
Madras (IIT)	60	263	5	55	281	5
Anna	39	257	6	56	261	6
Bangalore (IISc)	42	204	7	51	225	7
Roorkee (IIT)	30	188	8	31	205	8
Delhi (IIT)	43	169	9	43	188	9

Guwahati (IIT)	34	100	12	46	138	10
USA						
Mass. Inst. Tech.	269	1470	1	341	1624	1
Minnesota	202	1014	2	211	1067	2
Georgia Tech	197	942	4	234	1061	3
Texas	175	985	3	171	986	4
Cal/Berkeley	146	812	5	177	899	5
Cal/Davis	160	808	6	165	874	6
Delaware	123	647	10	191	784	7
CANADA						
Alberta	193	861	1	222	980	1
UK						
Imperial College London	178	875	1	222	1009	1

20. Special research laboratories sponsored by / created by industry or corporate bodies

In 2009, DBT-ICT Centre for Energy Biosciences with Agilent Technologies has setup a state of art Mass Spectrometry Laboratory at ICT. The Agilent-Bruker Ion Trap, Agilent Triple Quadrupole and the Agilent Nano-spray Quadrupole TOF that constitute the holy trinity of hybrid mass spectrometers are available at the laboratory. Each of these instruments in conjunction with appropriate bioinformatics software, can be applied to assess 'markers' at concentrations as low as a few femtomoles. Of these, the Ion trap and Triple Quadrupole are functional at the screening and identification level, wherein complex broths can be effectively unravelled, while the high accuracy and mass range of the Quadrupole TOF allows, identification of low-abundance, novel extrolites. By applying a combination of these instruments, it is possible to perform high-throughput, large scale biomarker identification, screening and confirmation.

21. Publication:

	2014-15	25					25	2445			0.394-4.321	44	
Lali AM	2010-2011	5					9	135	2.26	0.2436	0.37-4.194	5	6
	2011-2012	2					13	421	1.2085	1.0945	3.565-4.169	10	6
	2012-2013						9	778				5	36
	2013-2014	10					5	266	1.455	1.664	3.84-4.169	8	47
	2014-15	56					56	180			3.84-4.169	13	
Marathe KV	2010-2011	4					4	32	1.942	0.9025	0.63-3.199	3	
	2011-2012	18					2	54	1.699	1.095	2.169-4.31	2	
	2012-2013	1					2	147	0.08	0.071	1.171	0	
	2013-2014	10					7	94	0.48	0.398333	1.171-3.152	5	
	2014-2015	24					24	59			1.171-3.152	6	
Mathpati CS	2010-2011						4	92	2.323	0.85775	1.231-2.587	7	
	2011-2012	11					5	56	1.667	0.0	0.72	5	
	2012-2013						2	206					
	2013-2014	10					3	138	2.108	1.523	0.831-2.739	7	
	2014 -	5					5	3	1.58	1.09	0.898 -	1	

	2015										2.108		
Pandit AB	2010-2011	18		3			27	924	2.96	1.147	4.321-4.494	45	
	2011-2012	25		4			29	1153	1.5842	1.177652		31	15
	2012-2013	20					31	9084	1.690833	1.208905	2.0-4.5	45	6
	2013-2014	10					41	10840			1.173-4.321	56	15
									1.48708	1.01972			
	2014 - 2015	44					44	9062	1.48708	1.01972	1.173-4.321	51	
Patwardhan AV	2010-2011	12			1				1.36	0.94	0.789-4.529	2.0-2.3	
	2011-2012	4						253	1.5345	0.8935		9	
	2012-2013	3						339	0.461333	0.357	1.17-2.2		
	2013-2014	10						612			0.722-3.756	13	1
									0.7026	0.7494			
	2014 - 2015	3					3	0	0.7026	0.7494	0.93 – 0.16	5	
Patwardhan AW	2010-2011	5					12	125	1.28	1.02	0.952-2.337	20	
	2011-2012	7					12	457	1.123333	0.715	0.991-2.337	12	

	2012-2013	3					11	317	1.631333	0.991	0.925-2.348	32	
	2013-2014	10					11	784	0.73775	0.59625	0.991-2.384	16	
	2014-2015	9					9	4	0.73775	0.59625	0.889-2.752	21	
Rathod VK	2010-2011	08			1		7	142	2.01	1.01	1.714-4.321	6	1
	2011-2012	6					11	108	1.5018	0.8986	0.2-2.36	5	
	2012-2013						16	124	1.158	0.775	1.034-4.321	8	
	2013-2014	10					29	207	1.10664	0.72884	1.034-4.321	11	1
	2014 - 2015	42					42	130	1.10664	0.72884	0.889-4.402	13	
Thorat BN	2010-2011	27		2			22	141	4.2	0.206	0.511-3.091	7	2
	2011-2012	13		3			15	221	0.5515	0.327455	0.628-2.328	9	2
	2012-2013	9					12	184	0.522	0.522	2.084	2	4
	2013-2014	11					8	438	0.3394	0.2798	0.5-3.091	11	4
	2014-2015	64					64	176			0.5-3.091	13	
Vaidya PD	2010-2011	7					6	122	1.06	0.627	1.104-5.330	5	
	2011-2012	7					9	434	0.871333	0.640667	1.104-3.22	10	
	2012-	9					10	397	0.928875	1.083429	1.23-	5	

	2013									4.32		
	2013-2014	10				8	415	0.6899	0.5167	1.104-4.321	17	1
	2014-2015	61				61	376			1.104-4.321	18	
Yadav GD	2010-2011	48	3			16	763	1.689	2.589	2.618-5.787	7	56
	2011-2012	18	3			34	1079	2.76	1.9652	2.618-5.787	11	58
	2012-2013	261				42	615	1.421	1.137	0.592-6.921	11	
	2013-2014	295	3			42	1102	1.9898	1.592133	0.59-15.575	8	68
	2014-2015	120				120	1142			0.59-15.575	41	
Dalvi VH	2010-2011	3				-	-	-	-	-	-	-
	2012-2013					-	-	-	-	-	-	
	2013-2014	1				1	67	1.761	2.145	4.8-9.7	3	1
	2014-2015	10				10	132			4.8-9.7	3	
Nemade PR	2010-2011	3					44					
	2012-2013						37					
	2013-2014	4				-	121	1.22	0.69	1.893-10.677	2	1
	2014-2015	2				2	41			1.893-10.677	2	
Joshi JB	2010-2011	17		1		28	8104	1.06	0.584	0.875-4.321	52	
	2011-	21				22	5461	1.276875	0.832929	2.184-	26	

	2012									4.231		
	2012-2013	13				35	2690	1.155	0.760	0.653-4.321	8	1
	2013-2014	10				34	1379	1.249455	0.874636	1.104-4.38	7	
	2014-2015	31				31	1491			1.104-4.38	47	
Jha N	2010-2011											
	2011-2012	11				152	92	0.7515	0.668	1.215-16.146	4	3
	2012-2013						126					
	2013-2014					4	140	1.154909	0.596	0.759636	10	1
	2014-2015	1				1	170			0.759636	10	
Singh SK	2010-2011											
	2011-2012	9		1				0.637	0.562	1.125-2.2		
	2012-2013											
Sontakke SM	2010-2011											
	2011-2012	4					13	1.3205	1.0355	0.99-4.03	1	
	2012-2013	1				1	23	1.905	1.585	4.321		
	2013-2014						28	-	-	-	3	
	2014-2015	0					22	-	-	-	3	
Jain RD	2010-						52					

	2011												
	2011-2012						91						
	2012-2013						98						
	2013-2014	10					187	1.56	2.96	3.13	7	1	
	2014-2015	6				6	153			3.13	10		
Pinjari DV	2013-2014	10				16	272	2.075	1.585	3.83-4.68	11	2	
	2014-15	15				15	310	1.947	1.432	1.632-4.494	13		
Jogwar SS	2013-2014	9				3	93	0.9392	0.9698	1.805-2.493	5		
	2014-15	3				3	56	1.625	1.038	2.587-2.784	6		
Ghosh PK	2014-15	16				16	548	1.885	2.251	3.845.056	24	7	
Laxmikantam M.	2014-15	18				18	29	0.761	0.913	0.814-4.089	2		

22. Details of patents and income generated:

Patent Registered	Patent Title	Patent Number	Patent Grant Year
National	Combustion synthesized zirconia as material and catalyst	16/MUMU/2011	2011
National	Hydrogen production method by multi-step copper-chlorine thermochemical cycle	1973/MUM/2011	2011
National	Effect of operating parameters on the performance of electrochemical cell in copper-chlorine cycle	1974/MUM/2011	2011
National	Electrochemical cell used for the production of copper using Cu-Cl thermochemical cycle	1975/MUM/2011	2011
National	Unsupported titania membrane and method for preparation thereof	1109/MUM/2012	2012

National	Process for production of 2-oxazolidinones using efficient and reusable heterogeneous catalyst or biocatalyst	1112/MUM/2012	2012
National	Process for production of [4-(alkyl/aryl)-oxy-1,3-dioxolane-2-one] using heterogeneous catalyst	1111/MUM/2012	2012
National	Combustion synthesis of nanocrystalline alkali and alkaline earth metal oxide or mixture thereof and its applications	628/MUM/2012	2012
National	Method for production of membrane	627/MUM/2012	2012
National	Thrombolytic enzyme and its preparation process	1551/MUM/2011	2011
National	Synthesis of Corrosion Inhibiting Nano Pigment Comprising Of Nano Container for Corrosion Inhibitive Coating	1539/MUM/2012.	2011
National	Combustion synthesized zirconia as material and catalyst	16/MUMU/2011	2011
National	Hydrogen production method by multi-step copper-chlorine thermochemical cycle	1973/MUM/2011	2011
National	Effect of operating parameters on the performance of electrochemical cell in copper-chlorine cycle	1974/MUM/2011	2011
National	Electrochemical cell used for the production of copper using Cu-Cl thermochemical cycle	1975/MUM/2011	2012
National	Unsupported titania membrane and method for preparation thereof	1109/MUM/2012	2011
National	Process for production of 2-oxazolidinones using efficient and reusable heterogeneous catalyst or biocatalyst	1112/MUM/2012	2012
National	Process for production of [4-(alkyl/aryl)-oxy-1,3-dioxolane-2-one] using heterogeneous catalyst	1111/MUM/2012	2012
National	Combustion synthesis of nanocrystalline alkali and alkaline earth metal oxide or mixture thereof and its applications	628/MUM/2012	2012

National	Method for production of membrane	627/MUM/2012	2012
National	Thrombolytic enzyme and its preparation process	1551/MUM/2011	2011
National	Unsupported titania membrane and method for preparation thereof	1109/MUM/2012	2012
National	Process for production of 2-oxazolidinones using efficient and reusable heterogeneous catalyst or biocatalyst	1112/MUM/2012	2012
National	Process for production of [4-(alkyl/aryl)-oxy-1,3-dioxolane-2-one] using heterogeneous catalyst	1111/MUM/2012	2012
National	Combustion synthesis of nanocrystalline alkali and alkaline earth metal oxide or mixture thereof and its applications	628/MUM/2012	2012
National	Method for production of membrane	627/MUM/2012	2012
International	An Absorption Refrigeration System and a Process for Refrigeration utilizing the same	W0/2010/038236	2013
National	Improved Thermodynamic Cycle	IN2011/000169	2013
National	Ultrasound Assisted Process for Synthesis of Chalcone	1504/Mum/2011	2013
International	Hydrogen production method by multi-step copper-chlorine thermochemical cycle	US 8968697	2014
National	Cavitation Induced Nanoemulsion	215/MUM/2015	2015
National	System for enhanced anticorrosive protection by using n-Octyl phosphonic acid based functionalized Zinc phosphate, Indian Patent Application No.	1834/MUM/2015	2015
National	Effective Check valve for water disinfection	4719/MUM/2015	2015
	Combustion synthesized zirconia as material and catalyst	IND/0016/MUMU/2011	2011
	Hydrogen production method by multi-step copper-chlorine thermochemical cycle	IND/1973/MUM/2011	2011
	Effect of operating parameters on the performance of	IND/1974/MUM/2011	2011

	electrochemical cell in copper-chlorine cycle		
	Electrochemical cell used for the production of copper using Cu-Cl thermochemical cycle	IND/1975/MUM/2011	2011
	Process for production of propanediol	PCT/IN2010/000406	2011
	Bimetallic manganese oxide octahedral molecular sieve catalysts (M1-M2-OMS-2) for hydrogenolysis	PCT/IN2010/000406	2011
	Process for the production of acrolein and reusable catalyst thereof.	PCT/IN2010/000755	2011
	Method for conversion of sucrose to value-added chemicals	PCT/IN2010/000834	2011
	Process for production of furfural from xylose by using heterogeneous catalyst	PCT/IN2010/000835	2011
	Production of 5-hydroxymethylfurfural.	PCT/IN2011/000048	2011
	Method for catalytic dehydration of glycerol	PCT/IN2011/000061	2011
	Catalyst composition (ICaT-3) comprising of chlorosulfonic acid treated anatase titania	PCT/IN2011/000091	2011
	Catalyst composition (ICaT-2) comprising of rare earth metal	PCT/IN2011/000102	2011
	Method for production of membrane	IND/0627/MUM/2012	2012
	Combustion synthesis of nanocrystalline alkali and alkaline earth metal oxide or mixture thereof and its applications	IND/0628/MUM/2012	2012
	Unsupported titania membrane and method for preparation thereof	IND/1109/MUM/2012	2012
	Process for production of [4-(alkyl/aryl)-oxy-1,3-dioxolane-2-one] using heterogeneous	IND/1111/MUM/2012	2012

	catalyst		
	Process for production of 2-oxazolidinones using efficient and reusable heterogeneous catalyst or biocatalyst	IND/1112/MUM/2012	2012
	Process for preparing 2,5-diformylfuran from 5-hydroxymethylfurfural utilizing a calcined magnesium mesoporous heterogeneous ICaT-4 catalyst	PCT Int. Appl. (2012), WO 2012073251 A1 20120607	2012
	Process for converting fructose into 5-(hydroxymethyl)furfural using a mesoporous silica based catalyst impregnated with rare earth metals	PCT Int. Appl. (2012), WO 2012038969 A1 20120329	2012
	Catalyst composition (ICaT-2) comprising of rare earth metal	PCT Int. Appl. (2012), WO 2012029071 A2 20120308.	2012
	Process for the production of acrolein from glycerol and reusable catalyst having specific surface area	PCT Int. Appl. (2012), WO 2012035540 A1 20120322.	2012
	Catalyst composition comprising of transition metals supported on a acidified anatase titania	PCT Int. Appl. (2012), WO 2012035542 A1 20120322	2012
	Method for converting sucrose to 5-(hydroxymethyl)furfural using a lanthanum containing porous silica catalyst	PCT Int. Appl. (2012), WO 2012038967 A1 20120329	2012
	Process for production of furfural from xylose using a heterogeneous mesoporous silica catalyst comprising rare earth metals	PCT Int. Appl. (2012), WO 2012038968 A1 20120329	2012
	Environmentally benign heterogeneous catalyst for Fenton process	1120/MUM/2014	2014
	Bimetallic heterogeneous catalyst for use in eco-friendly solvents	2511/MUM/2014	2014
	Solar Conduction Dryer with controlled Radiation	PCT/IN2012/000843 740/MUM/2011	2011
	Multistage Drying Process	1301/MUM2013	2013

23. Areas of consultancy and income generated:

Sr. No.	Name of Faculty	Year	Name of Company	Amount
1	Bhagwat S S	2012-13	Glaxosmithline, GAIL, Reliance, L'oreal	30,62,333
		2013-14	GAIL, Reliance, L'oreal	17,40,000
		2014-15	Marico	
			Galaxy Surfactants	
			Balmer Lawrie	
			Hindustan Unilever Limited	
			Omni Impex Pvt. Ltd.	
			Gsk Limited	
2	Dalvi V H	2012-13	EcoLogic Technologies Limited	500000
		2013-14	RCF	250000
		2014-15	M/S The Coca Cola Company	120000
3	Gaikar V G	2011-12	Synthite Ltd(2012)(curcumin extraction),	300000
			IPCA Laboratories Ltd(2011-12)(Process Improvement),	450000
			(Beech Projects Ltd. (2011-12)(Soil evaluation and remediation	300000
		2013-14	Alcon Electronics Ltd.(2013-14)(Design of Electrolyte Plant)	300000
			Libox Goad Pvt Ltd(2013-14(Process improvement).,	300000
			Hindustan Unilever Ltd.(Tea Solubuilization)	300000
		2014-15	M/S Petrofac Saudi Arabia Ltd	

			Hindustan Unilever Limited	450000
4	Gogate P R			
		2013-14	M/s. Godavari Biorefineries ltd	3345000
			M/s. SRF ltd	
			M/S SRF Ltd	
			M/S Deepak Nitrite Ltd	
			M/S Multi Organics pvt Ltd	
			M/S Lupin Limited	
			M/S Godavari Biorefineries Ltd	
			M/S Hikal Ltd	
			M/S Deepak Nitrite Ltd	
			M/S Lupin Ltd	
			M/S Hul India Pvt Ltd	
			M/S Lupin Ltd	
			M/S GMM Pfaudler Ltd	
			M/S Hospira healthcare pvt ltd	
			M/S EcoSphere	
		2014-15	M/S EcoSphere	1005000
5	Jain R D	2013-14	M/s. Famy Care ltd	54000
		2014-15	Famy Care Limited	
			Piramal Healthcare Limited	
			Invictus Enterprises	
6	Mathpati C S	2012-2013	M/s. H J arochem pvt ltd M/s. United Phosphorus ltd	750000

			M/s. Tessol Thermal Energy Service Solutions (Phase I)	
		2013-2014	M/s. Tessol Thermal Energy Service Solutions (Phase I) M/s. United Phosphorus ltd	569500
7	Nemade P R	2012-2013	M/s. Shanpur industries pvt ltd M/s. Cotton Laboratories pvt ltd	234980
		2013-2014	GAIL india ltd M/s. Maharashtra state power generation co. ltd M/s. RCF ltd	1120000
8	Pandit A B	2012-13	M/s. Gargi Huttenes-Albertus pvt ltd	120000
		2013-14	M/s. Hindustan Unilever ltd M/s. Piramal Enterprises ltd	1728000
		2014-15	SRF ltd, New Delhi, Design of mixing equipments	
			Unilever ltd, Bangalore, India	
			Eastman Chemical Co. Ltd., USA.	
			Bharat Petroleum	
9	Patwardhan A V	2013-14	Loreal M/s. United Phosphorus ltd	78000
10	Patwardhan A W	2012-13	M/s. NOCIL ltd Loreal	1200000
		2013-14	M/s. NOCIL ltd Loreal	1278000
		2014-15	M/S Nocil Ltd	1278000
11	Rathod V K	2012-2013	M/s. Centaur pharmaceuticals pvt ltd M/s. Jubilunt Life Sciences ltd M/s. Amogh chemicals pvt ltd M/s. Jubilunt Life Sciences ltd	577996

		2013-14	Rallis india ltd Chemco Innovative chemie pvt ltd Vet pharma nitro products ltd Nutraplus india ltd	495000
		2014-15	M/S Clean Science and technology Pvt Ltd M/S Tube products of india M/S Neeraj polyfab pvt Ltd M/S Jupiter Dychem Pvt Ltd M/S Balaji Chemicals M/S Shri Tradco Deesan pvt Ltd M/S Bismillah Frozen food export M/S GMM pfoudler Ltd M/S Johnson matthey chemicals india pvt ltd M/S Aarti drugs ltd	1000000
12	Sontakke S M	2012-2013	GAIL(INDIA) Limited	275000
		2013-14	GAIL(INDIA) Limited	425000
	Pinjari D.V.	2014-15	Farmsons Agri Solutions Pvt. Ltd.	
			Swagat Polymers, Aurangabad.	
			Elkay Chemicals Pvt. Ltd. Pune.	
13	Thorat B N	2012-13	M/s. Orchid Chemicals & pharmaceuticals ltd M/s. Asian paints ltd M/s. Kinetic Engineering ltd	1650000
		2013-14	M/s. Envirosolutions ltd M/s. Aarti drugs ltd	3095000

			Shreeji Industries	
		2014-15	Reliance Industries Ltd. Gujarat Heavy Chemical Ltd. Harman Chemicals and Pharmaceuticals Camlin Chemicals	1000000
14	Vaidya P D	2012-2013	M/s. Carbon clean solutions pvt ltd M/s. GAIL india ltd M/s. Reliance industries ltd	1110000
		2013-2014	M/s. Reliance industries ltd M/s. SRF ltd	230000
		2014-15	GAIL (India) Ltd.	
			Indian Oil Corporation Ltd.	
			Reliance Industries Ltd.	
15	Yadav G D	2012-13	Krishna solvechem ltd ONGC	1600000
		2013-2014	M/s. Vinati organics ltd M/s.Mckinsey & company M/s.ONGC Energy centre	3000000
		2014-15	M/S Kemtech Solution Pvt ltd M/S ONGC Energy centre M/S Vinati organics ltd M/S ONGC Energy centre	3600000
	Jogwar S.S.	2014-15	Endress Hauser India	200000
			Sesa Sterlite India	

24. Faculty selected nationally / internationally to visit other laboratories / institutions industries in India and abroad:

Sr. No.	Faculty	Place of Visit	Duration	Purpose
1	Dr. P.R. Gogate	USA	March 1999 (One Week)	Presentation at AIChE Spring meeting, Houston, Texas USA
		France	December 2001 (One Week)	Presentations at USOUND 3 conference, Paris, France
		Spain	March 2003 (One Week)	Invited seminars at University of Zaragoza and CIEMAT, Madrid, Spain
		France	March-April 2003 (One Month)	Collaborative research project with INPT, Toulouse, France
		South Africa	April 2006 (Three Weeks)	Collaborative research project with University of Cape Town, South Africa
		Scotland UK	June 2006 (One Month)	Award of India-UK science networks scheme of DST and Royal Society UK
		Scotland UK	May- June 2007 (15 days)	Invited Specialist at COST D32 research conference on "Cavitation in Environmental Remediation"
		Scotland UK	May-July 2008 (Two months)	Award of India-UK science networks scheme (Phase II) of DST and Royal Society UK for visit to University of Abertay Dundee
		Hamburg, Germany	March 2009 (3 weeks)	Collaborative research project with TUHH, Germany
		Sopron, Hungary	March 2009 (1 week)	Collaborative research project with University of West Hungary, Hungary
		Bangkok, Thailand	June 2009 (1)	Invited presentation at Symposium "Sustainable

			Week)	Development: Emerging Issues and New Leaders” organized by ProSPER.Net-Scopus
		USA	January – May, 2010 (5 months)	Visiting Associate Professor at Purdue University, West Lafayette, USA
		UK	June 2011 (4 weeks)	Visit to Herriot Watt University under the INSA-Royal Society of Edinburgh scheme and presentation at EPIC-2011 organized by IChemE, UK
		Russia	September 2011 (1 week)	Part of delegation of Department of Science and Technology for participation in the International Youth Forum, Russia
		USA	May 2012 (2 weeks)	Industrial consultancy with M/s Ecosphere Tech., Florida, USA
		USA	November 2012 (1 week)	Invited lecture at AOT-18 conference in Jacksonville, Florida, USA
		Northern Ireland	December 2012 (1 week)	Invited lecture at DST-RSC workshop on Process Intensification
		Hungary	April-May 2013 (3 weeks)	Indo-Hungary Educational Exchange Program of UGC, India and HSB, Hungary
		USA	November 2013 (1 Week)	Invited lecture at AOT-19 conference in San Diego, USA and visit to Ecosphere Technologies Inc. Florida
		Belgium	November 2013 (1 Week)	Invited lecture at KU Leuven and Workshop on Industrial applications of ultrasound

				based reactors
		Japan	March 2014 (1 week)	79 th Annual meeting of SCEJ for receiving the award and presenting invited lecture
		Australia	October 2014 (1 week)	Invited lecture at CHEMECA, Perth, Australia
		Hungary, Spain	May-June 2015 (3 weeks)	Collaboration with University of West Hungary, Hungary and presenting two papers at EMChIE, Tarragona, Spain
		Malaysia	July 2015	Invited lecture at AOSS-2, Kuala Lumpur, Malaysia
2.	Prof. V.G. Gaikar	Lonere	November, 2012	Training Program, Research Methodology
		UK	November, 2012	Reading University, Unviersity of Edenburogh
		France	November, 2012	Paris Institute of Technology
		Pune	Dec 2012	Key note lecture Faculty Development Program at MIT Academy of Engineering
		Mumbai	December 2012	Invited Lecture, Chemference 2012, Departments of Chemical Engineering
		Lonere	30 th November 2012	Dr. Babasaheb Ambedkar Technolglcal University
		Pune,	2 nd December 2012	Maharashtra Academy Engineering College,
		Germany	February, 2013	Max Palnale Institute, Leipzis University
		Raipur,	April 5, 2013	Advances in Chemical engineering'

		UK	November, 2013	Bradford University
		Kalpakkam	March,2014	Indira Gandhi Center for Atomic Research
		New Delhi	March 2014	Guru Gobind Singh Indraprastha University
			October 2014	SVNIT
		Amravati	May 2014	Amravati University
			April 2015	Dr. Babasaheb Ambedkar Technological University
2	Prof. A.B. Pandit	(France)	14-18 May, 2000	Invited lecture entitled " <u>Hydrodynamic Cavitation: A viable alternative</u> " delivered at 7th meeting of the European Society of Sonochemistry (ESS 7)
		Banaras Hindu University, Varanasi	23 to 25 February, 2001	Invited plenary lecture entitled " <u>Advanced Oxidation Processes for Bio-Refractory Organic/Inorganic Pollutants</u> " presented at Recent Advances in Waste Management-1, organized jointly by I.T. (BHU) and NEERI, Nagpur, at Banaras Hindu University, Varanasi,
		Toulouse, France	May-2001	Lecture entitled " <u>Cavitation: Science and Technology</u> " given at, Chemical Engineering Department, University of Toulouse, Toulouse, France, May-2001
		South Africa	May 1996- August 1996	Visiting Professor, University of Cape Town

		South Africa	July 1996	Lecture entitled " <u>Hydrodynamic Cavitation and its usage</u> " at University of Natal, Durban,
		South Africa	June 1996	Lecture delivered on " <u>Image Analysis for on-line fermentation control</u> " at African Explosives and Chemical Industries Ltd. (AECI), Johannesburg
		Netherland	August 1996	Lecture delivered on " <u>Cavitation Chemistry</u> " at University of Groningen
		Australia	August – 2001	Invited to Chair a session on Computational Fluid Dynamics and Process modelling at G-L-S-5, International conference in Melbourne
		Scotland , UK	September, 2002	Member of the International advisory committee, Process Innovation and Process Intensification conference
		Bescancon, France	May 2003	Invited to chair a session at the 4 th International conference on Applications of Ultrasound in Physical and Chemical Processing

		Nagoya, Japan	December 2003	Invited lecture entitled, "Cavitation: A Technology for the future", presented at University, Nagoya
		Yamagata , Japan	December 2003	Invited lecture entitled, "Mixing in single/multiple impeller liquid and gas-liquid systems for miscible liquids with difference in physical properties" presented at Yamagata University
		Badajoz, Spain	April 2004	Member of the International advisory committee, Meeting of the European Sonochemists Society (ESS-9) held at Badajoz, Spain
		Morocco, North Africa	2004	Member of the International organising committee, International Symposium on Mixing in Industrial Processes
		California, USA	June 2004	Invited lecture entitled, "Cavitation induced physicochemical transformations- Hydrodynamic and Acoustic routes" presented at the Chemical engineering department, UCSB, California, USA

		Kajang, Malaysia	September 2004	Invited lecture entitled, “Use of radioisotopes for optimization and scale up” presented at the IAEA/RCA Meeting for Senior Managers on Benefits and Safety in Radioisotope Technique for Problem Solving in Petroleum/Chemical Industry
		University of Twente, Netherlands	February 2005	Invited lecture entitled, “Applications of Cavitation Phenomena” presented at the Chemical Engineering Department,
		University of Cape Town, South Africa	May 2005	Invited Lecture entitled “Chemical and Physical Transformations using Cavitation” presented at the Chemical Engineering Department
		University of Twente, Netherlands	September 2005	Invited lecture entitled “Experimental measurements and modeling of acoustic streaming phenomena” presented at Department of Physics

		Shanghai, China	November-December 2005	Invited lecture entitled “Experimental and CFD investigations in multiphase stirred reactors” presented at 1 st Sino-Japanese conference on Polymerization Reaction Engineering and Mixing Technology
		Vienna, Austria	July 2006	Invited Expert to address Consultants meeting at International Atomic Energy Agency (IAEA), on “ Use of Radio tracers in Multiphase Reactors”
		Singapore	August 2007	Invited lecture entitled “Cavitationally induced Physico-Chemical transformations” at Department of Chemical and Biomolecular Engineering, National University of Singapore,
		Kyoto, Japan	July 2008	Invited lecture entitled, “Matching Chemistry with Chemical Engineering for Optimum Design and Performance of Pharmaceutical Processing” at International meeting of

				Japanese Society of Process Chemistry
		Melbourne, Australia	November, 2008	Invited lecture entitled “Role & the action of cavitation in nanomaterials synthesis” at the International Workshop on Sonochemistry and Photocatalysis for Environmental Remediation
		Santa Barbara, USA	January 13-May 2013	Exchange Visitor, Department of Chemical Engineering, University of California,
3	Prof. B.N. Thorat	Lyon, France	August 24-27, 2014	Economic evaluation of Solar Cabinet Dryer System: a case study on onion drying,
		Dona Paula, Goa	6 th February 2011	The role of drying in the preparation of food and feed with special reference to lactic cultures
		Ahmadabad, Gujarat	13-15 March, 2013	Granulation and flow characteristics of solids. Keynote speaker at Powder and Bulk Solids India
		Bangkok, Thailand	IFET, 2012	Effect of various pretreatments and drying techniques on Thompson seedless grapes
		Graz, Austria	16-20 April, 2012	Filtration of mycelium suspension from

				fermentation broth
		Las Vegas, USA	25 Jun- 28 Jun 2012	Drying of Bitter Melon by Various Methods and its Evaluation
		Xiamen, China	11-15 November 2012	Process development for dehydrated flavoured Chicken shreds from spent hen meat
		Wiesbaden, Germany	22 October, 2013	Antisolvent crystallization and pressure filtration of Salicylic Acid: Influence of mixing conditions

25. Faculty serving in

- a) National committees b) International committees c) Editorial Boards

Professor G. D. Yadav

❖ International/National Committees

Chair (Founder), ACS India International Chemical Sciences Chapter

Individual award for excellence in volunteer service in recognition of his role and keen interest in the activities implemented in India and effort towards the formation of the ACS India Chapter

Chair, International Conference on Sustainable Chemistry and Engineering (SusChemE);

www.suscheme.in

Co-editor with A.Varma, Purdue University, USA, Festschrift of Industrial and Engineering Chemistry Research, ACS, December, 2015 in honour of Prof D. Ramkrishna, Purdue University.

Chemistry of Clean Energy Conversion, Storage, and Production, Nano Catalysis for Clean Energy and Environmentally Friendly Chemical Production (#81) organized by Ajay Dalai, Nicolas Abatzoglou, Burtron Davis, Azhar Uddin, Jansuz Kozinski, G.D. Yadav and Ahmad Tavasoli, PACIFICHEM 2015: The International Chemical Congress of Pacific Basin Societies, Honolulu, Hawaii, Dec. 15-20, 2015

Member, International Advisory Board (IAB), The State Key Laboratory for Catalysis, Dalian Institute of Chemical Physics, The Chinese Academy of Sciences, Dalian, China (<http://sklc.dicp.ac.cn/homepagee.htm>),

Honoured with a Festschrift (special issue) by Industrial and Engineering Chemistry Research, ACS (Vol. 53, Issue 49 (10 December 2014) for life time achievement: <http://pubs.acs.org/toc/iecred/current#GanapatiDYadavFestschriftEditorial>

Elected Chair, APCAT-7, 7th Asia Pacific Congress on Catalysis in Mumbai, January, 2017

Member, Governing Council, Asia Pacific Association of Catalysis Societies (14 countries)

(<http://www.apacs.dicp.ac.cn/apacs-committee.htm>)

Fellow, The Royal Society of Chemistry, UK

Fellow, TWAS-Academy of Sciences of the Developing World, Trieste, Italy

Fellow, Institution of Chemical Engineers, UK and Chartered Engineer

International Distinguished Faculty Positions and Chairs

Distinguished Plenary Speaker, 42nd Convention of the South African Chemical Institute, Durban, November 29-December 4, 2015

Distinguished Global Leader Seminar Speaker, Imperial College London (Leaders who have shaped the future of Chemical Engineering Profession, March 11, 2014

Adjunct Professor, University of Saskatchewan, Faculty of Engineering, Department of Chemical and Biological Engineering, Canada (June 2013- onwards)

Cross Canada Lecture Tour Award (2012-13), Canadian Catalysis Society & Canadian Catalysis Foundation

John van Geuns Lecturer, Van't Hoff Institute for Molecular Sciences, University of Amsterdam, The Netherlands

Park Reilly Lecturer, University of Waterloo, Waterloo, Canada

Adjunct Professor, RMIT University, Melbourne, Australia, May 2011-on

Member, International Advisory Committee, International Congress Sustainability Science and Engineering: Where Science and Engineering Meet the Needs of Society, (ICOSSE 2011), Environmental Protection Agency (EPA), National Science Foundation (NSF), NIST and American Institute of Chemical Engineers (AIChE), Tucson, Arizona, January 9-14, 2011

❖ Membership of Editorial Boards of Prestigious International Journals

Co-editor with A.Varma, Purdue University, USA, Festschrift of Industrial and Engineering Chemistry Research, ACS, December, 2015 in honour of Prof D. Ramkrishna, Purdue University.

Associate Editor, European Journal of Biotechnology and Bioscience

Member, Editorial Board, Green Chemistry (RSC, UK)

Associate Editor, Current Catalysis, Bentham Science Publishers

Guest Editor along with A.K. Dalai (U of Saskatchewan) and Nicolas Abtzoğlu (U of Sherbrooke) Catalysis Today on Catalytic Processes for Clean Energy, Waste

Minimization and Green Chemicals (Elsevier), Vol. 207 (May 30, 2013)
Member, Editorial Board, ACS Journal of Sustainable Chemistry and Engineering,
USA
Member, Editorial Board, Advanced Porous Materials
(<http://www.aspbs.com/apm.htm>)
Member, Editorial Board, The Scientific World Journal, Bentham Science Publishers
Member, Editorial Board, Current Catalysis, Bentham Science Publishers
Member, Editorial Board, Clean Technologies and Environmental Policy, Springer,
USA

National Journals and Magazines

Member, Editorial Board, Journal of Environmental Science and Engineering, CSIR-
NEERI
Member, Editorial Board, Indian Chemical Engineer, I.I.Ch.E.
Member, Board of Editors, Bulletin of Catalysis Society of India

Professor B. N. Thorat

International/National Committees

Member, State Environment Appraisal Committee (SEAC-I), Govt of Maharashtra,
Since January 2014
Member, Consent Committee, Maharashtra Pollution Control Board, 2006-2013
Chairman, International Workshop and Symposium on Industrial Drying, IWSID
Founder, "World Forum for Crystallization, Filtration and Drying", 2006
International Advisory/Scientific Member on following societies:
- Nordic Drying conference, 2003, 2005, 2009, 2011, 2013

- International Drying Symposium (IDS), 2002, 2004, 2006, 2008, 2010, 2012, 2014

Scientific Advisor on Controller General of Patents Designs and Trademarks,
Government of India.
Member, Consent Committee, Maharashtra Pollution Control Board (MPCB), Govt
of Maharashtra.
Committee member, XIth UGC Plan, New Delhi.
Committee member, Planning Commission "Working Group on XIIth five year plan
for higher education", Government of India.

Membership of Editorial Boards

Drying Technology, Taylor and Francis, USA

Professor S. S. Bhagwat

International/National Committees

Fellow, Maharashtra Academy of Sciences

Indian Institute of Chemical Engineers: Life member, member and past Chairman, Executive Council, Mumbai Regional Center
Indian Society for Surface Science and Technology: Life member, Hon. Secretary, Western India Chapter
Oil Technologist's Association of India, Life Member
Maharashtra Academy of Sciences, Fellow

Membership of Editorial Boards

Journal of Surface Science and Technology
Industrial and Engineering Chemistry Research, American Chemical Society

Professor V. G. Gaikar

International/National Committees

Fellow, Indian National Academy of Engineering, Fellow, Maharashtra Academy of Sciences
Member, TASK Force, Bioenergy Sciences, Department of Biotechnology, Ministry of Science and Technology, GoI.
Member, PAC-SERB , Department of Science and Technology
Member, TASK Force, Empowerment and Equity Opportunity for Excellence in Science, SERB, Ministry of Science and Technology, GoI.
Member, Empowered Board, RDCIS- SAIL Project for Waste Water management in Steel Industry (2010-)
Coordinator, ICT-DAE Centre for Chemical Engineering Education and Research(2013-)
Institute Coordinator, Technical Education Quality Improvement Program(MHRD, GoI),
Coordinator, TEQIP Innovation Networking Centre, Maharashtra State
Member, Planning and Monitoring Board, (ICT)(2012-)
Member, Advisory Committee, UGC-DRS program in Chemical Engineering, BITS, Pilani(2012-2014)
Member, Advisory Committee, UGC-CAS program in Chemical Engineering, BHU (2012-2014)
Life Member, Indian Institute of Chemical Engineers
Life Member, Indian Society for Surface Science and Technology
Fellow Member, Oil Technologists Association of India
Life Member, Asian and Mid-east Institute of Chemists
Member, Task Force(MoU), Department of Public Enterprise(2012-13), GOI
Co-ordinator, UGC National Resource Centre in Chemical Engineering, ICT(2009-2014)
Member, R&D Monitoring Committee for ONGC Institutes(2012-13)

Membership of Editorial Boards

Indian Journal of Chemical Technology, NISCAIR
Journal of Biomedical Research

Professor A. M. Lali

International/National Committees

1. Member, Scientific Advisory Committee, IIT, Indore
2. Member, Core Scientific Advisory Group on Biofuels, Ministry of New and Renewable Energy, Government of India, 2010-till date
3. Member, Task Force Committees on Biofuels; Algal Biotechnology; and Nutrition and Food Security, Department of Biotechnology, Ministry of Science & Technology, Government of India, 2011 onwards
4. Member, Maharashtra Academy of Sciences
5. Member, Apex Committee, Food and Nutritional Safety, DBT, India
6. Member, Task Force Committees on Biofuels, and Bioprocesses and Bio-products, DBT, India 2008-till date
7. Member of the Scientific Advisory Committee (SAC) on Industrial Biotechnology (Department of Biotechnology-Government of India), 2008-till date
8. Member of the Scientific Advisory Committee (SAC) on Biofuels and Bioenergy (Department of Biotechnology, Government of India) 2008-2009
9. Member, Research Council Committee, IMTECH, Chandigarh

Professor A. B. Pandit

International/National Committees

Member of Project Appraisal Committee (PAC) for the Department of Science and Technology scheme for the Engineering Committee
Member of Project Appraisal Committee (PAC) for the Department of Science and Technology scheme for the Food Processing and Technology Committee
Member of Selection committee for Shanti Swaroop Bhatnagar Award, Fellowship of INSA, IASc and INAE
Member of Selection Committee for DST Inspire Faculty Fellow
Member of Selection Committee for INSA-NASI-IAS Summer Research Fellowship program
UGC Expert Member for Technical Evaluation at various University and Institute

Membership of Editorial Boards

Associate Editor, Ultrasonics Sonochemistry Journal, Elsevier, Netherlands
Biochemical Engineering Journal, Elsevier, UK.
Canadian Journal of Chemical Engineering
Chemical Engineering & Processing
Industrial Engineering and Chemistry
Journal of Science Assam
Journal of Mustard Research Promotion Council

Dr. P. R. Gogate

International/National Committees

National Academy of Sciences, Allahabad
Chartered Engineer and Member, Institution of Chemical Engineers, UK
International Organizing committee and Invited Lecture/Session Chair, 19th
Advanced Oxidation Technologies Conference at California, USA

Membership of Editorial Boards

Advances in Environmental Research – An international journal
Ultrasonics Sonochemistry

Dr. A. W. Patwardhan

International/National Committees

Local Organizing Committee, Emerging Trends in Separation Science and Technology,
SESTEC 2014, BARC, Feb 25 – 28, 2014
Technical Committee, Emerging Trends in Separation Science and Technology,
SESTEC
2014, BARC, Feb 25 – 28, 2014
Expert Member for “Thermax-ASSET” awards Instituted by Association of Separation Scientists and Technologists (ASSET) for best Masters and Ph.D. thesis in the area of Separation Sciences and Technology
Member of Selection committee for selection of faculty (Ad-hoc basis) at Thadomal Sahani Engineering College, July 2015.

Dr. V K. Rathod

International/National Committees

Member, Board of Studies, Nagpur University

Dr. Ratnesh Jain

International/National Committees

Member, Young Scientist committee, Controlled Release Society, USA
Mentor, Mentor-Protégé Program, Member, Controlled Release Society, USA
Member, Lindau Alumni Association
Member, Controlled Release Society, Indian Chapter
Member, Controlled Release Society, USA
Member, Association of Biotechnology Led Enterprises (ABLE), India
Member, American College of Clinical Pharmacology, USA

Professor P. K. Ghosh

International/National Committees

Chairman, Water Technology Initiative, Department of Science & Technology, GoI
 Chairman, Techno-vision 2035 (Water), TIFAC, GoI
 Member, Green Chemistry Task Force, Office of PSA to GoI
 Chairman-cum-Member, Programme Evaluation Committee, GITA-CII Bilateral programmes
 Member, Board of Governors, Barefoot College
 Member, Asian Paints Technology Council
 Vice President, Materials Research Society of India (MRSI)

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Inward Date	Duration	Month	Activity	Faculty Name	Objective	Deliverables	Institute
17/8/2012	15-21 October, 2012	October	"Management Building Capacity"	Dr. V.H. Dalvi	"Management Building Capacity"	Time management skills	Prin. L. N. Welingkar Institute Of Management, Development & research
17/8/2012	15-21 October, 2012	October	"Management Building Capacity"	Dr. P. R. Nemade	"Management Building Capacity"	Time management skills	Prin. L. N. Welingkar Institute Of Management, Development & research
17/8/2012	7-15 December, 2012	December	Subject Knowledge Enhancement	Dr. C.S. Mathapati	Learn To Use Dynamic Simulation Software/ Process Simulation Using Aspen.	Undergraduate Education	Prof. Sanjay Mahajani, Department of Chemical Engineering, IIT-Bombay, Mumbai
17/8/2012	7-15 December, 2012	December	Subject Knowledge Enhancement	Dr. V.H. Dalavi	Learn to use Quantum	Ability to use Quantum Mechanical	Dr. Raj Ganesh Pala,

			nt		Mechanical Calculation Software	Calculation Software	Department of Chemical Engineering , IIT, Kanpur)
17/8/2012	October- December 2012	October	Managem ent capacity enhanceme nt program	Dr.P. D. Vaidya	Enhanceme nt of teaching and research skills by working under the supervision of Professor V. A. Juvekar In IIT Bombay Subject : Advanced Mass Transfer	Improved teaching skills,research collaboration and publications.	IIT Bombay
25/9/2012	15-21 October, 2012	October	"Managem ent Building Capacity"	Dr. P. D. Vaidya	"Managem ent Building Capacity"		Prin. L. N. Welingkar Institute Of Managemen t, Developme nt & research
22/1/2013	24 Feb 2013 1 - 4 Feb 2013	January	Managem ent Training	Dr. P.R. Gogate	To attend Managem ent Training at IIT Bombay		IIT Bombay, Powai
22/1/2013	24 Feb 2013 1 - 4 Feb 2013	January	Managem ent Training	Dr. V. H. Dalvi	To attend Managem ent Training at IIT Bombay		IIT Bombay, Powai
22/1/2013	24 Feb 2013 1 - 4 Feb 2013	January	Managem ent Training	Dr. P. D. Vaidya	To attend Managem ent Training at IIT Bombay		IIT Bombay, Powai
22/1/2013	24 Feb 2013 1 - 4 Feb	January	Managem ent Training	Dr. P. R. Nemade	To attend Managem ent Training		IIT Bombay, Powai

	2013				at IIT Bombay		
22/1/2013	24 Feb 2013 1 - 4 Feb 2013	January	Management Training	Dr. Ratnesh Jain	To attend Management Training at IIT Bombay		IIT Bombay, Powai
21/2/2013	12-23 March 2013	March	Faculty Development	Dr. P. R. Nemadent	Attend FDP on entrepreneurship and look to implement knowledge gained in the workshop to stimulate entrepreneurial spirit in the students	White paper on ideas gained in the workshop	NITTTR, Bhopal, M.P.
3/7/2013	8-12 July 2013	July	Faculty Enhancement Activities	Dr. V. H. Dalvi	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.		VJTI, Mumbai.
3/7/2013	8-12 July 2013	July	Faculty Enhancement Activities	Dr. C. S. Mathapati	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.		VJTI, Mumbai.
4/7/2013	8 July, 2013	July	Conference	Dr. Neetu Jha	Paper Presentation In a Conference on Advanced Nanomaterials &		Sathyabama University, Jeppiaar Nagar, Rajiv Gandhi Road, Chennai -

					Engineering Technologies		600119, Tamil Nadu, India
5/7/2013	6 July, 2013	June	Enhancement for UG & research-Poster Presentation	Dr. P. R. Nemade	Poster Presentation arrangements for display of UG Research		ICT, Mumbai
5/16/2013	3-7 June 2013	June	Faculty Training(8th Summer School)	Dr. P. R. Nemade & Dr. S. M. Sontakke	Up to date knowledge in the field of refining, petrochemical and production technologies		Petroleum Refining & Petrochemicals, IIPM
13/6/2013	20 June, 2013	June	Faculty Development	Dr. D. V. Pinjari	Attending UGC Meeting	Faculty Development	UGC Faculty Recharge Programme Old CRS Building, J.N.U. Campus, New Delhi
6/24/2013	8-12 July 2013	July	Faculty Enhancement Activities	Dr. P. D. Vaidya	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.		VJTI, Mumbai.
30/10/2013	11-15th Nov. 2013	October	Faculty Development Programme	Dr. Prakash D. Vaidya	Participation in Faculty Development Program on Catalysis, Chemistry Research Centre,	Catalysis Industrial Training Certification Program	Catalysis, Chemistry Research Centre, BIT & PPISR, Bangalore

					BIT & PPISR, Bangalore		
1/17/2014	20-24/1/2014	January	Engineering Pedagogical Training Programme	Dr. Neetu Jha	Engineering Pedagogical Training Programme		Shruth & Smith Foundation
2/11/2014	21-22 Feb 2014	February	Faculty Development Program on Virtual Labs Organised by COEP	Dr. Sujit S. Jogwar	To learn about the virtual Lab initiative undertaken at COEP and familiarize with the remote Triggered Advanced Process Control Lab	Use of virtual lab for own research, potential use of remote advanced process control lab for chemical engineering students	Department of Instrumentation & Control
4/3/2014	11-12, April 2014	April	Faculty Development	Dr. C. S. Mathpati	Present proposal for funding to DAE		TPDM Mangalore University, Karnataka
4/3/2014	11-12, April 2014	April	Faculty Development	Dr. P. R. Nemade	Present proposal for funding to DAE		TPDM Mangalore University, Karnataka
6/6/2014	23-27 June, 2014	June	Management Capacity Enhancement	Dr. Vishwanath H. Dalvi	Gain insights into teaching of physics and related fields. Invaluable for teaching and staying current as a researcher.	Plan for improving courses in physics and allied subjects e.g: Statistical Mechanics and Computer Simulation	IIT Kanpur
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. Vishwanath Dalvi	To introduce teaching-learning modes to young	Better classroom management, lecture delivery & assessment	ICT

					faculty of ICT		
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. Ashwin Patwardhan	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. Vijay Kumar	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. Prakash Vaidya	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. Sachin Mathpati	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. V. K. Rathod	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT
6/10/2014	28-29 March 2014	February	Pedagogy Training	Dr. P. R. Nemade	To introduce teaching-learning modes to young faculty of ICT	Better classroom management, lecture delivery & assessment	ICT

7/3/2014	03-08 July 2014	July	Capacity Development of Faculty	Dr. Neetu Jha	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques to cope up with daily stress.	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT
7/3/2014	03-08 July 2014	July	Capacity Development of Faculty	Dr. Ratnesh Jain	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques to cope up with daily stress.	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT
7/3/2014	03-08 July 2014	July	Capacity Development of Faculty	Dr. V. H. Dalvi	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques to cope up with daily	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT

					stress.		
7/3/2014	03-08 July 2014	July	Capacity Developme nt of Faculty	Dr. Sadhana Sathaye	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques to cope up with daily stress.	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT
7/3/2014	03-08 July 2014	July	Capacity Developme nt of Faculty	Dr. Parag Gogate	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques to cope up with daily stress.	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT
7/3/2014	03-08 July 2014	July	Capacity Developme nt of Faculty	Dr. P. R. Nemade	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner & impart to them the techniques	Honing mentoring skills of ICT faculty, Stress management at ICT	ICT

					to cope up with daily stress.		
12/5/2014	15-20,December 2014	December	Management capacity enhancement program	Dr. Prakash Vaidya	Training on management Capacity Enhancement for Administrators		Self and Institute
12/5/2014	15-20,December 2014	December	Management capacity enhancement program	Dr. P. R. Nemade	Training on management Capacity Enhancement for Administrators		Self and Institute
#####	05-09 January, 2015	January	Pedagogy Training	Dr. Prakash D. Vaidya	Pedagogy Training	Pedagogy for effective use of ICT in Engineering Education	IIT Bombay
1/1/2015	5 days	Jan	Pedagogy Training	Dr. P. R. Nemade	To attend workshop on teaching pedagogy at IIT Bombay	NA	IIT Bombay
1/1/2015	5th jan - 9th jan	Jan	Pedagogy Training	Dr.S.M.S ontakke	To attend workshop on teaching pedagogy at ICT in Engg Education	Training program on teaching skills	IIT Bombay
3/30/2015	12-16Feb 2015	February	Subject Knowledge Enhancement	Dr. V.H. Dalvi	To teach applied maths & hence computer programming better	Teaching Applied Mathematics to post graduate students in engineering	IITBombay
6/5/2015	13-15July2015	July	Management capacity enhancement program	Prof. V.G.Gaikar	Patent drafting & filing & IP Management		Self and Institute
6/2/2015	17-21 August 2015	August	Management capacity enhancement	Prof. V. G. Gaikar	To get trained in financial		To get trained in financial

			nt program		managemen nt		managemen t
6/25/2015	26-28 June 2015	June	Workshop	Dr. V. H. Dalvi	Workshop on Advanced data Analytics in management (ADAM-2015) at IIT-Delhi	Insight into data analytics	Greater sophistication in ICT admin activities
6/6/2015	13-15 July 2015	July	Management capacity enhancement program	Prof. V.G. Gaikar	Patent drafting & filing & IP Management		Self and Institute
6/2/2015	17-21 August 2015	August	Management capacity enhancement program	Prof. V. G. Gaikar	To get trained in financial management		To get trained in financial management
5/7/2015	13-15 May 2015	May	FDP (workshop)	Dr. Sujit Jogwar	Learning best practices to teach Applied Mathematics to Engineering students		Faculty members of engg. Coll. with post graduate courses
12/29/2015	22nd Feb. 2016 to 27th Feb. 2016	February	Workshop	Prof. V. G. Gaikar	To network with Indian & German Institutes in the workshop at Guhawati - IIT	To Form Collaborative projects in N-E States	
12/29/2015	11th and 12th Jan. 2016	January	Conference	Prof. V. G. Gaikar	To attend " International Conference in Engineering Education " at COEP ,	To learn new Pedagogy	

					Pune		
12/29/2015	8th and 9th Jan. 2016	January	Leadership Program RUSA Meeting at New Delhi	Prof. V. G. Gaikar	To undergo Leadership Development Program under RUSA	Learning Leadership Skill	
1/1/2016	13th Feb. 2016 to 16th Feb. 2016	February	Symposium	Dr. S. M. Sontakke	To attend Symposium " ChemE@II SC Symposium (CIS) 2016" at Dept. of Chemical Engineering at Indian Institute of science, Bangalore		

27. Student projects

- Percentage of students who have done in-house projects including inter-departmental projects : **(100%)**
- Percentage of students doing projects in collaboration with other universities industry / institute: **(15-20 % students at PG level in research) and (100% for UG for in-plant training)**

28. Awards / recognitions received at the national and international level by

- Faculty
- Doctoral / post doctoral fellows
- Students

Sr. No.	Faculty	Awards and Honors	Year
1	Bhagwat SS	IChE NOCIL Award	2012
		Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem. Engg.)	2013
		First prize in Bry-Air asia awards for the HVAC & R	2013
		CSMCRI-Chemcon Distinguished Speaker Award Chemcon	2014
2	Yadav GD	Padma shri Award	2016
		Adinath Life and Plant Sciences Foundation Award	2015

		Khosla National Award (IIT-Roorkee)	2012
		Karveer Bhushan, Rotary Club of Karveer Kolhapur for contributions to profession and society	2015
		Life Time Achievement Award and Gold Medal, Indian Chemical Council	2014
		IPCL Award for Best M Tech Thesis (Student : Abhijit Talpade, Guide:Prof G.D. Yadav), Indian Society for Technical Education, Dec. 2014	2014
		D. M. Trivedi Lifetime Achievement Award for Contribution to Indian Chemical Industry (Education & Research) for the year 2012- Indian Chemical Council	2013
		Dr B.P. Godrej Life Time Achievement Award by Indian Institute of Chemical Engineers	2013
		IGCW Award for contributions to Green Chemistry in India	2011
		Dr C.V. Raman Award for Excellence in Teaching and Research in Engineering and Technology, IES Bhopal, Dec. 13, 2011	2011
3	Gaikar VG	IChE-D.O.S.T. Dr. S.K. Sharma Medal and CHEMCON Distinguished Speaker Award	2013
4	Pandit AB	J.C.Bose, fellow, Govt. of India	2015
		Prof. R.A. Rajadhyaksha Best Teacher Award of UDCT,	2011
		Best Reviewer Award, Elsevier UK	2011
		IES C.V. Raman Award for Best Engineering Teacher	2010
		INSA, Best Teacher Award	2012
		Wipro Earthian Award	2013
		Best Teacher Award (Final Year B. Tech.)	2012
		Vishvakarma medal of Indian National Science Academy	2015
		Fellow, The world Academy of Sciences	2015
5	Lali AM	UAA-ICT Distinguished Alumnus Awards in Academics	2015
		Vasvik Award in Biological Sciences & Technology by Vividhlaxi Audyogik Samshodhan Vikas Kendra, Mumbai,	2013
6	Joshi JB	Padma Bhusan award	2014
7	Thorat BN	The VASVIK Award in the field of Chemical Sciences and Technology	2012
		Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) for Innovation, Solar Grain Dryer	2013
		Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) for Innovation, Cassavatech (Drying of cassava)	2013
		Dell Social Innovation Award of USD 60,000 (Sixty thousand US Dollar) for developing “Solar Conduction Dryer”,	2013
		Award for Excellence in Drying and Promotion of the Nordic Drying Conferences in Asia at 5 th Nordic Drying Conference, Helsinki, Finland,	2011

		Adinath Life and Plant Sciences Foundation Award	2015
		IChE NOCIL Award	2015
8	Rathod VK	Young Scientist Maharashtra Academy of Sciences	2013
		Fellow of Maharashtra Academy of Sciences (FMSc)	2015
9	Patwardhan AW	R. A. Rajadhyaksha Best Teacher Award on the basis of evaluation by students at ICT:	Second Year B. Chem. Engg: 2011 – 2012, 2013 – 2014 Second Year B. Tech.: 2009 – 2010
		Fellow, Maharashtra Academy of Sciences	2012
		Herdillia Award of I. I. Ch. E. for excellence in Basic Research	2013
10	Dalvi VH	Best Teacher Award	2011
11	Gogate PR	Anil Kumar Bose Medal of the Indian National Science Academy (INSA),	2011
		Invited lecture and Session Chair at Advanced Oxidation Technologies Conference (18) at Jacksonville, Florida, USA	2012
		Young Associate of Indian National Academy of Engineering	2012
		Chartered Engineer and Member, Institution of Chemical Engineers, UK	2013
		Member, International Organizing committee and Invited Lecture/Session Chair, 19th Advanced Oxidation Technologies Conference at California, USA,	2013
		Member, Editorial Board, Advances in Environmental Research – An international journal,	2013-2015
		The SCEJ Award for Outstanding Asian Researcher and Engineer given by The Society of Chemical Engineers, Japan,	2013
		Hindustan Lever Biennial Award for the Most Outstanding Chemical Engineer of the Year Under The Age Of 45 Years of Indian Institute of Chemical Engineers,	2013
		Fellow, Maharashtra Academy of Sciences,	2014
12	Jain RD	N. R. Kamath Book Award for book entitled Nanoparticulate Drug Delivery: Perspectives on the Transition from Laboratory to Market', (Woodhead Publishing Series in Biomedicine), Woodhead Publishing (Elsevier),	2014
		DAE Young Scientist Award	2012

		Young Associateship from Maharashtra Academy of Sciences for the contribution and Engineering and Technology	2012
		Ramalinga swami Fellowship, Department of Biotechnology, Govt. of India, March,	2012
		INSPIRE Faculty Fellowship, Department of Sciences and Technology and Indian National Sciences Academy, Govt. of India, June,	2012
		Ramanujn Fellowship, Department of Sciences and Technology, Govt. of India, August,	2011
		Alexander von Humboldt Postdoctoral Research Fellowship by Alexander von Humboldt Foundation, Germany	2011
13	Pinjari DV	Awarded Fulbright OLF Award 2015 by OIE and CIES (State Departments, US Federal Government, Washington, USA)	2015
		Awarded Young Engineers Award	2014-2015
		Awarded Wipro Earthian Award by Wipro foundation, Bangalore (India)	2013
		Young Associate, Maharashtra Academy of Science	2013
		Awarded M. P. Chary Memorial Award	2013
		Swiss Government Excellence Scholarship program.	2013-2014
		Awarded Dr. K. H. Gharda Best PhD Thesis Award	2013.
		Awarded Ambuja Cement Best Thesis Award	2013
14	Sontakke SM	Awarded DST Inspire Fellowship. DST, Govt. of India.	2013
15	Vaidya PD	Best Teacher Award at Institute of Chemical Technology	2014
16	Jogwar SS	Smt. Padma Kelkar Endowment Award for Encouragement to New Chemical Engineering Faculty, 2014.	2014
		DST INSPIRE Faculty Fellowship, 2013-2018.	2013-2018
		Doctoral Dissertation Fellowship, University of Minnesota, 2010-11.	2010-2011

29. Seminars/ Conferences/Workshops organized and the source of funding (national international) with details of outstanding participants, if any.

Sr. No.	Name of Faculty	11-12 Seminar/conference/workshop	12-13 Seminar/conference/workshop	13-14 Seminar/conference/workshop	14-15 Seminar/conference/workshop
1	Bhagwat S S	1/1/2	2	4/7/0	2/2/3
2	Gaikar V G	2/6/8		1/14/0	4/3/5

3	Gogate P R	0	5/0/2	3/4/0	2/0/1
4	Jain R D	0		2/0/0	11/12/15
5	Joshi J B	0		1	
6	Lali A M	2/1/1		2/4/1	
7	Marathe K V	0/0/2		2/0/0	
8	Mathpati C S	0	3/0/0	0/3/1	0/2/0
9	Pandit A B	1		6/1/0	0/1/1
10	Patwardhan A V	0		1/0/0	1/0/3
11	Patwardhan A W	0/1/1	2/0/0	4/1/4	6/7/1
12	Rathod V K	0		0/1/0	
13	Sontakke S M	0/0/3		0/0/2	
14	Thorat B N	6/7/2	6/3/3	8/1/1	4/4/3
15	Vaidya P D	0/6/0		1/0/1	
16	Yadav G D	5/4/9			
17	Pinjari D V			3/1/0	6/0/0
18	Jogwar S S			2/0/1	2/1/0
19	Nemade P.R.				1/1/5
20	Sontakke Jyoti				0/0/2

30. Code of ethics for research followed by the departments

- (a) Plagiarism is avoided using web based tools
- (b) Honesty, team work is promoted
- (c) Avoid results manipulation

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage Please update from exam/ Dr. Gogate	
		Male	Female	Male	Female
B Chem. Engg.					
2011-12	584	60	17	78.3%	76.5%
2012-13	745	60	18	100%	100%
2013-14	Admission through DTE	61	17	98.3%	100%
2014-15	Admission through DTE	56	24	98.2%	100%
M. Chem. Engg.					
2011-12	94	26	4	100%	100%
2012-13	180	21	4	100%	100%
2013-14	168	28	5	100%	100%
2014-15	290	21	9	100%	100%

32. Diversity of students:

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
B.Chem Engg	0	70%	30%	0
M. Chem. Engg	2 to 5%	55%	45%	0

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Sr. No.	Name	Degree	Year of Passing	Present Position
1	Mr. Dhananjay Mali	B.Chem.Engg.	2003	IRS-2012
2	Mr. Arvind Ghuge	M.Tech.(Food)	2005	IRS-2013
3	Mr. Amit Shendarkar	B.Tech. and M.Tech.	2002 and 2005	Assistant Commissioner, Sales Tax -2012
4	Mr. Amit Puri	B.Tech.	2006	Tahsildar-2013
5	Mr. Navneet Singh	B.Tech.	2004	IPS-2010
6	Mr. Navin Bhat	B.Tech.	2005	IPS-2011
7	Mr. Manoj Chaudhari	B.Tech.	2006	Central Excise Inspector – 2012

8	Mr. Kiran Kale	B.Tech.	2005	Assistant Commissioner, Sales Tax -2013
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All the M Chem Engg students are GATE qualified.

No. of undergraduates students who opted to give and qualified GATE examination:

Sr. No.	Year	No. of Students
1	2011-12	3
2	2012-13	5
3	2013-14	3
4	2014-15	4

34. Student progression

Student progression	Percentage against enrolled
UG to PG	50 %
PG to M.Phil.	NA
PG to Ph.D.	70 %
Ph.D. to Post-Doctoral	10 %
Employed	
Campus selection	95 %
Other than campus recruitment	3%
Entrepreneurs	2%

35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	74%
from other universities within the State	21%
from universities from other States	0.5%
from universities outside the country	NIL

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: 2

37. Present details of departmental infrastructural facilities with regard to

- a) Library : Institute level library with books and journal subscriptions
- b) Internet facilities for staff and students : Reliance NKN VSNL (15 MBPS, 1 GBPS, 2 MBPS (1:1))
- c) Total number of class rooms : 4
- d) Class rooms with ICT facility : 4
- e) Students' laboratories : 2 (UG level)
- f) Research laboratories

Laboratory number	Name of the Laboratory	Area in sq.m.	Working capacity (number of students)	Usage (UG/PG/Research)
A117	UG Main Lab	346.89	250	UG
A122	UG Heat Lab	61.92	250	UG
	LDA Lab	81.79	13	PG
A107	Chem. Engg. Com. Vision Lab.	51.66	20	PG
A115	HP Lab	91.03	38	PG
	Autoclave Lab		15	PG
A005(CEB-2)	Basement Lab	58.31	14	PG
CEB1	Basement/Instrument Lab.	82.50	4	
CEB8	Basement Lab I	61.29	6	
CEB7	Basement Lab II	37.44	4	
CEB4	Basement Lab III	50.05	6	
CEB3	Basement Lab	35.02	12	
	Advanced Centre	248.14	48	
CEB5	Basement Lab I	35.26	4	
CEB6	Lab II	37.81	8	
C-106	Lab	50.96	4	
	Oils Lab 1 st floor	122.91	5	
	Oils Lab 2nd floor	33.34	21	
	Lalvani BPT Lab	159.95	3	
	Lalvani Centre	232	44	

Common Instrumentation facility

Instrumentation Lab		
A 125	Analytical Lab	75.58
	Steam Lab	56.55
	High Pressure	90.40
	Yadav Sir's Lab I	65.47
	Yadav Sir's Lab II	76.92

- ❖ All research students (516) spend 10% of their time in common instrumentation facility.

38. List of doctoral, post-doctoral students and Research Associates

- a) from the host institution/university
- b) from other institutions/universities

Sr.No.	Name of the student	Degree	Supervisor
1	Vikas Patil	PDF	GDY
2	Jyoti Sontakke	PDF	GDY
4	Vikas Patil	PDF	GDY
5	Sutar Parag	PDF	PDV
7	Juilee Palkar	Ph. D (Sci)	AML
8	Archana Krishnan	Ph. D (Sci.)	AML
9	Manish Yadav	Ph. D (Sci.)	AML
10	Mallikarjun Patil	Ph. D (Sci.)	AML
11	Rajeshwar Valte	Ph. D (Tech)	AML
12	Sachinkumar Birhade	Ph. D (Tech)	AML
13	Abha Sahu	Ph. D. (Sci.)	ABP
14	Bhagwat Patil	Ph. D. (Sci.)	ABP
15	Chaitali Vira	Ph. D. (Sci.)	AML
16	Jayant Rathod	Ph. D. (Sci.)	AML
17	Juliet Victoria	Ph. D. (Sci.)	AML
18	Lucy Nainan	Ph. D. (Sci.)	AML
19	Mrunal Warke	Ph. D. (Sci.)	AML
20	Padmini Iyer	Ph. D. (Sci.)	AML
21	Prathamesh Wadekar	Ph. D. (Sci.)	AML
22	Parikshit Sawdekar	Ph. D. (Sci.)	AML

23	RajeshVadgama	Ph. D. (Sci.)	AML
24	Rutuja Vaze	Ph. D. (Sci.)	AML
25	Ritu Maurya	Ph. D. (Sci.)	AML
26	Richa Tiwari	Ph. D. (Sci.)	AML
27	Swanand Gangal	Ph. D. (Sci.)	AML
28	Sneha Sawant	Ph. D. (Sci.)	AML
29	Sonal Sawant	Ph. D. (Sci.)	AML
30	Smita Patil	Ph. D. (Sci.)	AML
31	Sujata Gaikwad	Ph. D. (Sci.)	AML
32	Shalini Deb	Ph. D. (Sci.)	AML
33	Sachdeo Daware	Ph. D. (Sci.)	AML
34	Vijita V. Pillai	Ph. D. (Sci.)	AML
35	Bhupal Aodekar	Ph. D. (Sci.)	AML
36	Monali Kavadia	Ph. D. (Sci.)	AML
37	Suveera Bellary	Ph. D. (Sci.)	AML
38	Anup Sonawane	Ph. D. (Sci.)	AML
39	Poornima Rao	Ph. D. (Sci.)	AML
40	Vikram Chaudhary	Ph. D. (Sci.)	AML
41	Hiral Shukla	Ph. D. (Sci.)	AML
42	Hitesh Pawar	Ph. D. (Sci.)	AML
43	Daware Sachdeo	Ph. D. (Sci.)	AML
44	Nitesh Kumar Sigh	Ph. D. (Sci.)	AML
45	Dhopte Kiran	Ph. D. (Sci.)	AWP
46	Yogesh Choughule	Ph. D. (Sci.)	AVP
47	Machhindra Bhalerao	Ph. D. (Sci.)	AVP
48	Shweta Kumbhaj	Ph. D. (Sci.)	AVP
49	Nagauvekar Nupur	Ph. D. (Sci.)	BNT
50	Jeetendra Salunke	Ph. D. (Sci.)	GDY
51	Bapu Gawade	Ph. D. (Sci.)	GDY
52	Kalpesh Bhadra	Ph. D. (Sci.)	GDY
53	Dhiraj Katole	Ph. D. (Sci.)	GDY
54	Gunjan Deshmukh	Ph. D. (Sci.)	GDY
55	Shivaji Bhanvase	Ph. D. (Sci.)	GDY
56	Akhil Nakhate	Ph. D. (Sci.)	GDY
57	Jayaram Molleti	Ph. D. (Sci.)	GDY
58	Abhilash Sukhdeve	Ph. D. (Sci.)	GDY
59	Kalidas Rasal	Ph. D. (Sci.)	GDY

60	Anil Gawade	Ph. D. (Sci.)	GDY
61	Pooja Tambe	Ph. D. (Sci.)	GDY
62	Mohanapriya K.	Ph. D. (Sci.)	NJ
63	Yadav Abhimanyu	Ph. D. (Sci.)	PDV
64	Jadhav Suhas	Ph. D. (Sci.)	PDV
65	Patil Shailesh	Ph. D. (Sci.)	PDV
66	Jadhav Suhas	Ph. D. (Sci.)	PDV
67	Amrutlal Prajapat	Ph. D. (Sci.)	PRG
68	Shobha Desai	Ph. D. (Sci.)	SSB
69	Manisha Ahire	Ph. D. (Sci.)	SSB
70	Vrushali Dengle	Ph. D. (Sci.)	SSB
71	Anik Goswami	Ph. D. (Sci.)	SSB
72	Patil Rahul	Ph. D. (Sci.)	SSB
73	Deepak Chabukswar	Ph. D. (Sci.)	VGG
74	Kalpesh Khot	Ph. D. (Sci.)	VGG
75	Mahesh Kadam	Ph. D. (Sci.)	VGG
76	Mufeedah Muringakandy	Ph. D. (Sci.)	VGG
77	Suwarna Hiware	Ph. D. (Sci.)	VGG
78	Tasneem dahir	Ph. D. (Sci.)	VGG
79	Yogeshwar Dubhashe	Ph. D. (Sci.)	VGG
80	Chandrakanth G.	Ph. D. (Sci.)	VKR
81	Sagar Gadalkar	Ph. D. (Sci.)	VKR
82	Sneha Bansode	Ph. D. (Sci.)	VKR
83	Govind Waghmare	Ph. D. (Sci.)	VKR
84	Sarita Gawas	Ph. D. (Sci.)	VKR
85	Anilkumar Gupt	Ph. D. (Sci.)	VKR
86	Shinde Yogesh	Ph. D. (Tech.)	ABP
87	Rekha B. N.	Ph. D. (Tech.)	ABP
88	Manchalwar Shirish	Ph. D. (Tech.)	ABP
89	Shingade Sunil	Ph. D. (Tech.)	ABP
90	Atul Bari	Ph. D. (Tech.)	ABP
91	Mandar Badve	Ph. D. (Tech.)	ABP
92	Karuna Nagula	Ph. D. (Tech.)	ABP
93	Shankar Kausely	Ph. D. (Tech.)	ABP
94	Sachin Jadhao	Ph. D. (Tech.)	ABP
95	Suruchi Rao	Ph. D. (Tech.)	AML
96	Sushitha Nair	Ph. D. (Tech.)	AML

97	Narnaware Sharad	Ph. D. (Tech.)	AML
98	Abhijit Rathi	Ph. D. (Tech.)	AML
99	Anand Gupta	Ph. D. (Tech.)	AML
100	Arjun Singh Bajwa	Ph. D. (Tech.)	AML
101	Febin Pappachan	Ph. D. (Tech.)	AML
102	Gaurangi Deore	Ph. D. (Tech.)	AML
103	Gautam Degwekar	Ph. D. (Tech.)	AML
104	Lalit Khot	Ph. D. (Tech.)	AML
105	Mandrita Chatterjee	Ph. D. (Tech.)	AML
106	Mukesh Pednekar	Ph. D. (Tech.)	AML
107	Manoj Chavan	Ph. D. (Tech.)	AML
108	Prashant Kumar	Ph. D. (Tech.)	AML
109	Sandip Kadam	Ph. D. (Tech.)	AML
110	Sunil Sunkara	Ph. D. (Tech.)	AML
111	Sharad Narnaware	Ph. D. (Tech.)	AML
112	Vinod Amritkar	Ph. D. (Tech.)	AML
113	Agrawal Snehal	Ph. D. (Tech.)	AML
114	Yogesh Mirage	Ph. D. (Tech.)	AVP
115	Prasad V. Vernekar	Ph. D. (Tech.)	AWP
116	Ajit Kulkarni	Ph. D. (Tech.)	AWP
117	Ajay D. Sharma	Ph. D. (Tech.)	AWP
118	Sharma Anita	Ph. D. (Tech.)	AWP
119	Rajput shaileshrasingh	Ph. D. (Tech.)	BNT
120	Rahul Aware	Ph. D. (Tech.)	BNT
121	Sushil Deulgaonkar	Ph. D. (Tech.)	BNT
122	Vaibhav Tidke	Ph. D. (Tech.)	BNT
123	Sawant Shekhar	Ph. D. (Tech.)	CSM
124	Hrushikesh Khadamkar	Ph. D. (Tech.)	CSM
125	Sona C.S.	Ph. D. (Tech.)	CSM
126	Pakhare Achynt	Ph. D. (Tech.)	CSM
127	Gajbhiye Bhavesh	Ph. D. (Tech.)	CSM
128	Kulkarni Mandar	Ph. D. (Tech.)	GDY
129	Prasad Mandade	Ph. D. (Tech.)	GDY
130	Satish Kabra	Ph. D. (Tech.)	GDY
131	Manish Tiwari	Ph. D. (Tech.)	GDY
132	Saurabh Patankar	Ph. D. (Tech.)	GDY
133	Manoj Kamble	Ph. D. (Tech.)	GDY

134	Pravin Patil	Ph. D. (Tech.)	GDY
135	Kalpesh Bhavsar	Ph. D. (Tech.)	GDY
136	Shivani Vedula	Ph. D. (Tech.)	GDY
137	Deepali Magadam	Ph. D. (Tech.)	GDY
138	Karan Chavan	Ph. D. (Tech.)	KVM
139	Amar Vibhandik	Ph. D. (Tech.)	KVM
140	Karmore Ashvin	Ph. D. (Tech.)	PDV
141	Dewodlkar Karan	Ph. D. (Tech.)	PDV
142	Barge Aditi	Ph. D. (Tech.)	PDV
143	Karmore Ashvin	Ph. D. (Tech.)	PDV
144	Baviskar Chetan	Ph. D. (Tech.)	PDV
145	Nimkarde Mahesh	Ph. D. (Tech.)	PDV
146	Vemula Shrikant	Ph. D. (Tech.)	PDV
147	Bindwal Ankush	Ph. D. (Tech.)	PDV
148	Maddekari Ganesh L.	Ph. D. (Tech.)	PRG
149	Ramisetty Kiran kumar	Ph. D. (Tech.)	PRG
150	Patil Pankaj N.	Ph. D. (Tech.)	PRG
151	Ramteke Lokesh P.	Ph. D. (Tech.)	PRG
152	Subhedar Preeti	Ph. D. (Tech.)	PRG
153	Rajashree Jawale	Ph. D. (Tech.)	PRG
154	Zambre Rahul	Ph. D. (Tech.)	PRN
155	Choudhari Sushil	Ph. D. (Tech.)	PRN
156	Pofali Prasad	Ph. D. (Tech.)	RDJ
157	Gargi Redkar	Ph. D. (Tech.)	SBK
158	Sushita Koley	Ph. D. (Tech.)	SBK
159	Sane Priyanka	Ph. D. (Tech.)	SMS
160	Swapnil pakhale	Ph. D. (Tech.)	SSB
161	Sudarshan kalsulkar	Ph. D. (Tech.)	SSB
162	Jitendra tongaonkar	Ph. D. (Tech.)	SSB
163	Vaibhav kedar	Ph. D. (Tech.)	SSB
164	Kalpana Mahalle	Ph. D. (Tech.)	SSB
165	Pallavi Parab	Ph. D. (Tech.)	SSB
166	Kumudini Lokhande	Ph. D. (Tech.)	SSB
167	Aditya Koli	Ph. D. (Tech.)	VGG
168	Amogh Joshi	Ph. D. (Tech.)	VGG
169	Jyotsna Arora	Ph. D. (Tech.)	VGG
170	Khursheed Ansari	Ph. D. (Tech.)	VGG

171	Meena Singh	Ph. D. (Tech.)	VGG
172	Noopur Rathi	Ph. D. (Tech.)	VGG
173	Parminder Kaur Heer	Ph. D. (Tech.)	VGG
174	Pravin Bote	Ph. D. (Tech.)	VGG
175	Vaishali Thaore	Ph. D. (Tech.)	VGG
176	Vishal Sawant	Ph. D. (Tech.)	VGG
177	Yogita Labrath	Ph. D. (Tech.)	VGG
178	Sachin Jadhav	Ph. D. (Tech.)	VKR
179	Mangesh Vetal	Ph. D. (Tech.)	VKR
180	Sonali Niphadkar	Ph. D. (Tech.)	VKR
181	Vrushali Kulkarni	Ph. D. (Tech.)	VKR
182	Dhanashree Panadare	Ph. D. (Tech.)	VKR
183	Priyanka Rao	Ph. D. (Tech.)	VKR
184	Nishat Khan	Ph. D. (Tech.)	VKR
185	Wasanik Parag	Ph.D. (Tech.)	NJ
186	Baviskar Chetan	Ph.D. (Tech.)	PDV
187	Nimkarde Mahesh	Ph.D. (Tech.)	PDV
188	Pachpate Nilam	Ph.D. (Tech.)	PDV
189	Budhwani Neha	Ph.D. (Tech.)	PDV
190	Patil Bhumika	Ph.D. (Tech.)	RVJ
191	Prashant Kotian	Ph.D. (Tech.)	SSB
192	Vaishali Kulkarni	PhD Tech (BPT)	AVP
193	Dnyaneshwar Bhand	PhD Tech.(BPT)	AVP
194	Revati Chavan	R A	VKR
195	Prakash Parhad	R. Scientist	GDY
196	Ashwini Nirukhe	R. Scientist	GDY
197	Tushar Gaware	R.A.	BNT
198	Ganesh Bhare	R.A.	BNT
199	Shital Somani	R.A.	BNT
200	Ashwin Pawade	R.A.	BNT
201	Sandeep Shukla	R.A.	BNT
202	Manoj Gor	R.A.	BNT
203	Rajan Mishra	R.A.	BNT
204	Ashwini Gaikwad	R.A.	BNT
205	Amol Waghmode	R.A.(JRF)	ABP
206	Nivarutti Patil	RA	AWP

39. Number of post graduate students getting financial assistance from the university.

All the students get financial assistance from various funding agencies such as UGC, CSIR, DAE, AICTE, industrial projects etc. As per Institute's norms, candidates can not be registered till fellowship support is provided.

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Yes.

The recently launched new program, certificate course in safety management was well thought based on the need of the chemical industry. The syllabus has been framed with help of industry experts besides academic experts. A seminar was also organized prior to finalize the syllabus and deliberate on the subject content.

41. Does the department obtain feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Syllabus is revised every five years and all the suggestions from alumni, teachers, industrialists, eminent professors and scientists are obtained to keep the syllabus in tune with present needs.

b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Every semester students provide their feedback and which is shared with HoD and staff members and necessary corrective actions are taken.

c. alumni and employers on the programmes offered and how does the department utilize the feedback?

The feedback is utilized in syllabus revision.

42. List the distinguished alumni of the department

1. Professor M. M. Sharma
2. Dr. R. A. Mashelkar

3. Mr. Mukesh Ambani
4. Professor D. Ramkrishna
5. Dr. Keki Gharda
6. Prof. J.B. Joshi
7. Prof. G.D. Yadav
8. Mr. Vijay Ratanparkhe
9. Mr. Kishor Mariwala
10. Mr. Sunil Ramanand

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Sr. No.	Date	Name of External Experts	Topic	Endowment
1.	28.11.2013	Professor D.H. Thompson	Cyclodextrin Based Materials for Gene Delivery and Niemann-Pick C Type Therapy	Shri G.M. Abhyankar Memorial Distinguished Fellow
2.	28.11.2013	Professor D.H. Thompson	Cyclodextrin Based Materials for Gene Delivery and Niemann-Pick C Type Therapy	Shri G.M. Abhyankar Memorial Distinguished Fellow
3.	02.01.2014	Professor Prashant Jain	Elucidating Chemical Reactions on the Nanoscale	Golden Jubilee Visiting Fellowship
4.	09.01.2014	Professor R. Krishna Univ. of Amsterdam	Molecular Traffic in Nanoporous Materials	B S Joshi Distinguished Fellow
5.	16.01.2014	Dr. Ken Williams	The science and technique behind Raman Spectrometer and its application in Material Sciences	TEQIP
6.	30.01.2014	Dr. Uday Shenoy	Targeting and Network Synthesis for Optimal Use of Resources	Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship
7	4.02.2014	Prof. Artur Cavaco-Paulo,	Micro/nanotechnology and Biotech for pharma and personal care	Professor B.D. Tilak Visiting Fellowships

8	20.02.2014	Dr. Allen P. Minton	How biochemistry <i>in vitro</i> can differ from biochemistry <i>in vivo</i>	K.J. Somaiya Visiting Professor Fellowship
9	13.03.2014	Kiran Golwalkar	Safety Management and Project Management in Chemical Industry	Prof. R.A. Rajadhyaksha Memorial Lecture
10	27.03.2014	Kiran Golwalkar	Safety Management and Project Management in Chemical Industry	TEQIP
11	07.04.2014	Prof. Suresh Bhatia	Quantum molecular sieving of light isotopes	Golden Jubilee Visiting Fellowship
12	17.04.2014	Prof. Dr. Asit Baran Mandal	How much we know about self-aggregated / self assembled systems? Utility of various techniques	B.D. Tilak Visiting Fellow
13	21.04.2014	Prof. Alfredo Ortiz	The importance of Ionic Liquids for attaining sustainable process intensification	Golden Jubilee Visiting Fellowship
14	02.05.2014	Dr. Jeff Kenvin	Textural Characterization and a Unified Approach to Isotherm Modeling & Thermodynamic Parameters	K.J. Somaiya Visiting Professor
15	29.05.2014	Prof. S.P. Moulik	Energetic of Micelle formation: Non agreement between the Enthalpy Measured by the direct method of Calorimetry & the indirect method of Van't Hoff	Dr. J.P. Kane Visiting Fellowship
16	09.07.2014	Dr. Garg	Simultaneous Production of US Grade Gasoline and Pure Aromatics from High Severity FCC Gasoline	Prof. R.A. Rajadhyaksha Memorial Lecture
17	14.07.2014	David Hodge	Alkaline and Oxidative Chemical Pretreatments and Fractionations for the Production of Fuels, Chemicals, and Materials from Lignocellulose	Golden Jubilee Visiting Fellowship
18	16.07.2014 17.07.2014	Ashutosh Sharma	Self-organization on Small Scales: Fabrication beyond the Top-down and Bottom-up	Shri V.V. Mariwala Visiting Professorship
19	28.07.2014	Dr. R. Vinu	Energy and Resource Recovery via Catalytic Fast Pyrolysis of Biomass, Polymers and Algae	-
20	16.09.2014	Prof. M.M. Sharma	Reminiscences of a career	-
21	29.09.2014	Bala Subramaniam	Resource-Efficient Catalytic Technologies for Emerging Feedstocks	The Dow Professor M.M. Sharma Distinguished Visiting professorship in Chemical Engineering
22	15.12.2014	Dr. Nejat	Seeded Granulation	K.J. Somaiya

		Rahmanian		Visiting Professorship
23	21.01.2015	Prof. P. Somasundaran	Structure Property/Performance Relationships for Synergy and Antagonism New possibilities of greener chemicals for sustainable and benign consumer products	Dr. Balwant S. Joshi Distinguished Visiting Professorship
24	10.2.2015	Prof. Mohan Karmarkar	Practical Reactor Design	-

44. List the teaching methods adopted by the faculty for different programmes.

- (a) Black board usage
- (b) Power point presentations
- (c) Student seminars
- (d) Quizzes
- (e) Animations/Videos

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

Department has also adopted NBA accreditation procedure for continuous monitoring of programme objectives and outcomes. The relevant information is always updated and reviewed for corrective actions.

46. Highlight the participation of students and faculty in extension activities.

- a) Science Day celebration (in March, every year)
- b) 5th International Workshop on crystallization filtration and drying, April 14-15, 2011
- c) '17th International Ozone Day' on 16th September 2011 in ICT with collaboration with Maharashtra Pollution Control Board, Government of Maharashtra.
- d) 6th International workshop on Crystallization, Filtration, Drying, Milling and Granulation (16th to 18th February 2012)
- e) "Chemference 2012" organized by Department of Chemical Engineering of ICT in collaboration with IIT-Bombay, December 2012
- f) OYCE 2013, Event of IChE Mumbai Regional Center organized in collaboration with ICT, Mumbai, April 2013
- g) 7th International workshop on Crystallization, Filtration, Drying, Milling and Granulation (21st February to 23rd February 2013)

- h) Indo-US Workshop “Biofuels and Bio-products”, March 2013
- i) IChE Chemical Engineering Congress, Chemcon 2013
- j) 8th International workshop on Crystallization, Filtration, Drying, Milling and Granulation (27-28 February and 1st March, 2014)
- k) Waste resource management of chemical and allied industries (7-8 November 2014)
- l) 9th International workshop on Crystallization, Filtration, Drying, Milling and Granulation (26-28 February, 2015)
- m) 21st International Ozone Day, 16th September 2015

47. Give details of “beyond syllabus scholarly activities” of the department

- a) Undergraduate summer research program
- b) Young Innovator’s Choice Competition –Young Researcher’s Conference (YICC-YRC) (Every year)
- c) Exergy - (Every year)
- d) Vortex – (Every year)

48. State whether the programme/ department is accredited/ graded by other agencies?

If yes, give details.

Both the programmes have been accredited by NBA and renewal is due. The applications have been submitted in Oct 2014 (UG course) and Dec. 2014 (PG course)

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Department of chemical engineering is actively engaged in basic and applied research. The department is rated as the best chemical engineering department in India in terms of quantity and quality of research. The average number of publications in peer reviewed international journals is about 110 every year. Many of the faculty members are fellows of Indian National Academies related to Science and Engineering. A large amount of funding generated through research projects and new projects approved by industries and government agencies and industrial consultancy. Faculty members are actively engaged in consultation activity and are helping industries to improve the productivity as well as bring down the cost of production. The department has developed many novel processes, catalysts and products which are used in industry and atomic energy sector at commercial scale. The department has also taken up many activities related to rural development as well as activities of social relevance such as cleaning of Rankala lake in Kolhapur, use of solar energy in food product drying and preservation, technologies utilizing biomass, development of energy efficient cooking devices, solar thermal

refrigeration systems, etc. The department is also engaged in research activities of basic science such understanding of turbulence phenomena, solvent ligand interaction using molecular modeling and quantum calculations, development of thermodynamic models, identification of reaction pathways and mechanism etc.

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Administration	
Strengths	
1	Flexible structure
2	Faculty take part in administrative affairs
3	Good interpersonal relationships
4	Dedicated staff who have put in many years of service at UICT
5	Decentralization of responsibility among faculty
Weakness	
1	Insufficient Lab staff due to unfilled posts
2	Inadequately trained lab staff
3	Dependence of students on lab staff
Opportunities	
1	Implementation of E-office, IT based procedures, paperless office
2	Autonomy of Institute
3	Paper work to be handled by attendants to save students research time
4	Make staff IT savvy and improve communication and interpersonal skills
5	CE administration staff to handle orders, order books, etc.
6	Create conducive atmosphere to attract good faculty
Challenges	
1	Rude behaviour of staff
2	Many and lengthy formalities
3	Inefficiency of staff
4	Non-cooperation from staff (stores and administration)
5	Delayed scholarship payment
6	Uncertainty of UGC fellowship
7	Late declaration of results
8	Cash payment timings and office start timings
9	Uneven distribution of workload
10	Lower down the chain of management staff feels neglected for efforts
11	Complacency due to autonomy
12	Overloading of faculty in administrative and academic matters due to vacant teaching posts
13	Procedural delays in appointment of staff and faculty

Facilities	
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Strengths	
1	Good analytical and computational facilities
2	Extensive library
3	Funding from various sources for buying sophisticated instruments
4	Easy accessibility and independent use of instruments and equipments
Weakness	
1	Computers maintenance staff inefficient
2	Inadequate lab space
3	Costly internet facility
4	Lack of communication facilities in most labs (Phones)
5	Lack of drinking water facilities in basement
6	Water clogging in basement during monsoon
7	Lack of glass blowing facility
8	Canteen food quality poor and ambiance unhygienic
9	Non-availability of Ice machine for CE department
10	Delays in Workshop for a given job
Opportunities	
1	Placement cell for PhDs
2	Special coaching/workshops for instruments and equipments
3	Online status check and follow-up for computer maintenance
4	Increase subscription to E-journals
5	Appointment of 2 students for equipment/instrument maintenance
6	Cost of xerox facility for students should be lowered
7	Chemical Abstracts can be made available online
8	Collaboration between labs for facilities
9	Collaboration with IIT for course work
10	More Lecture rooms fully equipped with audio-visual facilities
11	Many Laboratories should be made air-conditioned to take care of dust problem so that instruments can be maintained properly and extent of maintenance will reduce
Challenges	
1	Non-availability of trained staff for equipment maintenance
2	Ignorance of students in handling sophisticated equipments
3	Computational facilities may be damaged due to water clogging in basement

Faculty	
Strengths	
1	Competent, dedicated faculty
2	Diverse Areas of expertise of the faculty
3	Faculty have high degree of interaction with industry
4	Faculty Help UG/PG students in academic matters: e.g. jobs, fellowships abroad, PDF's
5	Faculty Help UG/PG in non-academic matters at personal level
6	Faculty members are experts in respective fields at national / international level

7	Faculty members are actively involved in research and act as consultants to industry
8	Faculty members have sponsored research projects from Govt. as well as private industry
Weakness	
1	Overloaded faculty due to large number of vacancies
2	Few not approachable
3	Few students are comfortable with one's guide but face difficulty while approaching others
4	Students' interaction at inter as well as intra departmental level is low
5	Other lab students not entertained
6	Favoritism
Opportunities	
1	Refresher courses and Continuing Education Programs for industry personnel
2	UG and PG Teaching program can be reduced to 9 months with 3 months industrial internship
3	World class researchers need to be attracted to become faculty members in the Department
4	M. Chem. Engg. / Ph. D. Programs can have industry person as co-guide to solve actual industry problems
5	New M. Tech. Program in Biochemical Engineering
6	Revision of B. Chem. / M. Chem. Syllabi for better recognition worldwide (GPA system, continuous evaluation, etc.)
7	Web based teaching programs / distance education programs can be started
8	Faculty members can write text books and research books in their areas of expertise
9	Research within the department should be extended to more, newer and other frontier areas
10	Collaboration with leading Universities at International level
11	Infrastructure needs to be upgraded
Challenges	
1	Competition from foreign institutes and universities
2	New private institutions

Finance	
Strengths	
1	Contributions from Alumni, well wishers and industry by way of donations
2	Utilization of funds for research and infrastructural development
3	Faculty strength brings in funds in form of projects from private and government organizations
4	Efficient mobilization of funds
5	Consultation activities generates large corpus of funds
Weakness	
1	No funding for infrastructure
2	Office funds clearance procedure slow (Petty cash)
3	Lack of assistance for students without stipend
4	Lack of awareness about optimum utilization of funds among research scholars
Opportunities	

1	Generate funds through distance learning programs and technology incubator cell
2	Stipends for Ph.D. (Sci.) students
3	IPR cell to provide and monitor finance for patent applications
4	Declare Master results and submit all documents in-time to UGC for smooth flow of stipend
5	Masters students stipend reduction can be replaced with compulsory Teaching/library assistanceship
6	Concept of MORE from LESS should be followed
Challenges	
1	Irregularity of UGC fellowship
2	Even if Masters students secure 1 st class in second semester, stipend reduced to Rs. 1000.
3	Efficiency of research students deteriorates due to irregularity of promised stipend
4	Introduction of various fees or compulsion in institute and hostel in between academic year
5	Stipend delays and irregularities keeps good and financially needy students away from the institute due to past record
6	Increase in number of research departments and institutes and centers

Maintenance	
Strengths	
1	CE lab attendants have done a wonderful job till date
2	Renovation of labs in progress
3	Student chain to maintain equipments
4	Well maintained stock of chemicals and solvents
5	Skilled personnel in workshop and CE lab
Weakness	
1	Website maintenance of CE department either lacking or less hands to help
2	No maintenance for junk stock pile
3	Computer maintenance service poor in response
4	Cleanliness and safety taken lightly by students
5	Many toilets are not cleaned
6	Unavailability of drinking water
7	Poor ventilation in some laboratories
8	Unavailability of Glass blower
Opportunities	
1	Workshops and seminars for instruments and safety to be made more frequent and compulsory
2	Research students of all years should attend all workshops if they are associated with the instruments
3	Research log should be made compulsory and mandatory
4	Instrumentation maintenance staff should be increased
5	Use of IT and database management software
6	Strict action against irresponsible students without guide's interference

7	IPR cell
Challenges	
1	Under-utilization / Malfunction of instruments due to lack or long delays in maintenance
2	Lack of cleanliness in the laboratories

Ambiance	
Strengths	
1	Clean and fresh environment
2	Well maintained gardens
3	Silent place to work
4	Good CE conference room
5	Good mix of students from various communities
6	Centralized security system
Weakness	
1	Rats, cats and dogs are menace in some labs
2	In-sufficient light in corridors at night and only one emergency light in corridor
3	Back side of campus not cleaned regularly
4	Canteen food quality poor
Opportunities	
1	Doors at entrance to LDA and GC should have stoppers to prevent cat and dog menace
2	More interaction of science, social structure and extra-curricular activities
3	Virtual reception desk for CE department to link research and facilities available in all research groups of department
Challenges	
1	Rats, cats and dogs
2	Dust and lack of cleanliness

51. Future plans of the department. The department wants to expand research activities in new areas and would like to establish and/or participate in centre of excellences in various thematic areas.

The department wants to expand research activities in new areas and would like to establish and/or participate in centre of excellences in various thematic areas.

(A) The department has plans to expand the facilities such as Porometer, LCMS, FESEM, XPS, 600 MHz NMR as well as replace old GCs', HPLCs', TOC, TGA, liquid nitrogen plant.

(B) We intend to have 50 Ph.D. students each year as compared to the existing 25.

(C) Department also has planning to start M. Chem. Engg. Degree course with Specialization in (a) Biochemical Engineering (b) Sustainability Engineering (c) Process modeling and simulation and (d) Energy engineering

New research areas/centre proposed in near future:

- (a) Process Instrumentation,
- (b) Industrial crystallization,
- (c) Particle Technology,
- (d) Centre for Natural Products
- (e) Advanced materials,
- (f) Energy engineering

The chemical engineering department of ICT has lion's share in the first generation entrepreneurs, since the inception of the Institute. Out of over 600 first generation entrepreneurs of ICT, almost 50% are from Chemical Engineering Department. However, these developments took place due to certain locational advantages of Mumbai, such as being close to harbour or being an international trade centre. The entrepreneur development cell is being proposed to promote the spirit of techno-entrepreneurship in a bigger way. This will catapult ICT into the world stage as Stanford of East.

Chemistry Department

The Department of Chemistry was established in 1951 with the vision of being “a nationally recognized chemistry resource centre, making noteworthy academic contributions within the Institute and also to local and national educational programmes, and undertaking contemporary and relevant research”. The Department has come a long way since its inception and the fact that its academic and research programmes are recognized nationally (DST FIST, UGC SAP, etc.) and internationally (RSC accreditation) are a testimony to the quality of academic output.

The Department has a dedicated team of faculty members, support staff and students who have contributed in achieving high academic standards. At present, the teaching staff of the Department consists of three Professors, one Associate Professor and four Assistant Professors (including one UGC FRP faculty member) in addition to three temporary appointments through the various government funding schemes such as DST INSPIRE faculty award and Ramanujam fellowship. The eleven members of the support staff are all appointed through the regular positions sanctioned by the government. Additionally, there is one tutor who is appointed on an ad hoc basis to assist with the teaching.

The Department currently offers a two year M.Sc. Chemistry programme with an annual intake of twenty students per year. The students are selected on the basis of a written entrance test conducted by the Department. The programme consists of several core and elective courses focusing on different aspects of Chemistry and Chemical Engineering. The syllabus of the programme is regularly upgraded in order to incorporate the latest developments in the field of Chemistry based on the feedback of the students, alumni and external experts. The main objective of the M. Sc. programme is to make the students well versed in the fundamental concepts of the subject while introducing them to the latest developments in chemical research. One of the highlights of the programme is the six month research project that the students are expected to undertake during the final semester of the programme. The fact that this programme was accredited by the Royal Society of Chemistry is testimony to the academic quality of the programme, given the fact that the only other Institute to have this honour in India is IISER, Pune.

The Department also offers a Ph. D. (Science) programme, admissions to which are based on the Ph. D. entrance test conducted by the Department. At present, the Department has about seventy students registered for the Ph. D. programme. Most of the

students are supported with fellowships from various government schemes while some students are funded by the industry. The students are expected to complete a mandatory course work as a prerequisite criterion for registration. The Ph. D. students get an opportunity to work on emerging areas in the field of Chemistry and are encouraged to share their research with the wider scientific community through publications and oral / poster presentations.

In addition to the two programmes mentioned above, the Department regularly contributes to other programmes conducted by the Institute. It conducts numerous theory and practical courses for the first year undergraduate programmes (B. Tech., B. Pharm. and B. Chem. Enng.) as well as for the M. Tech. programmes.

The Department has three undergraduate laboratories and five research laboratories. Moreover, there are three central instrumentation rooms which are well equipped with numerous analytical instruments like GC, GCMS, UV-visible spectrometer, IR spectrometer, potentiostat, DSC – TGA, etc. available to the students for their research work. In addition, the Department has an advanced facility for material characterization funded by DST Nanomission. The Department also has a computational laboratory facility dedicated to the students. The Institute library is well equipped with most of the subject books and resources relevant to the students of the Department.

The main areas of research include organic synthesis, catalysis, green chemistry, nanoscience, interfacial chemistry, electrochemistry, mechanistic studies and computational chemistry, to name a few. At present, the academic activities are funded by various government programmes such as DST FIST and UGC SAP DRS Phase – II funding. In addition, the faculty members are encouraged to apply for projects and individual grants to generate resources for research. Some of the major agencies currently sponsoring individual research grants in the Department include DST (Nanomission, INSPIRE, etc.), DBT, DAE, SERB, etc. Furthermore, the faculty members of the Department carry out many collaborative projects with industry in order to generate ideas and methods that can be applied for the improvement of chemical technology.

The Department regularly organizes various conferences, workshops and seminars in order to boost scientific exchange of ideas. The Department recently conducted Chem Careers in collaboration with Royal Society of Chemistry. A Workshop on “Applications of Electrochemistry in Photo Voltaic Devices, Nanotechnology and Energy Research”

was arranged on 16th March 2015 in collaboration with Metrohm Inc. The Department regularly conducts workshops on laboratory safety for students as well as staff members of ICT with the aim of creating a general awareness about common laboratory safety issues. The Department invites experts from the academia and industry as speakers to deliver endowment lectures. Some of the endowment lectures organized annually by the Department are supported by B. D. Tilak endowment, G. D. Gokhale endowment, CMP endowment, Spinco Biotech endowment, Golden Jubilee Visiting fellowship, etc. The annual fest organized by the M Sc. and Ph. D. students of the Department – Rasaynam – is a much awaited intercollegiate event.

In future, the Department plans to expand the current research expertise by incorporating expertise from various contemporary areas of research such as nanoscience, bioorganic chemistry, materials chemistry, computational chemistry, theoretical chemistry and to develop research facilities to meet international standards with respect to analytical facilities, lab facilities, etc. It also intends to develop the M.Sc programme further in terms of increasing the intake of M. Sc. students and collaborating with reputed Universities in India and abroad to improve the academic standards. One of the important goals of the Department is to increase its outreach by continuing and increasing its contribution in worthy national academic programmes like Chemistry Olympiad, NIUS, teachers' training, KVPY, etc. The Department aims to excel in its contributions to the Institute and to the society by achieving and sustaining globally recognised standards of merit.

REPORTS OF SEMINARS/WORDHOPS/SYMPOSIA ARRANGED BY

DEPARTMENT OF CHEMISTRY

Academic year 2012-13

One day Indo-Japan conference on "Catalysis -A Green Chemistry Approach"

The Department organized a one day Indo-Japan conference on "**Catalysis -A Green Chemistry Approach**" on 13th February 2013 at ICT. The conference was organised under the auspices of the UGC-SAP programme of the Department and also partly funded by the TEQIP-II programme of the Institute. Dr. Takehiko Sasaki from University of Tokyo, Japan and Masayuki Shirai of National Institute of Advanced Industrial Science and Technology, Japan and several eminent scientists from Industry

and academic Institutes of India delivered lectures to about 120 participants. The talks were followed by a poster session in which young researchers of ICT and other Institutes presented their research work. The valuable comments by the participants enthused the researchers to make their research programme more meaningful and organized.



Indo-Japan conference on "Catalysis -A Green Chemistry Approach"



Poster session for Indo-Japan conference on "Catalysis -A Green Chemistry Approach"

Indo-German conference "Green Catalysis for Sustainable Development"

The 2nd International Indo-German Symposium was organized with "Green Catalysis for Sustainable Development" as the focal point. Overall 20 scientists from Germany and 25 from India took part along with a sizeable representation by research students from all parts of the country. The event took place under the aegis of the Department of Science and Technology, India, and Federal Ministry of Education and Research, Germany. It was organized through joint efforts of the Institute of Chemical Technology, India, and Liebniz Institute for Catalysis, Rostock, Germany, on the 29-31 October 2012 at Holiday Inn, Mumbai.

Over 40 oral presentations including 6 plenary, 17 keynotes and 17 invited orals were presented during this symposium. There was a poster session which included 75 posters. The subjects covered included original contributions in the areas of catalysis, green chemistry and renewable resources. There were several other interesting lectures on various topics like photo-catalytic C-H activations, carbon nanotubes, nanomaterials, renewable chemicals for biopolymers, use of Cu in glycerol hydrogenolysis, Use of ionic liquids in catalysis and many more. Various reactions like acetoxylation of styrene, oxidative dehydrogenation of ethane, one-pot synthesis of propargylamines using gold nanoparticles, valorization of renewables by oxidation with gold catalysts, ammoxidation of 2-methylpyrazine, hydrodecyclization of multi-ring naphthenes, carbon dioxide on electro-catalytic surfaces were also covered.

Workshop on Communication and Interview Skills by Mr. Sudhir Shah

A full-day workshop on Communication and Interview skills by Mr. Sudhir Shah, Management consultant, Naipunyam, was organized for the benefit of our M.Sc (First and Second year) students on Saturday, 20th April 2013. The workshop was from 10.00 a.m. to 6.00 p.m. in the Venkataraman Auditorium. The students were requested to bring with them their biodata and possible expectations about their job.



Dr. Sudhir Shah in the Workshop on Communication and Interview Skills

Mr. Shah elaborated on the interview skills. He explained how to prepare good and effective curriculum vitae, and how to organize the various documents needed. Communication skills were elaborated in detail with demonstrations and interactive sessions. Five major components of communication skills – listening, understanding, reverting, language, and body language - were elaborated. Body language was given due emphasis in order to make the presentation effective and also to understand the person we converse with. Language skills were elaborated. Common mistakes done in spoken and written English were presented. Mr. Shah explained various aspects of personality and emphasized the importance of positive approach.

Some Assignments were given to the students to assess their personality. Some tests were also conducted for self-evaluation. The concept of brain mapping was introduced and its importance in career was explained. There was one hour open house session, in which the students asked questions to the resource person and he answered them satisfactorily.

Laboratory Safety Workshops for laboratory staff and Ph.D. Students

A crucial component of chemical education is to nurture the basic attitude and habits of prudent behavior in the laboratory. Safety is an inseparable part of all laboratory activities. With this consideration, the Department of Chemistry, under the auspices of TEQIP, conducted two ‘Workshops on Laboratory Safety’, on 19th March for Laboratory Staff and on 20-21 March 2013 for the Ph.D. Students of the Institute.

(1) Laboratory safety Workshop for Laboratory Staff, 19th March 2013

Around 45 participants from all the departments of ICT attended the workshop. Few participants from local colleges were also allowed to attend the workshop. It was conducted in Marathi and Hindi. Prof. B.M. Bhanage welcomed the participants. Vice Chancellor Prof. G. D. Yadav inaugurated the workshop and also addressed the participants. Prof. S.D. Samant, discussed General Safety norms and precautions which should be taken while working in the laboratory. Mr. Suresh Jadhav, an environmentalist gave a presentation on Case Studies in Laboratory Safety. Prof. Radha Jayaram, explained the use of Personal Protective Equipments. Dr. Sadhana Sathey talked about Toxicity of Chemicals and safe handling of Chemicals. Prof. B.M. Bhanage explained about Storage and transportation of chemicals. He also explained handling of gas cylinders. Dr. Jayashree Nagarkar explained about Fire and how to extinguish it. Mrs. Prerana Goswami talked about Electrical safety. Mr. Rupesh Gaikwad conducted the session on First aid Issues and transportation of casualties. Fire Fighting Demonstrations were arranged. A safety handbook in Marathi was given to the participants.



Laboratory safety workshop for laboratory staff

(2) Workshop for Ph.D. Students

120 participants from almost all the departments attended the Workshop. The workshop was inaugurated by Prof. G.D.Yadav, Vice Chancellor, ICT. He discussed. Prof. V.V.Mahajani gave a presentation on Chemical safety. Biosafety was discussed by Prof.

Deepti Deobagkar. Prof. Radha Jayaram explained the use of Personal Protective Equipment She also talked about Hazard Management. 'How to make my lab a safe workplace' was a topic discussed by Mr. Suresh Jadhav. Dr Vijay Bhujale discussed the 'Safe Practices in Laboratory during Research and Process Development Stage'. The lecture cum demonstration on 'First Aid Issues and Transportation of Casualties' was conducted by Mr. Rupesh Gaikwad. Prof. M..Keravala discussed the aspect of Safety with respect to electricity. Prof B.M.Bhanage explained the Safety Measures to be followed while carrying out the High Pressure Reactions. Prof. S.D. Samant highlighted the importance of storage and compatibility of Chemicals. Waste Management was covered by Dr. Mrs. J. M. Nagarkar. Dr. Vijaykumar talked about Toxicity of Chemicals. Fire Safety covered by Dr. Mrs. J.M. Nagarkar. At the end there was a firefighting demonstration arranged by Mr. Datta Kamble. An examination based on the course was conducted at the end. A book on 'Laboratory Safety' was given to the participants.



Laboratory safety workshop

NET/SET Orientation workshop

In order to give orientation to NET/SET examinations to the Masters and doctoral students working in the Department a NET/SET workshop was organized on 9th and 10th May 2013. The lectures were given by the Ph.D. students who have cleared the NET

examination. About 50 students participated in the workshop. The following students gave lectures -

Mr. Kirtikumar Badgujar, Mr. Druman Uteka, r Mr. Radhesham Shelkar, Mr. Subhash Yedge, Mr. Rajendra Mane, Mr. Anand Bhurage, Mr. Nanabhau Karanjule, Mr. Balaso Jadhav, Mr. Adil Khatri, Mr. Sandeep Gadge, and Mr. Nilesh Korgaonkar.

Workshop on “Green and Sustainable Technology” and SERB Task Force Meeting on Green Chemistry

The 1-Day Workshop on “**Green and Sustainable Technology**” and **SERB Task Force Meeting on Green Chemistry** was held at Institute of Chemical Technology on 11th May 2013. This conference was a unique conference first of its kind based on the lateral thoughts to bring the interaction between industry and academics. Many personnel from reputed industries have presented their problems, existing hurdles and how technology is emerging in the present context with respect to emphasis on Green and Sustainable Technologies. The need and thrust for such high end processes, their importance and outcome in the present scenario of changing global economic situation was well debated and discussed in the conference. This conference included the task force meeting which took place after the workshop.

The following DST Task Force Committee members and Invitees were present. Prof S. Chandrasekaran, IISc, Bangalore; Dr P.K. Ghosh, CSMCRI, Bhavnagar; Dr B. Gopalan, Orchid Pharma Ltd, Chennai; Dr R.V. Jasra, Reliance Industries Ltd, Hajira; Dr B.C. Ranu, IACS, Kolkata; Dr Sujit Roy; Dr R. Brakaspathy, DST; Prof. P. Selvam, IIT, Chennai; Dr. R. R. Bhattacharjee, PSG Institute of Advanced Studies, Coimbatore; Dr. Jyotirmayee Dash (IACS Kolkotta); Dr. Rajib Kumar Goswami (IACS Kolkotta); Dr. Joyram Guin (IACS Kolkotta); Dr. DebabrataMaiti (IIT Mumbai); Dr. C. V. Rode, National Chemical Laboratories, Pune; Dr. D. Srinivas NCL Pune Number of student participants were 50, Number of company participants were 43, and 25 academicians-ICT Faculty participated.

Chem Careers India 2012

Royal Society of Chemistry (RSC) India; Department of Chemistry, Institute of Chemical Technology, and the British Council, Mumbai, organized an event - ‘**Chem**

Careers India' on 20th October 2012 at ICT. The event was organized for the benefit of the undergraduate and post-graduate chemistry students of Mumbai and nearby areas. The objective of the programme was to give an exposure to the wide range of career opportunities available. Several lectures of eminent scientists/ entrepreneurs were arranged. This was followed by expert advice on soft skills. 25 industries put up their stalls in the programme. About 900 students participated in the programme. The event helped the chemistry graduates / students to realize the relevance of chemistry in various industrial sectors and also helped them to identify the various career options available in the subject of chemistry.

CONTECH 2012

The concept test in Chemistry (CONTECH 2012) was conducted to test the basic understanding of Chemistry of undergraduate and postgraduate students was conducted by the Department in collaboration with the Association of Chemistry (ACT) on 1st December 2012. This test is conducted every year by the Department of Chemistry for last 5 years with very good response from students. This year 78 students appeared at this test. Mr.Shaaz Khatib, Mr.Partho Ghosh & Mr.Ashish Jayaraman secured first, second & third rank respectively. They were felicitated with prizes in the form of books and certificate at the Institute's Annual Day Function. Remaining participants who passed this test were also given a participation certificates.

RASAYANAM 2013

The Department of Chemistry, ICT, organized its 1st Chemistry-based festival, "RASAYANAM 2013" on the 5th and 6th of January, 2013. M.Sc. (Chemistry) students took initiative to organize the function. Around 150-200 participants from various colleges across Mumbai participated in the inaugural edition of RASAYANAM. It included 6 different events spanning across 2 days. Separate quiz competitions for undergraduates and post graduates, a comic theme based poster competition, an exhibition of not-so-often-seen chemical reactions, a forensic science based mystery solving competition and a treasure hunt with chemical clues were the events that took place. A Power Point presentation competition was included too. Certificates and the prize cheques were handed out to the respective winners on the 2nd day of the festival without any delay.

Academic year 2013-14

CONTECH 2014

The concept test in Chemistry (CONTECH 2014) was conducted by the Department in collaboration with the Association of Chemistry (ACT) on 18th January 2014, to test the basic understanding of Chemistry of undergraduate and postgraduate students. This test is conducted every year by the Department for last 6 years with very good response from the students; mainly UG students. Professor S.D. Samant coordinated this activity. About 100 students took the examination. Mr. Harshwardhan Shrivastava, Mr. Soham Shah & Mr. Omkar Bhatavdekar secured first, second & third rank respectively. They were felicitated with prizes in the form of books and certificate at the Institute's Annual Day Function. Remaining participants who passed this test were also given a participation certificates.

NET/SET ORIENTATION WORKSHOP

An orientation course for the CSIR/UGC – NET/SET exam was organized by the department on 25th and 26th February 2014. The workshop was funded by the TEQIP II. Dr. Kaustubh Joshi conducted this activity. It was open to the M.Sc. and Ph.D. students of the department of chemistry as well as other interested students from other departments. As many as 60 students registered, while few more last minute entries were accepted on the day of the workshop.

The basic theme behind the workshop was to create an opportunity for the CSIR-UGC aspiring students to interact with the Ph.D. students of the department who recently successfully cleared this exam. These students shared different tricks and trades of the exam which could prove useful to all the students while preparing for the upcoming competitive exam.

A series of lectures were conducted over two days spanning eight sessions, covering different topics in the area of chemistry known to be very important from the point of view of CSIR-UGC-NET examination. All the lectures were designed to be interactive in nature making the students to interact and get their queries right during the lectures.

Towards the end of the workshop, a one hour test on the lines of CSIR-UGC-NET exam format was conducted based on the topics covered during different sessions.

Mr. Abhishek Dubey, Mr. Samadhan Jagtap, Mr. Kirtikumar Badgujar, Mr. Gopal Dhangar, Mr. Nanabhau Karanjule, Mr. Vilas Jadhav, Mr. Sandeep Gadge, Mr. Nilesh Korgaonkar, Mr. Balaso Jadhav, Mr. Rajendra, Mr. Abhishek Tiwari, Mr. Subahash Yedage, Mr. Mahendra Patil, Mr. Ajay Ardhapure and Mr. Sachin Bhagade delivered lectures on various topics.

RASAYANAM 2014

Rasayanam 2014 was held on 3rd March 2014. 161 individuals from across 19 institutes of Mumbai participated in the event. Dr. A.R. Kapdi was the convenor. Gaikar was the Chief Guest and inaugurated the event.

In the first session events like ‘What The Fun’, a refreshing out-of-the-box quiz competition exclusive to undergraduates and ‘The Pundits’ exclusively for postgraduates were organized. 32 teams of 2 students each participated in the ‘What The Fun’. 16 teams of 2 each had participated in ‘the Pundits’ event. This was a neck to neck competition and after around 2 hours of buzzers and questions and answers, the winners were declared.

After the Chem-Crossword solving elimination round, 6 teams made it to the the finals. This event left everyone, including the finalists and the eliminated audience, happy, refreshed and with a little enhanced knowledge of Chemistry. This is what we call – ‘Purpose Served’.

One of the main highlights of Rasayanam 2014 was ‘Rasayan Mela’. Stalls were setup for demonstrating rather interesting, colorful and full of knowledge Chemistry Experiments. This was indeed a crowd magnet, everyone from faculties to research scholars to participants to non-participants, wanted a glimpse of experiments being demonstrated.

In the second post-lunch session, a poster competition named, ‘Chemdraw v2.0.1.4’ was held for the 1st time in Rasayanam, which was a perfect blend of innovative art and chemistry put together. 11 teams of two each had participated in the event. Lastly ‘ChemShod – The Treasure Hunt’ an all innovative treasure hunt where all the clues were Chemistry based was conducted. The response for the event was so huge that the event had to done twice to accommodate as many participants possible. The uniqueness

and the atmosphere generated by ChemShodh ended Rasayanam 2014 on a real high note, for both the organizers and especially the participants.

The whole event was conducted by the students of M.Sc. Chemistry, all 40 put together with the support of the Department of Chemistry.

CATSCHOL

“Catschol-2014”, a chemistry research conference for research students was also organized by the department of Chemistry on the 4th of March 2014. In this event, posters and oral presentations were presented by the students of the department. Prizes were given to 2 best posters and to the best oral presentation. Mr. Kirtikumar Badgujar and Mr. Mahesh Edake were awarded first and second prizes respectively, for their research presentations.

Laboratory Safety Workshops For Ph.D. Students

The Department conducted a two-day Workshop on Laboratory Safety for the PhD students on 18th and 19th of March 2014, with the aim of creating a general awareness about common laboratory safety issues. The workshop focused on sensitizing the students towards potential hazards in a chemical / biochemical laboratory and providing them with the technical know-how to prevent and manage potentially dangerous situations. The workshop included lectures and interactive sessions by various experts from the academia and industry in addition to first aid and fire fighting demonstrations.

The workshop was organized under the auspices of Technical Education Quality Improvement Program – Phase II (TEQIP – II) and was also supported by the UDCT Alumni Association (UAA). Dr. J.M. Nagarkar was the convenor and Dr. Shaeddha Tiwari was the co-convenor of the workshop. As many as 124 students registered. The participants were provided with a manual on Laboratory Safety as a part of the registration kit, which was sponsored by UAA.

The inaugural session of the workshop was chaired by Professor B. M. Bhanage (Head, Department of Chemistry, ICT) and the workshop was inaugurated by Professor S. D. Samant (Department of Chemistry, ICT). Professor Samant gave an overview of the safety and related issues during his inaugural address and emphasized the importance of the various topics scheduled for discussion in the next two days.

The workshop began with a lecture on “Personal Protective Equipments” by Professor R. V. Jayaram (Department of Chemistry, ICT). This was followed by a lecture on “Laboratory Waste Management” by Dr. J. M. Nagarkar (Department of Chemistry, ICT). The two lectures were followed by an interactive session moderated by Dr. Anant Kapdi, wherein the participants shared their perspectives and experiences on laboratory safety issues. Dr. Purna Goswami (General Engineering Department, ICT) discussed the importance of “Electrical Safety”. Shri. Vijay Bhujle (Intertek Industries and Visiting Faculty member, ICT) then delivered a talk on “Development of Safe Manufacturing Processes”. This was followed by a video demonstration “Safe Practices in R & D laboratory to achieve them” and the students actively participated in the interaction session after the demonstration. The participants were given hands-on training in the important skills of fire fighting through a demonstration on the Futsal ground of ICT. The fire-fighting demonstrations were conducted by Shri Dattaji Kamble (ICT).



Fire fighting demonstration during Laboratory Safety Workshop

The second day of the workshop commenced with a demonstration session on “First-aid in Lab Accidents” by Dr. Manjeet Singh (CPR trainer, Medical Consultant – Fortis Hospital). The participants were introduced to critical life-saving techniques in case of emergencies. The topic of handling hazardous chemicals was discussed by Dr. Anant

Kapdi (Department of Chemistry, ICT) in the lecture titled “Handling Dangerous Chemicals” which also included a number of video clips. Professor Vandana Patravale (Head, Department of Pharmaceutical Sciences and Technology, ICT) focused on the physiological effects of chemical exposure in the lecture titled “Toxicity”. A lecture on the fire hazards and fire-fighting aspects was given by Shri Santosh Hule (Manager, HES, NOCIL). In the afternoon session, Professor V. V. Mahajani talked about safety scenarios in research laboratories and the industries in his lecture “Gambling Life in Laboratory”. The next lecture on “Handling High Pressures” by Professor B. M. Bhanage was focused on the management of gas cylinders and laboratory systems using high pressure conditions.

The participants’ feedback was taken during the concluding session. The feedback from the participants was very positive and encouraging. The participants also came up with proactive suggestions for improving the laboratory safety issues in the institute. Thus, the workshop was successful in not only creating a general awareness about safety issues, but also brought forth many suggestions from the student community.

A written examination was conducted based on the contents discussed during the workshop. The participants were awarded a certificate of participation upon successful completion of the workshop (based on their attendance and performance in the written examination).

Teaching Learning Workshop

A workshop on Teaching-Learning was organized on 28th and 29th March 2014 under the auspices of the TEQIP. The main objective of this workshop was to sensitize the participants with respect to the factors which affect the quality of science teaching-learning process. Professor S.D. Samant was the convenor.

The workshop was mainly for the ICT faculty and some teachers from colleges in Mumbai were also allowed to participate. 36 teachers participated. On 28th March the workshop was inaugurated by Professor G.D. Yadav, V.C., ICT. Professor V.G. Gaikar, TEQIP Co-ordinator, and Professor P.R. Vavia, Dean, Acad. Prog. addressed the participants. Professor Samant explained the idea of the workshop.

Professor Arvind Kumar (Formal Director, HBCSE), Professor H.C. Pradhan (Formal Director, HBCSE), Professor Vijay Singh (HBCSE), Dr. Chitra Natarajan (Dean,

HBCSE), Professor Savita Ladage (HBCSE), Dr. Hemangi Bhagwat (K J Somaiya College of Science and Commerce), Dr. Vivek N. Patkar (Consultant), Mrs. Rita Doctor (ICT) and Mrs. Rekha Ramesh (Shah & Anchor College) gave lectures. The topics covered were History and philosophy of science -Implication for teaching, Research writing and publication process, Making science communication more effective, Measurement and evaluation in teaching, Socio-scientific issues: Role in teaching-learning, Relevance of science education to practicing teachers, Assessment: Design and Denouement, Learning in the laboratory, Communication beyond words, Teaching/Learning in digital era, Research writing and publication process Relation between teacher and taught-Psychological perspective, Aligning assessment to curriculum. At the end of workshop, a discussion was held regarding specific shortcomings in teaching and the ways to overcome them.

Academic year 2014-15

Laboratory Safety Workshop for Ph.D. Students

The Department conducted a one day Workshop on Laboratory Safety on 4th September 2014, with the aim of creating a general awareness about common laboratory safety issues. The workshop included lectures and interactive sessions by various experts from the academia and industry. The workshop was organized by Centre of Excellence in process intensification & Department of Chemistry. Dr. J.M. Nagarkar (Department of chemistry) was the convener and Dr. C. S. Mathpati (Department of Chemical Engineering) as Co-convener. The participants were provided with a manual on Laboratory Safety as a part of the registration kit. The workshop was inaugurated by Professor S. S. Bhagwat, Head, Department of Chemical Engineering, ICT.

The workshop began with a lecture on “Personal Protective Equipments” by Professor R. V. Jayaram (Department of Chemistry, ICT), followed by a lecture on “Laboratory Waste Management” by Dr. J. M. Nagarkar (Department of Chemistry, ICT), Dr. Shraeddha Tiwari talked about safe storage of chemicals and Mrs. Purna Goswami (General Engineering Department, ICT) discussed the importance of “Electrical Safety”. Shri. Vijay Bhujle (Intertek Industries) then delivered a talk on “Development of Safe Manufacturing Processes”. The lecture on “Handling High Pressures” by Professor B. M. Bhanage was focused on the management of gas cylinders and

laboratory systems using high pressure conditions. Shri Dattaji Kamble (ICT) also gave the information about various fire extinguishers. The participants' feedback was taken during the concluding session. The feedback from the participants was very positive and encouraging. The participants also came up with proactive suggestions for improving the laboratory safety issues in the Institute.

Workshop on “Applications of Electrochemistry in Photo Voltaic Devices, Nanotechnology and Energy Research”

A Workshop on “Applications of Electrochemistry in Photo Voltaic Devices, Nanotechnology and Energy Research” was arranged on 16th March 2015 in collaboration with Metrohm Inc.

The workshop was planned with an objective of giving in-depth information about the latest techniques and applications in electrochemistry which will be beneficial for future endeavors. The total participation was 76 in number which included M.Sc. Sem IV students from our Department and Ph.D students not only from our Department but also from other Departments of ICT. We also had a few participants from Ramnarain Ruia College. The workshop constituted of lectures and practical demonstration sessions. The pre-lunch session was based on the basic concepts of Electrochemistry and the post-lunch session was designed to emphasize various applications of Electrochemistry.

Rasaynam 2015

The annual intercollegiate chemistry festival, Rasaynam, organized by the Department of Chemistry, was started in the year 2013 by the M.Sc. batch of 2011 – 2013 under the leadership of Mr. Nilesh Shahi. In the last two years, it has attracted around 200 students (both Undergraduates and Post-graduates) from all across Mumbai.

Inaugural Ceremony

“Rasayanam”, a fun-filled inter collegiate chemistry related event was held on 16th and 17th January 2015. Students from several local colleges participated in this programme. Events such as “The Mega Minds”-a chemistry quiz for post graduate students, “What is the Fun”- A chemistry and skill based quiz for under graduate students, “Chem Enigma”- an event based on crime scene investigation, “Chem

Draw”- a poster presentation competition, “Chem Shodh”- a treasure hunt with chemistry based clues, “Rasayan mela”- with magic shows of chemistry experiments and exhibition experiments, and “ Chem Housie”- A normal housie game with element symbol instead of numbers, all were part of this programme and received over whelming response and appreciation.

The Inaugural ceremony started at 09:00 a.m. in the K.V. Auditorium. Dr. Shrikant Sakhalkar, ICT alumnus, was the Chief Guest for the occasion. The ceremony was blessed with the presence of the honorary Vice-Chancellor of the Institute, Prof. G.D. Yadav.

Dr. Kapdi, the convenor, welcomed the guests with a floral bouquet and addressed the audience with the introduction of Rasayanam. Our honorary Vice-Chancellor, Prof. Yadav spoke about the history of ICT and emphasized the importance of Chemistry in all walks of life. The Chief Guest for the occasion, Dr. Sakhalkar gave a small but inspiring talk about chemistry and strength of today’s generation.

The ceremony ended with the Opening of Rasayanam by unveiling poster of Rasayanam by the dignitaries on the dais. Events conducted in the festival were The MegaMinds – A chemistry quiz for Post students, ChemEnigma – An event based on Crime Scene Investigation and forensic science, ChemDraw - a poster presentation competition, ChemShodh – a treasure hunt with chemistry-based -graduate students, What the Fun! - A chemistry and skill based quiz for the Undergraduate clues, Rasayan-Mela – magic shows of chemistry experiments and exhibition experiments, etc.

The closing ceremony of Rasayanam was held on 17th January, 2015 at 05:30 p.m. in the K.V.Auditorium. The Chief Guest for the occasion was Dr. Shrikant Sakhalkar, alumni of UDCT, who addressed the audience with a talk on ‘A Pharma Perspective: 2020 and Beyond’. The talk gave an insight into the current status of pharmaceutical industries in India. The talk was followed by prize distribution in which the winners were awarded cash prizes, trophies and certificates. The participants were awarded with the participation certificates. The ceremony ended with the vote of thanks by the Chairperson of Rasayanam-2015, Ms. Neetha S. Bhat. Overall the participation for Rasayanam-2015 was about 400.

1. **Year of establishment** : 1951
2. **Is the Department part of a School/Faculty of the university?** No
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)**
 - a) M. Sc. (Chemistry) – Four semester post-graduate course
 - b) Ph.D. (Chemistry)
4. **Interdisciplinary programmes and departments involved**
M. Tech. (Green Technology) – an interdisciplinary programme of ICT
5. **Courses in collaboration with other universities, industries, foreign institutions, etc.-**
NA
6. **Details of programmes discontinued, if any, with reasons:** NA
7. **Examination System: Semester**

Semester based evaluation pattern, with elective courses in the last two semesters of M.Sc. programme
8. **Participation of the Department in the courses offered by other departments Teaching theory and laboratory courses to**
 - a) Bachelors in Technology (All branches)
 - b) Bachelors in Chemical Engineering
 - c) Bachelors in Pharmacy
 - d) M. Tech. (Green Technology)
 - e) Research Methodology (Ph. D. Science)
9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS and MPS)
Professor	2	1	3
Associate Professors	3	2	1
Assistant Professors	5	3	3
Others			UGC FRP – 01 DST INSPIRE – 02 Ramanujam Fellow - 01

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	Experience (in years)	Ph. D. Students guided for the last 4 years
Prof. Radha V. Jayaraman	Ph.D.	Professor in Physical Chemistry	Catalysis, Green Chemistry, Interfacial Chemistry	22	Completed: 07 Ongoing: 13
Prof. Bhalchandra. M. Bhanage	Ph.D.	Professor in Industrial and Engineering Chemistry	Catalytic Science and Technology, Green Chemistry	11	Completed: 12 Ongoing: 23
Prof. Shrinivas D. Samant	Ph.D.	Professor in Organic Chemistry	Synthetic Organic Chemistry	33	Completed: 04 Ongoing: 07
Dr. Jayshree M. Nagarkar	Ph.D.	Associate Professor in Physical Chemistry	Physical Chemistry Catalysis, Green Chemistry	17	Completed: 04 Ongoing: 08
Dr. Anant Kapdi	Ph.D.	UGC FRP Assistant Professor in Chemistry	Organic Chemistry, Organometallic Chemistry	4	Completed: 00 Ongoing: 10
Dr. Vijay Kumar	Ph.D.	Assistant Professor in Organic Chemistry	Homogenous and heterogeneous catalysis	3	Completed: 00 Ongoing: 03
Dr. Shraeddha Tiwari	Ph.D.	Assistant Professor in Inorganic and Physical Chemistry	Physical Organic Chemistry	2	Completed: 00 Ongoing: 02
Dr. Pavan More	Ph.D.	Assistant Professor in Microanalysis	Environmental Catalysis		Completed: 00 Ongoing: 00
Dr. Kaustubh Joshi	Ph.D.	Ramanujam Fellow	Computational Chemistry	2	Completed: 00 Ongoing: 02
Dr. Dipanwita Das	Ph. D.	DST INSPIRE Faculty	Inorganic Chemistry	2	Completed: 00 Ongoing: 02

Dr. Sanghamitra Chatterjee	Ph. D.	DST INSPIRE Faculty	Electrochemistry	1	Completed: 00 Ongoing: 02
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11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Name	Affiliation
Dr. Veena Khilnani	Department of Chemistry, K. J. Somaya College, Vidyavihar, Mumbai.
Dr. Tanuja Parulekar	Department of Chemistry, SIWS College, Wadala, Mumbai.
Mr. Abhimanyu Yadav	Department of Chemistry, G. N. Khalsa College, Matunga, Mumbai
Prof. N. D. Thakkar	Retired Professor, Institute of Science, Mumbai
Dr. Hemant Khanolkar	Department of Chemistry, Fr. Conceicao Rodrigues College of Engineering, Bandra, Mumbai.
Dr. Indraneel Chatterjee	Technical Consultant
Dr. Bipin Mehta	Retired Professor, Department of Chemistry, University of Mumbai
Mrs. Gomathi Shridhar	Department of Chemistry, V.K. Menon College, Mumbai
Mrs. Elizabeth Joseph	Department of Chemical Engineering, Thadomal Sahani College of Engineering, Bandra, Mumbai.
Dr. Lakshmy Ravishankar	Department of Chemistry, V.G.Vaze College, Mulund, Mumbai.
Dr. P. P. Tekale	Department of Chemistry, G. N. Khalsa College, Matunga, Mumbai.
Professor V. V. Mahajani	Retired Professor, Department of Chemical Engineering, ICT, Mumbai
Dr. Sandeep Sharma	BARC, Mumbai
Dr. P. K. Pujari	BARC, Mumbai
Mrs. Mahalaxmi Nadar	Department of Chemistry, SIES College, Sion, Mumbai.
Dr. Chitra Kamath	Department of Chemistry, K. J. Somaya College, Vidyavihar, Mumbai.
Dr. S. S. Mangaonkar	Department of Chemistry, Mithibai College, Vileparle, Mumbai
Dr. P. A. Sathe	Department of Chemistry, Ramnarain Ruia College, Maunga, Mumbai
Dr. D. Mandal	Materials Science Section, BARC, Mumbai

12. Percentage of classes taken by temporary faculty – programme-wise information

M. Sc. (Chemistry) – 12.5 %

13. Programme-wise Student Teacher Ratio

- a) M. Sc. (Chemistry) – 4:1
b) Ph. D. (Chemistry) – 7:1

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

	Sanctioned	Filled	Actual
Laboratory Assistant	04	04	04
Laboratory Attendant	06	06	06
Tutor (Ad hoc)	--	--	01

15. Research thrust areas as recognized by major funding agencies :

Catalysis, Interfacial chemistry, New methods in organic Chemistry

16. Number of faculty with ongoing projects from

a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Name of Funding agencies	Project Title	Duration	Amount sanctioned (in Rs.)
Professor B. M. Bhanage			
Science & Engineering Research Board (SERB)	Studies in asymmetric catalysis for synthesis of enantiomerically pure amines and alcohols	2012 to 2015	37,00,000
Department of Biotechnology (DBT)	Enzyme immobilization and its application in supercritical carbon dioxide for synthesis of valuable compounds	2012 to 2015	24,00,000
Department of Science and Technology (DST-Nano Mission)	Study of catalytic activity of nanosize metals and metal oxides prepared by novel or conventional routes.	2012 to 2015	166,00,000
Professor Radha Jayaram			

TEQIP	Microwave assisted Bifunctional catalysis for Tandem Reactions	2014 to 2016	17,00,000
Dr. Anant Kapdi			
DST (Inspire Faculty programme)	Application of Palladacyclic Complexes in Synthesis	2012 to 2017	83,00,000
Department of BioTechnology	Synthesis and Cellular Evaluation of Novel Palladacyclic Complexes for Breast Cancer'	2015 to 2018	25,00,000
Alexander von Humboldt Foundation (Germany)	Multi-functional Nucleosides and Nucleotides via Palladium-Mediated Reactions Using Novel Palladacyclic Complexes with Promising Anticancer Activities	2015 to 2018	38,00,000
Dr. Vikay Kumar A.			
Department of Science and Technology (DST)	Organic Synthesis using Recyclable Metal and Carbon Catalysts.	2012 to 2017	35,00,000
Dr. Shraeddha Tiwari			
Department of Science and Technology (DST)	Investigating Reactivity and Selectivity of Organic Reactions in Liposomes as Model Protocells	2013 to 2018	35,00,000
Department of Science and Technology (DST)	Investigating Reactivity and Selectivity of Organic Reactions in Liposomes as Model Microreactors	2014 to 2017	16,98,000
Dr. Kaustubh Joshi			
Department of Science and Technology (DST)	Efficient QM/MM approach for Protein/Ligand Binding Free Energies: finding inhibitors for novel cathepsin K, an Osteoporosis target	2013 to 2018	33,00,000
Department of Science and Technology (DST)	Efficient QM/MM approach for Protein/Ligand Binding Free Energies: finding inhibitors for novel cathepsin K, an Osteoporosis target	2013 to 2016	25,00,000
Dr. Dipanwita Das			
Department of Science and Technology (DST)	Transition metal mediated catalytic two and four electron reduction of O ₂ : synthesis, structure-reactivity correlation and mechanistic insights by trapping intermediates	2013 to 2018	35,00,000

Dr. Sanghamitra Chatterjee			
Department of Science and Technology (DST)	Nanomaterial Based Electrochemical Sensors for Biomedical Applications	2014 to 2019	35,00,000

- a) Number of ongoing projects from national funding agencies - 13
- b) Number of ongoing projects from international funding agencies - 01
- c) Number of faculty with ongoing projects from national funding agencies – 10
- d) Number of faculty with ongoing projects from international funding agencies – 01
- e) Total grants received – **Rs. 6,04,98,000/- only**

17. Inter-institutional collaborative projects and associated grants received – 02

- a) **National collaboration**
- b) **International collaboration**

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

- a) DST – FIST : Rs. 1,60,00,000 sanctioned
- b) UGC SAP: Rs. 1,50,00,000 sanctioned

19. Research facility / centre with

- **State recognition - NA**

- **National recognition:**

The teaching and research endeavours of the Department are continually supported by funding from programmes like DST – FIST and UGC SAP (DRS I and DRS II)

- **International recognition:**

Royal Society of Chemistry Accreditation for M. Sc. (Chemistry) programme

20. Special research laboratories sponsored by / created by industry or corporate bodies: NA

21. Publications: (in the last four years)

- * Number of papers published in peer reviewed journals (national / international)- 230

- * Monographs – Nil

- * Chapters in Books – 16
- * Edited Books – 02
- * Books with ISBN with details of publishers - Nil
- * Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, Dare Database – International Social Sciences Directory, EBSCO host, etc.) – 230
- * Citation Index – range / average: 699 to 5009
- * SNIP – NIL
- * SJR – NIL
- * Impact Factor – range / average: Range – 0.3 to 11.26
- * h-index: 133

22. Details of patents and income generated

Title of patent	Contributors	Details
Method for the synthesis of palladium nanoparticles using solar energy	A.B. Patil, K.M. Deshmukh, A.B. Pandit, B.M. Bhanage	Indian patent: 1842/MUM/2011
Improved process for the electrochemical synthesis of Palladium nanoparticles in ionic liquid as an electrolyte	K. M. Deshmukh, Z. S. Qureshi, K. D. Bhatte, J. M. Nagarkar, K. A. Venkatesan, K. Nagarajan, T. G. Srinivasan, P. R. Vasudeva Rao, B. M. Bhanage	Indian patent: 1978/MUM/2011
Improved Process for nitration of phenol using diluted nitric acid alone as the nitrating agent under sonication	N. S. Nandurkar, M. J. Bhanushali, A.G. Panda, B. M. Bhanage	Indian Patent No. IN 247957, (2011)
An Improved Process for the sulfonation of aromatic compounds using sulfuric acid under sonication	Z. S. Qureshi, K. M. Deshmukh, N. S. Nandurkar, B. M. Bhanage	Indian Patent No. IN 247765, (2011)
An improved method for benimidazole synthesis from 2-haloaniline,	S.R. Lanke, B.M. Bhanage	Indian Patent Appl., 2450/MUM/2013, 2013

dihalomethane and sodium azide in presence of copper complex catalyst		
Solar energy assisted synthesis of zinc oxide nanoflowers	M.A. Bhosale, J.P. Ahire, S.A. Revankar, B.M. Bhanage	Indian Patent Application: 1624/MUM/2015, 2015
Novel amino acid-zinc hydroxide hybrid nanomaterial and process of preparation thereof	M.A. Bhosale, J.P. Ahire, B.M. Bhanage	Indian Patent Application: 1623/MUM/2015, 2015
An Efficient Enzyme Catalyzed Methodology for Synthesis of Levulinate Esters Using Lipase and Supercritical Carbon Dioxide as a Green Biocatalyst and Solvent	K.C. Badgujar, B.M. Bhanage	Indian Patent Application: 3244/MUM/2014, 2014
Tetrazolinohydrazino pyrazolin-5-one, useful antibacterial molecule	Tiwari S., Pednekar, S., Kapdi, A. R.	Patent filed PCT. IND 2012
An improved method for the synthesis of azobenzene from nitrobenzene and sodium hydroxide	Sitaram H. Gund, Jayashree M. Nagarkar	Indian Patent Appl.,1421/MUM/2014, 2014
A simple, green oxidation of sulfide to sulphoxide compounds	Ravindra Wagh, J. M. Nagarkar	Indian 2708/MUM/2015

Income generated from patents: --

23. Areas of consultancy and income generated

The Department offers industrial consultancy in the areas of catalysis and organic synthesis.

The income generated in the last four years – Rs. 15,55,493/

24. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

- Dr. Anant Kapdi selected for Alexander von Humboldt Return Fellowship (25th May 2013 to 25th July 2013) – Catalysis Research Centre, Technische Universitat Munchen, Germany
- Dr. Anant Kapdi - DAAD Fellowship for Scientists (2nd June 2014 to 15th July 2013) –Catalysis Research Centre, Technische Universitat Munchen, Germany

25. Faculty serving in

- a) **National committees** b) **International committees** c) **Editorial Boards** d) **any other (please specify)**

Prof. B. M. Bhanage	Hon. Secretary , Catalysis Society of India (Mumbai Chapter)
	Member, Scientific Advisory Board, Indian Patent Office
	Resource Person, Maharashtra Public Service Commission
	Examiner and Resource Person to Indian Chemistry Olympiad Since 2004
	Resource Person: Maharashtra State Bureau of Textbook Production and Curriculum
	Member, Editorial Advisory Board for The Open Acoustics Journal since 2007
	Member, Editorial Advisory Board for The Open Catalysis Journal, since 2008
	Member, Editorial Board, Catalysis Science & Technology (Royal Society of Chemistry Journal)
Prof. S. D, Samant	Member, Academic Audit Committee, Department of Chemistry, Goa University
	Member, Governing Council, Atomic Energy Education Society (AEES)
	Member, Paper Setting Committee, NEST
	Member, Internal Quality Assurance Cell, Ruia College
	Member, Syllabus committee, M. Sc. (Chemistry) programme, Centre for Excellence in Basic Science, University of Mumbai-DAE
	Member, Review committee, Chemistry Division, BARC (20 th March 2015)
	UGC Nominee, UGC-SAP-DRS-II, Department of Chemistry, Goa University, Goa and School of Chemical Sciences, North Maharashtra University, Jalgaon
	Member, Syllabus Committee, M. Sc., Part-I (Organic Chemistry), University of Mumbai
	Member, Governing Council, Atomic Energy Education Society
	Member, National Steering Committee, Science and Mathematics Olympiad
	Member, Board of Studies, Chemical Sciences, NMIMS University
	Member, Moderation Board, Indian National Chemistry Olympiad Examination, 2011 (INChO-2011) on Undergraduate Science
	Resource Person, Orientation-cum-Selection camp for International Chemistry Olympiad, HBCSE, May 2011
	Member, Panel of Juries, Best Chemistry Teachers Award of Tata Chemicals
Prof. R. V. Jayaram	Fellow - Maharashtra Academy of Science
	Office bearer – Catalysis Society of India, Mumbai chapter
	Member – Precious Metals Committee, Indian Bureau of Standards Exam
	Faculty member – NIUS programme, HBCSE, Mumbai
	Member, Board of Examiners, Indian National Chemistry Olympiad

	(INChO)
	Resource person- Orientation-cum-Selection Camp – Indian Team of International Chemistry Olympiad

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Organization by Department:

- ❖ Teaching Learning Workshop – Convenor – Prof. S. D. Samant , March 2014
Participation by Faculty Members of the Department:
- ❖ Resource Generation Workshop organized by HBCSE in September 2013
- ❖ Capacity Building Training Workshop through TEQIP
- ❖ Workshop on NBA accreditation, VJTI, Mumbai

27. Student projects

- **percentage of students who have done in-house projects including inter-departmental projects – 100 %**
- **percentage of students doing projects in collaboration with other universities / industry / institute – As per the programme guidelines, all M. Sc. students do in – house projects. Approximately 5 – 10 % of PhD students carry out collaborative research with other institutes**

28. Awards / recognitions received at the national and international level by

- **Faculty**

Prof. B. M. Bhanage	Fellow of the Royal Society of Chemistry, UK (FRSC)
	Prof. M.M. Sharma Science and Technology Award (Rs 1 lakh and Citation) for contributions in research by Marathi Vidyan Parishad
	Selected on Advisory Board on the RSC Journal “Catalysis Science and Technology
	Awarded Bronze Medal for the contribution in the field of Chemical Sciences by Chemical Research Society of India (CRSI) on 5th Feb 2012 in RSC-CRSI symposium Trivandrum Kerala
	ISCMA Outstanding Professor Award by Indian Speciality Chemical Manufacturers Association for excellence in academic field for the year 2012.
Prof. R V Jayaram	Best Woman Teacher Award (2015) – Association of Chemistry Teachers, India
	Resource person, Orientation-cum-Selection Camp for selecting Indian team for International Chemistry Olympiad
	Team Leader – 43 rd International Chemistry Olympiad
Prof. S. D. Samant	President, Association of Chemistry Teachers (2013 – 2016)
Dr. J. M. Nagarkar	Fellow of Maharashtra Academy of Sciences (F.MASc.)
	Received “Expert Featured Research Article Honorarium” of \$ 500 for an article entitled “Properties of vegetal oil based creams in skin care” the article was published in Cosmetics and Toiletries

Dr. Anant Kapdi	Biography selected in Marquis Who's Who in the World, 2014
	DAAD Fellowship for Scientists (2nd June 2014 to 15th July 2014) - with Professor Moniek Tromp in Catalysis Research Centre, Technische Universitat Munchen, Germany.
Dr. Vijay Kumar	Biography selected in Marquis Who's Who in the World, 2015
	Israeli Science Foundation (ISF) Postdoctoral Fellowship at BenGurion University of Negev.2011.
	Sri Gopala Kishan Vepachedu Memorial Best Senior Research Fellow Award for outstanding publications at IICT, Hyderabad, 2011

• **Doctoral / post doctoral fellows**

Name	Year	Award
Deepak Kurhe	2014-15	First prize in Oral presentation in Advancement in Material Science (AMS 2014) at Coimbatore
Jeevan Bhojane	2014-15	First prize in Oral presentation in CONCHEM 2014, Ruparel College
Manohar A. Bhosale	2014-15	First prize in Oral presentation in National conference on "Nanoscience- A Science of 21 st Century" (NSTFC- 2014)" at Mahatma Phule College, Panvel, Mumbai
Kishor Dhake	2013-14	Best Thesis Award by ICT in Third Convocation
Ganesh More	2013-14	Second prize in poster presentation in association by ICT RSC Research Poster Competition – 2014.
Sujit Chavan	2013-14	First prize "National Symposium on Current Trends in Chemical and Nano Sciences"-2014 (CTCNS- 2014) organised by SHIVAJI UNIVERSITY, KOLHAPUR
Aniruddha B Patil	2013-14	ICC Young Scientist Award in Organic Chemistry-2013 by Indian Council Of Chemist, Bangalore
Kirtiikumar C. Badgujar	2013-14	First prize in Oral presentation in CATSCHOL-2014 which was conducted in association with the CATALYSIS SOCIETY OF INDIA & the Royal Society of Chemistry at ICT, Mumbai
Mahesh Edake	2013-14	Awarded Canadian Commonwealth fellowship for postdoctoral research at Montreal, Canada in the year 2014
Satish Lanke	2012-13	1st Prize in Poster Competition in 50th Annual convection of Chemists by Indian Chemical Society Kolkatta at University of Punjab, Chandigarh, 2013
Rahul Watile	2012-13	Awarded Guest fellowship (Swedish Academic Exchange Service) 2012 for Doctoral research at Uppasala University, Sweden.
Aniruddha Patil	2012-13	Awarded Bayer fellowship (Germany) 2012 for Doctoral research at Chem Cat centre RWTH Achen University, Germany.
Mahesh Edake	2012-13	Awarded Canadian commonwealth fellowship for doctoral research at Montreal, Canada in the year 2012. Awarded with a special grant from Ecole de Polytechnique, Montreal, Canada to carry out research on biodiesel production.

		Awarded with travel grant from Department of Biotechnology, Govt. of India for attended conference at Italy
Anand Burange	2012-13	Won first prize for quiz competition based on catalysis at 21st National Symposium on Catalysis for Sustainable Development (CATSYMP-21) at IICT, Hyderabad.
Rupesh Gaikwad	2012-13	Awarded "Bombay Technologist Best Post Graduate Student Award" for the year 2012-13 at Institute of Chemical Technology (Formerly UDCT), Mumbai, India.
Datta Bagal	2012-13	Awarded DAAD Fellowship for collaborative research work with Prof. Oliver Reiser at Regensburg University: June 2012 Awarded "International Quality Network- Medicinal Chemistry fellowship" at Regensburg University, Germany: September 2013
Rahul Watile	2012-13	Awarded Guest Scholarship (Swedish Institute fellowship) for collaborative research work with Prof. Joseph S. M. Samec, at Department of Biochemistry and Organic Chemistry, Uppsala University, Uppsala, Sweden, for the period of one year from Sep-2012 to Aug-2013
Satish Lanke	2012-13	Awarded Young Scientist Award, 2012 in 31st annual conference of Indian Council of Chemist held at Saurashtra University, Gujarat.
Kishore Dhake	2011-12	Common Wealth Fellowship for collaborative work with University of Saskatchewan, Toronto, Canada
Dattatraya Bagal	2011-12	Awarded DAAD fellowship (German Academic Exchange Service) 2012 for Doctoral research at Regensburg University, Germany 'Indian Chemical Society's Young Scientist Award 2011 at "48th Annual Convention of Chemists and Celebration of the International Year of Chemistry', University of Allahabad Selected for participating in "FOURTH SCIENCE CONCLAVE-An Interaction with Nobel Laureates"
Mayur Khedkar	2011-12	RSC-PTG Award –2011, during his poster presentation at "15 th Indian Society of Chemists & Biologists International Conference", Saurashtra University, Rajkot, India
Rupesh Gaikwad	2011-12	Elected as a "Member of International Youth Nuclear Congress, Grant Committee" for the conference held at Charlotte, North America
Kedar Kumthekar	2011-12	Received "Expert Featured Research Article Honorarium" for article entitled "Properties of vegetal oil based creams in skin care" published in Cosmetics and Toiletries October 2011 Issue 702, 704-706, 708
Sandeep Agawane	2011-12	Prof. P. Sengupta Memorial Young Scientist award in oral presentation, Organic Chemistry Section in National Conference "48th Convention of Chemists 2011" organized by Indian Chemical Society at University of Allahbad
Kailas Sanap	2011-12	Dr B N Mankad Award (Young Scientist Award) at 48 th Annual Convention of Chemist in December 2011 at Allahabad university organised by ICS

• **Students**

Name	Year	Award
Vikrant Yelve, Vidhi Shah, Pritam Kamble, Amruta Karbelkar, Neelam Tiwari & Shilpa Mehendale	2011-12	Late Prof. A. P. Rao Inter collegiate Rolling Trophy from Ramnarain Ruia College
Shailesh Kannoja, Bhaskar Gautam	2011-12	1 st prize in YICC for Ion-Exchange
Vaibhav Sable, Prerna Lokhande and Sayli Hazare	2011-12	2 nd prize in YICC for Indofil
Vijesh Vyas, Neelam Tiwari	2011-12	3 rd prize in YICC for Jaydev chemical Industries

29. Seminars/ Conferences / Workshops organized and the source of funding (national / international) with details of outstanding participants, if any

Title	Date	Source of Funding
Chem Careers 2015	August 2015	Royal Society of Chemistry
Laboratory Safety Workshop for Ph.D. Students	4 th September, 2014	Centre of Excellence in Process Intensification & Department of Chemistry
Workshop on “Applications of Electrochemistry in Photo Voltaic Devices, Nanotechnology and Energy Research”	16 th March, 2015	Metrohm Inc.
CONTECH 2014	18 th January, 2014	Association of Chemistry Teachers (ACT)
NET/SET Orientation Workshop	25 th and 26 th February, 2014	TEQIP II
CATSCHOL	4 th March, 2014	Catalysis Society of India and ICT
Laboratory Safety Workshops For Ph.D. Students	18 th and 19 th March, 2014	Technical Education Quality Improvement Program – Phase II (TEQIP – II)
Teaching Learning Workshop	28 th and 29 th March, 2014	TEQIP – II
One day Indo-Japan conference on "Catalysis -A Green Chemistry Approach"	13 th February, 2013	TEQIP-II
Indo-German conference "Green Catalysis for Sustainable Development"	29 th to 31 st October, 2012	Department of Science and Technology, India, and Federal Ministry of Education and

		Research, Germany.
Laboratory Safety Workshops for laboratory staff and Ph.D. Students	20-21 March, 2013	TEQIP
Laboratory safety Workshop for Laboratory Staff	19 th March, 2013	TEQIP
NET/SET Orientation workshop	9 th and 10 th May, 2013	TEQIP
Workshop on “Green and Sustainable Technology” and SERB Task Force Meeting on Green Chemistry	11 th May, 2013	ICT
Chem Careers India 2012	20 th October, 2012	British Council, Mumbai
CONTECH 2012	1 st December, 2012	Association of Chemistry Teachers (ACT)

30. Code of ethics for research followed by the departments

The Institute has a set Code of Conduct for research and the Department follows the same.

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M. Sc. (Chemistry) (last four years)	764	52	52	95%	92%
Ph. D. (last four years)	952	86	11	NA	NA

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of Students from the Same University	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M. Sc. (Chemistry)	NA	95%	5%	0 %
Ph. D. (Chemistry) Ongoing	5%	94.5%	<1%	0%

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details

category-wise.

Number of students who passed NET JRF examination	03
Number of students who passed NET LS examination	07
Number of students who passed GATE examination	05

34. Student progression

Student progression	Percentage against enrolled
UG to PG	NA
PG to M.Phil.	NA
PG to Ph.D.	25%
Ph.D. to Post-Doctoral	5 to 10 %
Employed	
<input type="checkbox"/> Campus selection	20%
<input type="checkbox"/> Other than campus recruitment	80%
Entrepreneurs	0%

35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	9 %
from other universities within the State	54%
from universities from other States	28%
from universities outside the country	9%

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: None

37. Present details of departmental infrastructural facilities with regard to

- a) **Library** – students / faculty members of the Department can avail the facilities of the Institute library which is well-equipped with numerous volumes of textbooks,

reference books, journals , digital journals in the subject of chemistry and allied sciences

b) Internet facilities for staff and students –

The institute has wi-fi facility on the campus and the students as well as staff can access the same. Additionally, the Department has well- equipped computational facility for the students

c) Total number of class rooms – Classrooms are common for all the courses in the Institute

d) Class rooms with ICT facility – All classrooms are equipped with adequate multimedia facilities and biometric attendance monitoring system

e) Students' laboratories – Three laboratories for undergraduate / M. Sc. Students

f) Research laboratories – The Department has five research laboratories and three instrumentation laboratories (for common instrumentation facilities)

38. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university – NA

b) from other institutions/universities – 01

39. Number of post graduate students getting financial assistance from the university.

At present, the Institute (a deemed university) does not provide any financial assistance to the students enrolled for the M. Sc. Course of the Department.

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Yes. The Departmental committee made several deliberations. Experts from within the Institute and from other reputed Institutes were consulted. A syllabus committee comprising of faculty members of the Department and external experts was constituted to frame the syllabus.

41. Does the department obtain feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does

the department utilize the feedback?

Yes. The feedback from the faculty members is taken by the Head of the Department and discussed in the Department meetings. Suitable changes are made in the teaching and evaluation accordingly.

b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Yes, the Head of the Department takes feedback from the MSc students at the end of each semester. Besides this, some of the faculty members also obtain feedback from the students for their individual courses.

The Institute has devised a centralised online feedback system for all the courses

c. Alumni and employers on the programmes offered and how does the department utilize the feedback?

Not formally. However, the Head of the Department and the faculty members have constant interaction with the alumni and their feedback is taken into account.

42. List the distinguished alumni of the Department

Dr. K. N. Venkatesh

Dr. Shashank Potnis

Dr. R. A. Desai

Dr. V. B. Randive

Dr. V. S. Nadkarni

Dr. Lalit Salgaonkar

Dr. Satish Pai

Dr. Rajesh Salkar

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

The Department undertakes various activities as part of student enrichment programmes which include:

❖ Endowment lectures (annually)

Spinco Biotech Ramanathan lectures

G. D. Gokhale Endowment lectures

Golden Jubilee Endowment lectures

CMP Endowment lectures

B. D. Tilak Visiting Fellowship

Dai-ichi Karkaria Visiting Fellowship

Dharamsi Morarji Visiting Fellowship

❖ Laboratory Safety Workshop

44. List the teaching methods adopted by the faculty for different programmes.

- Use of multimedia
- Self learning through assignments and seminars
- Innovative teaching methods such as POGIL – Process Oriented Guided Inquiry Learning

45. How does the Department ensure that programme objectives are constantly met and learning outcomes are monitored?

- 1) We have a system of continuous assessment under which a series of tests, assignments, quizzes are arranged throughout the semester to monitor the progress of our students and teaching. There is also one formal mid-semester examination. The weightage of continuous assessment in the total marks is 20%, while that of the mid-semester exam is 30% and the end semester exam is 50%.
- 2) We ensure advice from external experts by appointing them as visiting faculty
- 3) We regularly organize endowment lectures and lectures by experts
- 4) Students are encouraged to participate in co-curricular activities within and outside the institute
- 5) Activities like Rasaynam and CONTECH are organized to boost student involvement

46. Highlight the participation of students and faculty in extension activities.

- 1) Students of M. Sc. programme actively participate in VORTEX – a technical festival organized by ICT. They also take part in other inter-collegiate events and competitions.
- 2) Organising Safety workshop for laboratory staff
- 3) Chemistry Olympiad
- 4) NIUS

- 5) Marathi Vigyan Peeth
- 6) Summer research programme of INSA
- 7) Resource persons for Refresher courses, lectures / lecture series delivered at other educational institutes

47. Give details of “beyond syllabus scholarly activities” of the department.

The faculty members of the Department are actively involved in various research activities like guiding Ph.D. students, industrial consultancy, executing sponsored projects and writing books and research papers. In addition, they contribute to the activities of other Departments / Universities as members of Ph. D. thesis evaluation and syllabus review committees. Most of the faculty members of the Department have delivered invited lectures in conferences / seminars / workshops. They are regular resource persons for refresher courses conducted for college teachers.

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Yes. The M. Sc. programme of the Department has been accredited by the Royal Society of Chemistry in 2014.

49. Briefly highlight the contributions of the Department in generating new knowledge, basic or applied.

The basic and applied knowledge generated through research activities is regularly published as journal articles, reviews and books. Some of the research outcome has also been patented. In addition, the members of the Department carry out industrial consultancy where they apply the knowledge to solve the real world problems faced by the industry.

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

STRENGTHS:

- ❖ Substantial academic contribution by the Department towards conducting theory as well as practical courses for the under-graduate Programmes of all the three branches, viz., B. Chem. Engg., B. Tech., and B. Pharm. Sci.
- ❖ High diversity among the present faculty members regard to research interests and

area of expertise.

- ❖ Numerous analytical facilities for common use such as Infrared and UV Vis spectrophotometers, Gas chromatographs, High Performance Liquid Chromatograph unit, Zetameter, Viscometer, ovens and furnaces
- ❖ UGC SAP and DST FIST sponsored research funding for the next five years
- ❖ RSC accredited MSc programme of the Department has been highly appreciated by experts and the students
- ❖ The faculty members are actively engaged in several extra-mural academic activities, like the Indian National Chemistry Olympiad, National Initiative for Undergraduate Research, INSA summer research projects. They are also committee/board members of several academic bodies.

WEAKNESSES:

- ❖ The space available for under-graduate classes is not adequate, though the Department somehow manages the problem presently.
- ❖ Few faculty positions are vacant for a long time.
- ❖ The Department functions from three different locations of the Institute. This makes communication, supervision, interaction, and control difficult.
- ❖ The laboratories are not fully modernized and a thorough revamping is essential.
- ❖ Secretarial assistance is not available. As a result, the faculty members spend lot of time on administrative and documentation work.

OPPORTUNITIES:

- ❖ The Department gets a good number of applications for Ph.D. admission. Thus, there is no dearth of research manpower and new research areas can be initiated and sustained.
- ❖ The vacant faculty positions can be filled with scientists/adjunct faculty on suitable terms and conditions.
- ❖ A network can be made of the research students who had passed out of the

Department who are placed in various research/academic organizations. This will help in conducting research of academic, industrial and social relevance.

- ❖ The Department has the opportunity to identify promising under-graduate students and hence can carry out minor, exploratory research projects through them. This can be a co-curricular activity which will also help the under-graduate students in getting a good placement or scholarship.
- ❖ The Department can increase the intake of M. Sc. programme. In future, integrated programmes can be initiated.

CHALLENGES:

- ❖ Permanent faculty positions are vacant for a very long time. If these positions are not filled soon, the quantity and quality of the output of the Department is bound to go down.
- ❖ The quality of the Ph.D. applicants is not high.
- ❖ The increase in the in-take of the under-graduate classes has gone beyond threshold.

51. Future plans of the Department.

Research Plan:

- ❖ To expand the current research expertise by incorporating expertise from various contemporary areas of research such as nanoscience, bioorganic chemistry, materials chemistry, computational chemistry, theoretical chemistry
- ❖ To develop research facilities to meet international standards with respect to analytical facilities, lab facilities, etc
- ❖ To enrol quality students for PhD and train them rigorously through course work and research
- ❖ To undertake research problems of industrial relevance
- ❖ To introduce, develop and nurture the culture of commercialization of research and documenting the work as patents

Academic Plan:

- ❖ Develop the M.Sc programme further in terms of quality and make it on par with the international standards.

- ❖ Increase the intake of M. Sc. students
- ❖ Provide the students excellent laboratory, computational, research and instrumental facilities
- ❖ Make online resources available to the students
- ❖ Collaborate with reputed Universities and institutions to improve the academic standards
- ❖ Provide opportunities to the students to work in reputed institutes as interns

Outreach Plan:

- ❖ Involve, individually and collectively, in worthy national academic programmes like Chemistry Olympiad, NIUS, teachers' training, KVPY, etc.
- ❖ Contribute to reputed academic professional bodies and NGOs like, Indian Chemical Society, Association of Chemistry Teachers, RSC, Marathi Vidnyan Parishad, etc.
- ❖ Develop chemistry education related programmes

Dyestuff Technology Department

The Department of Dyestuff Technology was established in 1944 under the stewardship of Prof. K. Venkataraman, the then director of Institute of Chemical Technology (ICT, then known as UDCT), University of Mumbai. Under the successive leadership of highly experienced, talented and hard-working scientists and scholars such as Prof. B. D. Tilak, Prof. S. V. Sunthakar, Prof. S. Seshadri, Prof. D. W. Rangnekar, Prof. V. R. Kanetkar, Prof. P. M. Bhate and Prof. N. Sekar, the department has trained more than 1000 undergraduate students and over 450 postgraduate students.

Prof. K. Venkataraman did pioneering work in synthetic dyestuff chemistry, natural colorants, structural elucidation and spectral studies. His volumes on “The Chemistry of Synthetic Dyes” are still widely read and treated as the bible for dyestuff chemists and technologists worldwide. These have been translated into more than 14 languages.

Prof. B. D. Tilak worked extensively in the field of anthraquinone and naphthaquinone vat dyes, and on azide chemistry. Prof. S. V. Sunthakar investigated the chemistry of steroids, pesticides and silicon compounds in addition to exploring dyestuff chemistry. The contribution of Prof. S. Seshadri to Vielsmeier-Haack reaction and coumarin chemistry is very well recognized. Prof. D. W. Rangnekar published widely in the area of heterocyclic chemistry and was instrumental in initiating BRNS-BARC sponsored projects on the synthesis of laser dyes and solid state lasers. These projects, which became vital for the country post Pokhran-II, were successfully executed and completed by Prof. V. R. Kanetkar, who also modernized and refurbished the DRL (Dyes Research Laboratory). The outstanding research work (reported over 1000 publications) carried out by these stalwarts has created a permanent impact on dyestuff and allied industries, globally and locally. Presently Dr. G. S. Shankarling, Prof. P. M. Bhate, Prof. N. Sekar, Dr. S. Some and Dr. S. Sahahave been working in tandem to bring glory and glitter to the Department of Dyestuff Technology.

The Department is a unique center of learning that offers an advanced curriculum in tune with the latest industrial and academic developments. Not only it has produced a new generation of talented color technologists and bright researchers, but also led to an effective industry-academia relationship. The B. Tech course in Dyestuff Technology emphasizes the chemistry, technology and engineering of organic

intermediates and colorants. The student leaves the Institute equipped with a working knowledge of laboratory synthesis, scaling up skills, key manufacturing processes and analytical techniques.

Research Trends in the Department

Currently, the Department has a strong research program in the area of functional colorants for biological sensors, security applications, lasers, optical storage devices, solar devices, electronics, radiation heat insulating glass windows, synthesis of colorants using green methods, Nanotechnology, perfumes and flavor technology, carbohydrate chemistry and computational chemistry. The department is also very active in the field of green chemistry, namely the synthesis and applications of Ionic Liquids and Deep Eutectic Solvents (DES) for industrial applications

In addition, the Department undertakes research in the emerging applications of conventional colorants including high performance pigments, dyes for ink-jet printing, security colors and colorants for contact lenses. Research in conventional dyestuff chemistry (reactive and vats) and synthetic organic chemistry is also carried out. The Department currently has about 80 undergraduate and 60 research students.

In keeping with the tradition of the Institute, the Department maintains close ties with the Indian as well as International Colorants and Chemical industry by way of consulting assignments. In recent times, its reach has truly become global. The Department has also collaborated with CSIR laboratories, Universities from India and abroad.

About the Major Research Facilities

The Department is equipped with a functional organic synthesis laboratory. Facilities include:

500 MHz NMR instrument	FT-IR Instrument
Flash chromatography	Oven
Autoclaves, Hastelloy – 300 mL, 1 lit	Autoclaves, SS 316 – 3 x 600 mL, 5 lit
Parr hydrogenators – 300 mL, 600 mL	Pressure reactor
Incubator	Lyophilizer / Freeze dryer
Ice-Machine	Rotary evaporator

Events organized by Dyes Department

The Department of Dyestuff Technology organizes conferences, seminar and guest lectures every year in order to bridge the gap between industries and academia. The purpose of arranging such co –curricular activities enhances the exposure of the dyes and dyestuff manufacturing community to undergraduate and graduate students.

Dyes Department jointly organizes the International conference- “Convention on Colorants (COC)” biannually with DMAI (Dyestuff Manufacturers Association of India). The aim of the convention is to enhance cooperation between industry and academia. In the past five years three such conferences were organized namely COC 2011, COC 2013, COC 2015.

Every year the department organizes a National Conference named “National Symposium on Functional Application of Colorants” (NSFAC). The main focus is on high technology applications of colorants other than textiles and conventional uses. Till 2015 five such symposia were organized by the department.

In 2016, the department has started with a new concept of having an international symposium on ionic liquids to put forth a greener aspect of the chemistry to the world. On 21st and 22nd January 2016 ,the department had organized the International Symposium on Ionic Liquids (ISOIL 2016) in collaboration with Reliance industries Ltd. The focus was given on industrial applications of ionic liquids.

Apart from these technical events the department has been organizing “Dyes Day” since 2013, where all dyes alumni get chance to meet and have informal and formal discussions with each other. A panel discussion is organized where dyes alumni from industry share their experiences and help undergraduates to understand the current market status of dyes and chemical industries. The event ends with a cultural program where the students, faculty and alumni showcase their talent.

Along with this Department also organizes Memorial lecture series as a tribute to legends of department that includes K.V. Venkatraman lecture Kabbur Memorail lecture series, Dr. KKG Menon lecture etc.

The department ensures a good blend of technology, chemistry, engineering and extracurricular skills.

Photo 1: COC inauguration



Photo 2: COC 2013 and COC 2015



INTERNATIONAL
Convention on Colorants - 2015



The Dyestuffs Manufacturers
Association of India



Department of Chemicals and Petrochemicals,
Government of India



Dyestuff Technology Department
Institute of Chemical Technology

3rd & 4th March 2015, The Club, Andheri, Mumbai



Photo 3: NSFAC



Photo 4: TIDP 2015



Photo 5: ISOIL 2016



PERFUMERY & FLAVOUR TECHNOLOGY

This interdisciplinary course came into existence since 1990. The program was then known as M.Sc(Tech) in Chemical Technology with specialization in Perfumery & Flavour Technology. The Industrial Body- Fragrance and Flavors Association of India (FAFAI) felt the need of technical manpower in this field and requested ICT (then UDCT) director Prof. M.M. Sharma for this course. It was funded by the FAFAI for the first 10 years since the genesis of the course. Other funding agencies include TEQIP, ICEOFF and Dr. R. Y. Mantri fellowship which began in 2015.

The quality of the training imparted to the students is reflected in the progress they are making in their individual careers. M.Tech in Perfumery & Flavour Technology is administered by the Department of Dyestuff Technology. Since this is an interdisciplinary course, faculties from different departments like Department of Food Engineering & Technology, Department of Oils, Oleochemicals & Surfactants Technology, Department of Pharmaceutical Sciences & Technology and Department of Chemical Engineering are involved in this program. Apart from the institute faculty there are many visiting faculties belonging to this industry that are associated with this course. This not only maintains a healthy academia industry interaction but also enlightens the students with opportunities available and the market scenario of this industry.

Doctoral programs in Perfumery & Flavour Technology is also offered by Department of Dyestuff Technology. Currently there are 8 recognized guides for the post graduate programs. There are 13 research fellows (12 M. Tech, 1 Ph. D) presently working on various projects like- green synthesis of perfumery & flavor molecules, extraction of essential oils from aromatic plants, creation of perfumes and flavor formulations, fragrance and flavor modifications- microemulsions & microencapsulation, slow release of perfumery and flavor chemicals, etc.

Under the successive leadership of highly experienced, talented and hard-working scientists and scholars, the program has trained more than 100 postgraduate students.

The program aims at “Empowering the knowledge of perfumery, flavors and cosmetics through learning a cutting-edge technology for the benefit of mankind”.

It will do so by:

- Educating students and professionals in the area of perfumery, flavour, cosmetic technology.
- Serving and upgrading the aroma industry in the form of chemical technology so as to make them competitive in local and global market.

Actively nurturing with close co-operation at National and International levels, with reputed institutions, industries, research and development organizations and universities.

Photo 3: Inauguration of R. Y. Mantri fellowship



1. Year of establishment: 1944

2. Is the Department part of a School/Faculty of the university?

It is a separate department of the institute

3. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)

Ph. D. (Tech.), Integrated PhD (Tech), Ph. D. (Sci.), M.Sc. (Organic chemistry) and B.Tech (Dyestuff Technology) and M.Tech (Dyestuff Technology)

4. Interdisciplinary programmes and departments involved

M.Tech (Perfumery and Flavour Technology) [Department of food engineering and technology, Department of Oils, Oleochemicals and surfactants technology, Department of Chemical Engineering]

M.Tech (Green Technology) [Department of food engineering and technology, Department of Oils, Oleochemicals and surfactants technology, Department of Chemical Engineering]

5. Courses in collaboration with other universities, industries, foreign institutions, etc.

None

6. Details of programmes discontinued, if any, with reasons

None

7. Examination System: Semester

8. Participation of the department in the courses offered by other departments

Various interdisciplinary courses with all other departments. Other department's subjects are offered as electives to our students subject to availability and eligibility.

9. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	-	2	-
Associate Professor	-	1	-
Asst. Professor	-	2	-
Others (Visiting Faculty)	-	4	-

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Prof. P.M.Bhate	Ph.D.	Professor	Carbohydrate Chemistry	8	1
Prof. N.Sekar	Ph.D. (Tech)	Professor	Tinctorial Colorants	28	8
Dr.G.S. Shankarling	Ph.D. (Tech)	Associate Professor	Chemistry of Functional Colorants	9	8
Dr.S.Some	Ph.D.	Assistant Professor	Synthesis of graphene derivatives and their functional applications	0	0 (Just Joined)
Dr.S.Saha	Ph.D.	Assistant Professor	Synthetic organic reactions and mechanistic investigations	0	0 (Just Joined)

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Prof. Surendra Kulkarni (Honorary Professor – Dyestuff Technology)
 Vijay Sane (Gharda Chemicals Ltd)
 D.G.Udas (Entrepreneur, Ultra Conserve Ltd.)
 Arun Natu (Consultant in wastewater management)

12. Percentage of classes taken by temporary faculty – programme-wise information

All classes are taken by permanent or visiting faculty

13. Programme-wise Student Teacher Ratio

For B.Tech (Dyes)[All years]- STR 1:14
 For M.Tech (Dyes) [All years]- STR 1:1.4

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual [Total staff {for Dyestuff Technology Department-8}

Name	Designation
H. R. Fegade	Instrument Mechanic
S. B. Sonawane	Senior Lab Assistant
A. M. Patil	Lab Assistant
A. R. Rawool	Lab Assistant
S. B. Magdum	Lab Assistant
Y. S. Chandiwade	Lab Attendant
P. B. Rana	Lab Attendant
P. R. Dalvi	Lab Attendant

15. Research thrust areas as recognized by major funding agencies

Faculty Name	Thrust Areas
Dr. G.S.Shankarling	<ol style="list-style-type: none"> 1) Synthesis of novel perimidine and quinaldine based NIR absorbing squarine dyes and study of their thermal and photophysical properties 2) Synthesis of Azo and anthraquinone dyes. 3) Development and characterization of selective coating for enhancement of radiation absorption of solar receivers. 4) Synthesis and Purification of Spectroscopic grade Cuurbituril[7] for high power aqueous dye laser applications
Prof. P.M.Bhate	<ol style="list-style-type: none"> 1) Intramolecular Diels alder reactions in carbohydrate chemistry 2) Synthesis of Fiber reactive dyes and vat dyes 3) Natural product synthesis
Prof. N.Sekar	<ol style="list-style-type: none"> 1) Stand-off detection of explosives based on immunochemical

	<p>Techniques</p> <p>2) Advanced laser dyes with high quantum yield and high photostability</p> <p>3) Colored fluorescent conducting polymers for photovoltaic applications – feasibility phase</p> <p>4) NIR Fluorescent Colorants for Biological Imaging in biomedical diagnostics</p> <p>5) Synthesis of red emitting coumarin laser colorants</p>
Dr. S.Some	<p>1) Graphene supported chiral reagent</p> <p>2) Tunable laser properties of dye decorated graphene derivatives</p>
Dr. S.Saha	<p>1) Design and Synthesis of D-(pi-A)₂ Type Dyes With Troger's Base Architecture: The Effect Of Molecular Topology On The Performance Of Dye-Sensitized Solar Cells (DSSC)</p> <p>2) Cooperative Organocatalysis for Enantioselective Transformations</p>

16. Number of faculty with ongoing projects from

a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Total amount granted to all faculty :- Rs. 68488200/-

Details of projects and other relevant information given in the table below:-

Sponsor	Title	Duration	Total amount (Rs.)	Principal Investigator	Research Fellows
AICTE-RPS	Synthesis of novel perimidine and quinaldine based NIR absorbing squaraine dyes and study of their thermal and photophysical properties	3 Years	750000/-	Dr. G.S. Shankarling	Sushil khopkar

DAE-BRNS	Development and characterisation of selective coating for enhancement of radiation absorption of solar receivers.	2 Years	1,43,35,000/-	Dr. G.S. Shankarling/ Dr. V.D.Deshpande	Amruta Joglekar
DAE-BRNS	Synthesis and Purification of Spectroscopic grade Cuurbituril[7] for high power aqueous dye laser applications	3 Years	30,44,800 /-	Dr. G.S. Shankarling	Deepak Boraste
Principal Scientific Advisor to GOI	Stand-off detection of explosives based on immunochemical Techniques	3 Years	3,73,26,000	Professor N. Sekar	Dr. Vikas S. Padalkar (Post Doctoral Fellow) Mr. Santosh B. Chemate (Junior Research Fellow)
BRNS	Advanced laser dyes with high quantum yield and high photostability	3 Years	21, 00,000	Professor N. Sekar	Mr. Ankush More (Junior Research Fellow), Mr. Shrikant Thakare (Junior Research Fellow)
DST	Colored fluorescent conducting polymers for photovoltaic applications – feasibility phase	2 Years	10, 94,400	Professor N. Sekar	Mr. Manoj Jadhav (Junior Research Fellow)
AICTE	NIR Fluorescent Colorants for Biological Imaging in biomedical diagnostics	1 Year	19,70,000	Professor N. Sekar	----
UGC	Synthesis of red emitting coumarin laser colorants	3 Years	9, 00,000	Professor N. Sekar	Mr. Abhinav Tathe (Project Assistant)
UGC	Graphene supported	3 Years	6,00,000	Dr. Surajit	----

	chiral reagent			Some	
BRNS	Tunable laser properties of dye decorated graphene derivatives	3 Years	27,78,000	Dr. Surajit Some	Mr. Dattatray Appasha Pethsangave (Junior Research Fellow)
Science and Engineering Board of Research (SERB)	Design and Synthesis of D-(pi-A) ₂ Type Dyes With Troger's Base Architecture: The Effect Of Molecular Topology On The Performance Of Dye-Sensitized Solar Cells (DSSC)	3 Years	29,90,000	Dr. Satyajit Saha	----
UGC-FRP	Cooperative Organocatalysis for Enantioselective Transformations	2 Years	6,00,000	Dr. Satyajit Saha	----

17. Inter-institutional collaborative projects and associated grants received

a) National collaboration

Dr. G. S. Shankarling

- ❖ Dr. Subam Sahoo, SVNIT, Gujarat.
- ❖ Dr. Hirendra Ghosh, BARC, Mumbai.
- ❖ Dr. Alok Ray, Dr. Sandip Nayak, BARC, Mumbai.
- ❖ Dr. Shakti Vinay Shukla, Principle Director, Fragrance and Flavor Development Center (FFDC), Kannauj, U.P

Prof. Dr. N. Sekar

- ❖ Dr.C.R.Suri (IMTech, Chandigarh)
- ❖ Dr. A.K.Paul (CSIO, Chandigarh)
- ❖ Dr. S.Panda (IIT, Kanpur)

b) International collaboration

Dr. G. S. Shankarling

- ❖ Dr. Douglas McFarlane and Dr. Vijay Raghavan, Monash University, Australia.

Prof. Dr. N. Sekar

❖ Dr.P.Ramasawmi (Mauritius University, Mauritius)

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

12 projects in total (Details given in the table above)

Total funding granted – Rs. 68488200/-

19. Research facility / centre with

- state recognition - Nil
- national recognition - Nil
- international recognition - Nil

20. Special research laboratories sponsored by / created by industry or corporate bodies

None

21. Publications:

Details of papers published as given below:-

No.	Title and authors	Journal	Vol. No.	Pages	Year
1.	Synthesis, characterisation, and study of the photophysical properties of highly stable imidazole-based novel solid-state fluorescent azo colourants Preetam N. Moolya, Balu L. Lohar, Ganapati S. Shankarling	Coloration Technology	131	104-109	2015
2.	Aggregation induced emission (AIE) active β -ketoiminate boron complexes: Synthesis, photophysical and electrochemical properties Haribhau S. Kumbhar, Ganapati S. Shankarling	Dyes and Pigment	122	85-93	2015
3.	Synthesis and photophysical study of novel coumarin based styryl dyes AK Sanap, KK Sanap, GS Shankarling	Dyes and Pigments	120	190-199	2015
4.	An “off-on” colorimetric chemosensor for selective detection of Al ³⁺ , Cr ³⁺ and Fe ³⁺ : Its application in molecular logic gate PN Borase, PB Thale, SK Sahoo, GS	Sensors and Actuators B: Chemical	215	451-458	2015

	Shankarling				
5.	Steric hindrance induced regio and chemo selective oxidation of aromatic amine. VV Patil, GS Shankarling	Journal of Organic Chemistry	-	-	2015
6.	Synthesis and spectroscopic study of highly fluorescent β -enaminone based boron complexes HS Kumbhar, BL Gadilohar, GS Shankarling	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	146	80-87	2015
7.	Restriction of Molecular Twisting on a Gold Nanoparticle Surface T Debnath, J Dana, P Maity, H Lobo, GS Shankarling, HN Ghosh	Chemistry-A European Journal	21	5704-5708	2015
8.	Energy efficient, clean and solvent free photochemical benzylic bromination using NBS in concentrated solar radiation (CSR) S Deshpande, B Gadilohar, Y Shinde, D Pinjari, A Pandit, G Shankarling	Solar Energy	113	332-339	2015
9.	Highly efficient and stable peracid for rapid and selective oxidation of aliphatic amines to oximes VV Patil, EM Gayakwad, GS Shankarling	New Journal of Chemistry	39	6677-6682	2015
10.	Maleimide fused boron-fluorine complexes: synthesis, photophysical and electrochemical properties PB Thale, PN Borase, GS Shankarling	Dalton Transactions	-	-	2015
11.	Photophysical and thermal properties of novel solid state fluorescent benzoxazole based styryl dyes from a DFT study UN Yadav, HS Kumbhar, SS Deshpande, SK Sahoo, GS Shankarling	RSC Advances	5	42971-42977	2015
12.	Choline peroxydisulfate oxidizing Bio-TSIL: triple role player in the one-pot synthesis of Betti bases and gem-bisamides from aryl alcohols under solvent-free conditions BL Gadilohar, HS Kumbhar, GS Shankarling	New Journal of Chemistry	-	-	2015
13.	Environmentally benign synthesis of 4-aminoquinoline-2-ones using recyclable choline hydroxide AK Sanap, GS Shankarling	New Journal of Chemistry	39	206-212	2015
14.	A metal free, eco-friendly protocol for the synthesis of 2, 3-dihydro-1H-perimidines using commercially available Amberlyst 15 as a catalyst	Catalysis Communications	57	138-142	2014

	VV Patil, GS Shankarling				
15.	A highly selective fluorescent chemosensor based on thio- β -enaminone analog with a turn-on response for Cu (II) in aqueous media HS Kumbhar, UN Yadav, BL Gadilohar, GS Shankarling	Sensors and Actuators B: Chemical	203	174-180	2014
16.	Choline Peroxydisulfate: Environmentally Friendly Biodegradable Oxidizing TSIL for Selective and Rapid Oxidation of Alcohols BL Gadilohar, HS Kumbhar, GS Shankarling	Industrial & Engineering Chemistry Research	53	19010-19018	2014
17.	In Situ Generated Cetyltrimethylammonium Bisulphate in Choline Chloride–Urea Deep Eutectic Solvent: A Novel Catalytic System for One Pot Synthesis of 1, 3, 4-Oxadiazole PA More, BL Gadilohar, GS Shankarling	Catalysis Letters	144	1393-1398	2014
18.	Synergistic effect of ultrasound and deep eutectic solvent choline chloride–urea as versatile catalyst for rapid synthesis of β -functionalized ketonic derivatives UN Yadav, GS Shankarling	Journal of Molecular Liquids	195	188-193	2014
19.	Quinoline-based chemosensor for fluoride and acetate: A combined experimental and DFT study UN Yadav, P Pant, D Sharma, SK Sahoo, GS Shankarling	Sensors and Actuators B: Chemical	197	73-80	2014
20.	Nonanebis (peroxoic acid): a stable peracid for oxidative bromination of aminoanthracene-9, 10-dione VV Patil, GS Shankarling	Beilstein journal of organic chemistry	10	921-928	2014
21.	Eco-friendly and recyclable media for rapid synthesis of tricyanovinylated aromatics using biocatalyst and deep eutectic solvent AK Sanap, GS Shankarling	Catalysis Communications	49	58-62	2014
22.	Room temperature ionic liquid choline chloride–oxalic acid: A versatile catalyst for acid-catalyzed transformation in organic reactions UN Yadav, GS Shankarling	Journal of Molecular Liquids	191	137-141	2014
23.	Extensive Reduction in Back Electron Transfer in Twisted Intramolecular Charge-Transfer (TICT) Coumarin-Dye-Sensitized TiO ₂ Nanoparticles/Film: A Femtosecond Transient Absorption Study	Chemistry-A European Journal	20	3510-3519	2014

	T Debnath, P Maity, H Lobo, B Singh, GS Shankarling, HN Ghosh				
24.	Spectroscopy and laser characterization of synthesized supramolecular host cucurbit [7] uril using aqueous Rhodamine B dye DR Boraste, M Gupta, G Shankarling, AK Ray, SK Nayak	Pramana	82	271-275	2014
25.	Magnetic nanocatalyst for the synthesis of maleimide and phthalimide derivatives PB Thale, PN Borase, GS Shankarling	RSC Advances	4	59454-59461	2014
26.	A novel colorimetric and fluorogenic chemosensor for selective detection of Cu ²⁺ ions in mixed aqueous media UN Yadav, P Pant, SK Sahoo, GS Shankarling	RSC Advances	4	42647-42653	2014
27.	Choline chloride based eutectic solvents: direct C-3 alkenylation/alkylation of indoles with 1, 3-dicarbonyl compounds AK Sanap, GS Shankarling	RSC Advances	4	34938-34943	2014

28.	N-2-Aryl-1,2,3-Triazoles: A Novel Class of Blue-Green Emitting Fluorophores-Synthesis, Photophysical Properties Study and DFT Computations Vikas S Padalkar, Santosh B Chemate, Sandip K Lanke, Nagaiyan Sekar	Journal of Luminescence 2015	Accepted		
29.	Push-Pull fluorophores with viscosity dependent and aggregation induced emissions insensitive to polarity, Rahul D Telore, Manjaree A Satam, Nagaiyan Sekar	Dyes and Pigments	122	359-367	2015
30.	Study on Synthesis and Fluorescence of Novel Benzofused phenazine π -conjugated skeleton with coumarin and isophoron cores, Amol S.Choudhary, and Nagaiyan Sekar	Journal of Fluorescence	Accepted, in press		2015
31.	Red Emitting Coumarins: Insights of Photophysical Properties with DFT Methods Abhinav B. Tathe, Lydia Rhyman, Ponnadurai Ramasami, Nagaiyan Sekar	Journal of Fluorescence	Accepted, in press		2015
32.	Disperse Styryl and Azo Dyes for Polyester and Nylon Fibre: Synthesis, Optical Properties Having the 1,2,4-triketo Naphthoquinone Skeleton Sharad R. Patil, Amol S. Choudhary, and Nagaiyan Sekar	Fibers and Polymers	19 (5)	1068 – 1074	2015

33.	A new rhodamine based OFF-ON fluorescent chemosensors for selective detection of Hg ²⁺ and Al ³⁺ in aqueous media Santosh Chemate, Nagaiyan Sekar	Sensors & Actuators: B. Chemical	220	1196–1204	2015
34.	Novel pyrromethene dyes with N-ethyl carbazole at the meso position: a comprehensive photophysical, lasing, photostability and TD-DFT study Kishor G. Thorat, Priyadarshani Kamble, Alok K. Ray and Nagaiyan Sekar	Phys. Chem. Chem. Phys	17	17221-17236	2015
35.	Congeners of Pyrromethene-567 Dye: Perspectives from Synthesis, Photophysics, Photostability, Laser, and TD-DFT Theory Kishor G. Thorat, Priyadarshani Kamble, Ramnath Mallah, Alok K. Ray, Nagaiyan Sekar	J. Org. Chem.	80	6152–6164	2015
36.	N-2-Aryl-1,2,3-Triazoles: A Novel Class of Blue Emitting Fluorophores-Synthesis, Photophysical Properties Study and DFT Computations Vikas S. Padalkar, Sandip K. Lanke, Santosh B. Chemate, Nagaiyan Sekar	Journal of Fluorescence	Accepted, in press		2015
37.	Synthesis and combined experimental and computational investigations on spectroscopic and photophysical properties of red emitting 3-styryl coumarins Tathe, A.B., Gupta, V.D., N.Sekar.	Dyes and Pigments	119	49-55	2015
38.	Novel pyrromethene dyes with N-ethyl carbazole at the meso position: a comprehensive photophysical, lasing, photostability and TD-DFT study Thorat, K.G., Kamble, P., Ray, A.K., Sekar, N.	Physical Chemistry Chemical Physics	17(26)	17221-17236	2015
39.	Congeners of pyrromethene-576Dye Perspectives from synthesis, Photophysics, Photostability, Laser & TD-DFT theory Thorat, K.G., Kamble, P., Mallah,R.,Ray, A.K., Sekar, N.	Journal of Organic Chemistry	80(12)	6152-6164	2015

40.	N-2-Aryl-1,2,3-Triazoles: A Novel class of Blue emitting Fluorophores synthesis, Photophysical Properties study & DFT Computations. Padalkar, V.S., Lanke, S.K., Chemate, S.B., Sekar, N.	Journal of Fluorescence	Accepted		2015
41.	Disperse styryl and azo dyes for polyester and nylon fiber, Synthesis, Optical properties having the 1,2,4-triketo naphthoquinone skeleton Patil, S.R., Choudhary, A.S., Sekar, N.	Fibers & Polymers	16(5)	1068-1074	2015
42.	Condensation pigments for pigment printing of cotton-synthesis, Photophysical properties, TD-DFT Studies Choudhary, A.S., Patil, S.R., Sekar, N.	Fibers & Polymers	16(4)	809-818	2015
43.	Novel 6-(1H-benzo[d]imidazole-2-yl)benzo[a]phenazin-5-ol Derivatives with dual emission and large Stokes shift synthesis, photophysical properties and computational studies. Choudhary, A.S., Sekar, N.	Journal of Fluorescence	Accepted, in press		2015
44.	DFT Studies of the photophysical properties of fluorescent and semiconductor polycyclic Benzimidazole derivatives. Warde, U., Rhyman, L., Ramasami, P., Sekar, N.	Journal of Fluorescence	25	685-694	2015
45.	Phenazine fused Benzo coumarins with Negative solvatochromic emission – synthesis, photophysical properties, DFT and TD-DFT studies. Choudhary, A.S., Sekar, N.	Journal of Fluorescence	25	675-684	2015
46.	Photophysical properties of ESIPT inspired fluorescent 2-(2-Hydroxyphenyl)-6-methylimidazo [4,5-f]isindole -5,7(1H,6H)-dione and its derivatives; experimental and DFT based approach. Deshmukh, M.S., Sekar, N.	Spectrochimica Acta – Part A; Molecular and Biomolecular spectroscopy	135	457-465	2015

47.	Chemiluminescence properties of luminol related quinoxaline analogs ; Experimental and DFT based approach to photophysical properties. Deshmukh,M.S.,Sekar,N.	Dyes and Pigments	117	49-60	2015
48.	Environment-sensitive benzoxazole based fluorescein derivatives ; synthesis and application to the design of ON-OFF fluorescent chemosensors for microenvironment. Patil,V.,Padalkar,V.,Sekar,N	Journal of Luminescence	158	243-251	2015
49.	Masking and Demasking Strategies for the BF ₂ -BODIPYs as a Tool for BODIPY Fluorophores Ankush B. More, Soumyaditya Mula, Shrikant Thakare, Nagaiyan Sekar, Alok K. Ray, Subrata Chattopadhyay	J. Org. Chem.,	79 (22)	10981–10987	2014
50.	A combined experimental and TD-DFT investigation of three disperse azo dyes having the nitroterephthalate skeleton Mininath S. Deshmukh, Nagaiyan Sekar,	Dyes and Pigments	103	25-33	2014
51	A comprehensive spectroscopic and computational investigation of intramolecular proton transfer in the excited states of 2-(2'-hydroxyphenyl) benzoxazole and its derivatives, Vikas S.Padalkar, Ponnadurai Ramasami, and Nagaiyan Sekar	J Luminescence	146	527-538	2014
52	Synthesis of novel styryl derivatives from 4-chloro-2-(morpholin-4-yl)-1,3-thiazole-5-carbaldehyde, study of their photophysical properties and TD-DFT computations, Nagaiyan Sekar, Prashant G.Umape, Vikas S.Padalkar, Rajratna P.Tayade, and Ponnadurai Ramasami	J Luminescence	150	8–18	2014

53	Synthesis of novel dipodal-benzimidazole, benzoxazole and benzothiazole from cyanuric chloride: Structural, photophysical and antimicrobial studies, Vikas S. Padalkar, Vinod D. Gupta, Kiran R. Phatangare, Vikas S. Patil, Prashant G. Umape, N. Sekar,	Journal of Saudi Chemical Society	18	262–268	2014
54	Phenazines and Thiazine: Green Synthesis, Photophysical Properties and Dichroic Behavior in Nematic Host Amol S. Choudhary ¹ , Manoj K. Malik ² , Sharad R. Patil ¹ , K. H. Prabhu ³ , Rajendra R. Deshmukh ² , and Nagaiyan Sekar	Canadian Chemical Transactions	4	365-380	2014
55	A Comprehensive Spectroscopic and Computational Investigation of Intramolecular Proton Transfer in the Excited States of 2-(2'-Hydroxyphenyl) Benzoxazole and its Derivatives Vikas Padalkar, Ponnadurai Ramasami, N. Sekar	J of Luminescence	146	527-538	2014
56	Photophysical properties of Schiff's bases from 3-(1,3-benzothiazol-2-yl)-2-hydroxy naphthalene-1-carbaldehyde Manjaree A. Satam, Rahul D. Telore, Nagaiyan Sekar	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	132	678-686	2014
57	Photophysical Properties of ESIPT Inspired Fluorescent 2-(2-hydroxyphenyl)-6-methylimidazo[4,5-f]isoindole-5,7(1H,6H)-dione and its Derivative: Experimental and DFT based approach N. Sekar, Mininath S Deshmukh	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	135	457–465	2014
58	Synthesis of novel styryl derivatives from 4-chloro-2-(morpholin-4-yl)-1,3-thiazole-5-carbaldehyde, Study of their photophysical properties and TD-DFT computations. Nagaiyan Sekar, Prashant G. Umape, Vikas S. Padalkar, Rajratna P. Tayade, Ponnadurai Ramasami	Journal of Luminescence	150	18-Aug	2014

59	A Comprehensive Spectroscopic and Computational Investigation of Intramolecular Proton Transfer in the Excited States of 2-(2'-Hydroxyphenyl) Benzoxazole and its Derivatives Vikas Padalkar, Ponnadurai Ramasami, N. Sekar	J of Luminances	146	527–538	2014
60	Catalyst- and chromatography-free synthesis of pyrrole-substituted indolinone derivatives in water. Nazim A.A. Ahmad, Sunil M. Rokade, Ashok M. Garande, Prakash M. Bhate	Tetrahedron Letters	55	5458-61	2014
61	A facile and practical one-pot synthesis of [1,2,4]triazolo[4,3-a]pyridines. Kamlesh S. Vadagaonkar, Kaliyappan Murugan, Atul C. Chaskar and Prakash M. Bhate	RSC Advances	4	34056-34064	2014
62	Acid- and metal-free synthesis of annulated pyrroles in deep eutectic solvent. Sunil M. Rokade, Ashok M. Garande, Nazim A.A. Ahmad, Prakash M. Bhate	RSC Advances	5	2281 - 2284	2015
63	Ferrier Reaction in deep eutectic solvent. Sunil M. Rokade and Prakash M. Bhate	Carbohydrate Research	415	28-30	2015
64	Phosphorus-doped graphene oxide layer as a highly efficient flame retardant Surajit Some, Iman Shackery, Sun Jun Kim and Seong Chan Jun	Chem. A Euro. J. (Accepted and in press)			2015
65	Efficient Direct Reduction of Graphene Oxide by Silicon Substrate Su Chan Lee, Surajit Some, Sung Wook Kim, Sun Jun Kim, Jungmok Seo, Jooho Lee, Taeyoon Lee, Jong-Hyun Ahn, Heon-Jin Choi & Seong Chan Jun	Sci. Rep.	5	12306-12314	2015
66	Highly Sensitive Enzymeless Glucose Detection by Nickel Hydroxide/3D Graphene- Electrode Iman Shackery, Umarkant Patil, Sachin Kulkarni, Surajit Some, Su chan Lee, Min Sik Nam, Seong Chan Jun	Electroanalysis	27		2015

67	Tunable Wide Blue Emission with Europium-Decorated Graphene Flake Byeongho Park, Ji-eun Park, Surajit Some, Juhwan Lim, Sung-Jin Kim, Seong Chan Jun	J. Mat. Chem. C	3	4030-4038	2015
68	Directing Group Assisted Nucleophilic Substitution Of Propargylic Alcohols Via Ortho Quinone Methide Intermediate- Bronsted Acid Catalyzed Highly Enantioselective Synthesis Of N-Acetamido Alkenyl Tetrahydroxanthenes. A. Satyajit Saha and Christoph Schneider	Org. Lett.	17	648-652	2015
69	Chiral Brønsted Acid-Catalyzed Friedel-Crafts Alkylation of Electron-Rich Arenes with in situ-Generated Ortho-Quinone Methides: Highly Enantioselective Synthesis of Diarylindolylmethanes and Triarylmethanes. B. Satyajit Saha, Santosh Kumar Alamsetti and Christoph Schneider	Chem. Commun	51	1461-1464	2015
70	Brønsted Acid-Catalyzed, Highly Enantioselective Addition of Enamides to in situ-Generated Ortho-Quinone Methides—A Domino Approach Towards the Direct Synthesis of Complex Acetamidotetrahydroxanthenes C. Satyajit Saha and Christoph Schneider	Chem. Eur	21	2348-2352	2015
71	Choline chloride based eutectic solvents: Magical catalytic system for carbon–carbon bond formation in the rapid synthesis of β -hydroxy functionalized derivatives. Balvant S. Singh, Hyacintha R. Lobo, Ganapati S. Shankarling	Catalysis Communications	24	70–74	2012

72	Greener coumarin synthesis by Knoevenagel condensation using biodegradable choline chloride. Sunanda B. Phadtare, Ganapati S. Shankarling	Environmental Chemistry Letter	10	363-368	2012
73	Deep eutectic solvents and glycerol: a simple, environmentally benign and efficient catalyst/reaction media for synthesis of N-aryl phthalimide derivatives Hyacintha R. Lobo, Balvant S. Singh, Ganapati S. Shankarling	Green Chemistry Letters and Reviews	5	487-533	2012
74	Ultrasound and Deep eutectic solvent (DES): A novel blend of techniques for rapid and energy efficient synthesis of oxazoles. Balvant S. Singh, Hyacintha R. Lobo, Deepak V. Pinjari, Krishna J. Jarag, Aniruddha B. Pandit, Ganapati S. Shankarling	Ultrasonics Sonochemistry	20	287-293	2013
75	Thiazole based novel functional colorants: Synthesis, characterization and nonlinear optical studies using picosecond Z-scan technique	Optical Materials	35	962-967	2013
76	Greener protocol for one pot synthesis of coumarin styryl dyes	Dyes and Pigments	97	105-112	2013
77	Comparative material study and synthesis of 4-(4-nitrophenyl)oxazol-2-amine via sonochemical and thermal method	Ultrasonics Sonochemistry	20	633-639	2013
78	Ultrasound-assisted intensification of bio-catalyzed synthesis of mono-N-alkyl aromatic amines	Biochemical Engineering Journal	70	29-34	2013
79	Ultrasound and deep eutectic solvent (DES): A novel blend of techniques for rapid and energy efficient synthesis of oxazoles	Ultrasonics Sonochemistry	20	287-293	2013
80	Environmentally benign and energy efficient methodology for condensation: an interesting facet to the classical Perkin reaction. Poonam M. Pawar, Krishna J. Jarag and Ganapati S. Shankarling	Green Chemistry	13	2130	2011

81	Efficient Synthesis of 2, 3-dihydro-1H-perimidine derivatives using HBOB as a novel solid acid catalyst. Sunanda B. Phadtare ,R. Vijayraghavan , Ganapati S. Shankarling and D. R. MacFarlane	Australian Journal of Chemistry	65	86-90	2011
82	Selective N-Alkylation of aromatic primary amines catalyzed by Bio-catalyst or Deep Eutectic Solvent. Balvant S. Singh, Hyacintha R. Lobo ,Ganapati S. Shankarling	Catalysis Letters	141	178–182	2011
83	The synthesis, photophysical and thermal properties of new anthrapyrimidine colorants. Sreejit R. Menon, Ganapati S. Shankarling	Coloration Technology	127	383-389	2011
84	Choline chloride based eutectic solvents: Magical catalytic system for carbon–carbon bond formation in the rapid synthesis of β -hydroxy functionalized derivatives. Balvant S. Singh, Hyacintha R. Lobo, Ganapati S. Shankarling	Catalysis Communications	24	70–74	2012
85	The synthesis and photo-physical properties of extended styryl fluorescent derivatives of N-ethyl carbazole . Vinod Gupta, Vikas Padalkar, Kiran Phatangare, Vikas Patil, N.Sekar	Dyes and Pigments	88	378-384	2011
86	Synthesis and characterization of novel 2,2'-bipyrimidine fluorescent derivatives for protein binding Vikas Padalkar, Vikas Patil, N.Sekar	Chemistry Central Journal	5	72	2011
87	Synthesis and photo-physical properties of fluorescent 1,3,5 triazine styryl derivatives Vikas Padalkar , Vikas Patil, N.Sekar	Chemistry Central Journal	5	77	2011
88	Synthesis and biological evaluation of novel 6-aryl-2,4-di substituted schiff's base 1,3,5 – triazine derivatives as antimicrobial agents Vikas Padalkar, Phatangare, K.R, Gupta, V.D, Patil V.S, Umape, P.G, Sekar, N.	Research Journal of Pharmaceutical, Biological and Chemical Sciences	2	907-917	2011

BOOK CHAPTER:

Dr. G. S. Shankarling

- Culture of Indigo in Asia, **Dr. G. S. Shankarling**, Niyogi Books, pp. 122-134, New Delhi, 2014
- An article titled ‘Organic Photochromic dyes with commercial values’ by Saurabh Deshpande, **Ganapati Shankarling** has been published in DMAI newsletter in the September issue.
- An article entitled ‘Organic Thermochromic dyes with commercial value’ by Saurabh Deshpande, **Ganapati Shankarling** has been published in DMAI newsletter in the October issue.
- An article entitled ‘Speciality inkjet colorants for LCD display filters’ by Amruta Joglekar, **Ganapati Shankarling** has been published in DMAI newsletter in August issue.
- An article entitled ‘Speciality inkjet colorants for ceramics’ by Amruta Joglekar, **Ganapati Shankarling** has been published in DMAI newsletter in August issue.
- Recent developments in textile dyes, pigments and pollution abatement, **G. S. Shankarling**, Urmila yadav, Glen Gonsalves, Recent Patents on Materials Science, Vol 6, 120-139 (2013)
- Feedstock Available for manufacturing Aroma Chemicals in India, **G. S. Shankarling** Anita Ghuge, Balu Gadilohar, Haribhau Kumbhar , The FAFAI Journal ,Vol XIV No.1 March (2012).

Prof. N. Sekar

- Direct Dyes in Handbook of textile and industrial dyeing (Ed: M Clark), Woodhead Publishing, UK, 2011
- Acid Dyes in Handbook of textile and industrial dyeing (Ed: M Clark), Woodhead Publishing, UK, 2011

H-Index and Citations :

Faculty Name	H-Index	Citations
Dr.G.S.Shankarling	11	524

Prof. P.M.Bhate	4	116
Prof. N.Sekar	12	496
Prof. S.Some	13	449
Prof. S.Saha	7	187

22. Details of patents and income generated

Recent patent details are given in the table below

No.	Inventors	Title	Country	Funding agency
1.	G. S. Shankarling, Yogesh A. Sonawane, Krishna J. Jarag, Poonam M. Pawar, Sunanda Phadtare, Rishad Bumgara, Hyacinta R. Lobo, Balvant S. Singh, Urmila Yadav	A class of quaternary ammonium catalysts	India	
2.	G. S. Shankarling, Krishna J. Jarag	Styryl molecules based on substituted-1,4-diphenethyl-1,2,3,4-tetrahydroquinoxaline-6-carbaldehyde	India	
3.	G. S. Shankarling, Krishna J. Jarag, Dipak V. Pinjari, Aniruddha B. Pandit	Ultrasound assisted process for synthesis of chalcone	India	
4.	Prakash M. Bhate, Rajkumari Vijilata Devi, Shruti Masand, Lisan Shaikh, Samiksha Vaidya, Rajaram Dugane	Novel reactive dye system based on diazonium salts	India	TEQIP (in part)
5.	Surajit Some and Hyoyoung Lee	Optical Fiber Containing Graphene Oxide and Reduced Graphene Oxide, and Method for Manufacturing Gas Sensor Containing The Same.	Unites States	Research & Business Foundation Sungkyunkwan University (KR)
6.	Surajit Some, Youngmin Kim and Hyoyoung Lee	Catalyst for Organic Reaction and Method of Use Thereof	Unites States	Research & Business Foundation Sungkyunkwan University

				(KR)
7.	Prakash Bhate, Sunil Rokade and Kamlesh Vadagaonkar	Preparation of achiral and chiral azo dyes from cyclic enol ehters	India	CSIR

23. Areas of consultancy and income generated

Consultancy details of the faculty are given below:

Sr.No.	Faculty Name	Industry Name	Area
1	Dr. N. Sekar	Megatic Intermediates Pvt. Ltd.	Process Development in Dyestuff Intermediates
		Heubach Colours Ltd	Expert Advice
		Spetrum Dyes Pvt. Ltd	Developments in pigments
2	Dr. G. S. Shankarling	Metropolitan Eximchem Ltd	Process development in Speciality chemicals, Intermediates, Agrochemicals
		Asahi India Glass Ltd	Expert Advice
		Essilor International	Expert Advice
		Reliance India Ltd.	Product Innovation
		Hindustan Unilever Ltd, Mumbai.	Expert Advice
		Jyoti Laboratories, Mumbai	Expert Advice
		Diversey India Pvt Ltd., Mumbai	Expert Advice
Enviro controls Associate Surat.	Expert Advice		

24. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

Prof. N. Sekar was selected and visited to **University of Mauritius** under UGC-TEC Consortium 2011-2012 for the period of 1 months during 4th Jan 2012 to 31st Jan 2012.

25. Faculty serving in

- b) National committees b) International committees c) Editorial Boards d) any other (please specify)

Sr.No.	Faculty Member	Affiliation to Professional Bodies	Membership
Department of Dyestuff Tehnology			
1.	N. Sekar	Indian Chemical Society	Fellow
		Society for the Advancement of Electrochemical Science and Technology	Fellow
		Indian Membrane Society, Fellow of Indian Mathematical Society	Fellow

	Editorial Advisor to Colourage	Colour publications
	SDC, UK	Corporate Member
	The Centre for Physico-Chemical Aspects in Textiles, Fibres, Dyes and Polymers (UGC-SAP).	Co-ordinator
	A team of delegates from India for “Joint Indo-Russia Workshop on Immunoassay for clinical/ environmental monitoring” held at Russia in September 2009.	Expert member
	Appointed by DST, Govt. of India to look into the pollution problems of colorants Industry in Ankleshwar	Expert committee member
	Peer reviewing Committee, Dyes & Pigments (Elsevier)	Member
	Editorial Board, Current Chemistry Letter.	Member
	Colourage, Color Publications	Editorial Advisor
	UDCT Alumni Association	Life member
	Society of Dyers and Colourists, (UK)	Fellow
	Association of Chemical Technologists, India	Fellow
	Institution of Chemical Engineers	Associate member
	Indian Chemical Society	Fellow
	Society for the Advancement of Electrochemical Science and Technology	Fellow
	Indian Membrane Society	Fellow
	Indian Mathematical Society	Fellow
	Board of Studies PG Department of Chemistry AVVMSP college (Bharathidasan University)	Member

	For Ph.D. in Industrial Chemistry (Industrial chemistry Department, Alagappa University) (3 Thesis examined)	Examiner
	For M.Tech. (Textile Technology) on Advanced Dyestuff Chemistry (Textile Technology Department, Anna University).	Examiner (Paper Setter)
	Ph.D. Thesis for Bio-Technology in CFTRI, Mysore, CSIR Laboratory. (one Thesis examined)	Examiner
	Ph. D. Thesis for Physical Chemistry in Madras University.	Examiner
	Ph. D. Thesis for Organic Chemistry in Amritsar University.	Examiner
	Ph. D. Thesis for Inorganic Chemistry in Bharidasan University	Examiner
	Dyes and Pigments, Journal of Fluorescence, Journal of Saudi Chemical Society, Coloration Technology, Pigment and Resin Technology	Reviewer
	From AICTE for accreditation of Engineering Colleges with in India	Expert Member
	UDCT alumni association	Life Member
	UGC-CAS in JNDU University, Amritsar (March 2011 onwards)	Expert member
	COSIST Programme	Deputy Coordinator
	CAS Programme	Departmental Representative
	In-plant Training for T.Y. B. Tech students	Coordinator
	TEQUIP Seminar (Services to	Coordinator

		Society)	
		Student's Feedback committee	Member
		AICTE – Accreditation (of all Courses) Committee	Member
		Teachers Evaluation Committee	Member
		RC Committee Ph.D Chemistry	Member
		RC Committee, Ph.D Green Technology	Member
		RC Committee, Dyes Technology	Member
2.	G. S. Shankarling	Perfumery and Flavor Programme	Administrative Co-ordinator
		Perfumery & Flavor Technology	Placement Officer
		National Kannada Education Society	Trustee
		SDC, India	Trustee
		Association of Color Chemists and Technologists	Life member
		IChE	Life member
		UDCT-Alumina Association	Life member
		Ph.D Thesis evaluator, Sardar Patel University, Gujarat.	Examiner
		Merit-cum-means and Trust scholarship, ICT	Member
		Publication committee (Annual Report, Student diary, ICT diary, and Posters)	Co- Chairperson
		TEQUIP	Department coordinator
3.	P.M.Bhate	SDC, UK	Corporate Member
		Dyes and intermediates, sectional committee	Chairman

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Various workshops were organized under TEQIP for faculty improvement. These details are given in the annual report (2013-14,2014-15)

27. Student projects

- a. percentage of students who have done in-house projects including inter-departmental projects

Overall percentage for research students of dyes department – 85%

b. percentage of students doing projects in collaboration with other universities

1. industry / institute

Overall percentage for research students of dyes department – 15%

28. Awards / recognitions received at the national and international level by

a. Faculty

Prof. N. Sekar was selected and visited to **University of Mauritius** under UGC-TEC Consortium 2011-2012 for the period of 1 months during 4th Jan 2012 to 31st Jan 2012.

b. Doctoral / post doctoral fellows

AWARDS

- **Pranila Thale** and **Pravin Borase** won first prize in poster competition in 6th International Conventional of Colorants conference-2015 held at 'The club', Andheri on 3rd -4th March.
- **Vilas Patil** and **Eknath Gayakwad** won third prize in poster competition in 6th International Convention on Colorants conference 2015 held at 'The Club', Andheri on 3rd-4th March
- **Mrs. Sunanda B. Phadtare**, was awarded with Dr. S. R. Puro Endowment Best Research Publication Prize for the publication in Dyes and Pigment, 2013, Vol 97, 105-112.
- **Mrs. Anita Sanap** and **Yogesh Sonawane** won first prize in poster competition in 5th International Conventional of Colorants conference-2013 held at Gandhinagar, Gujrat on 8th -9th January
- **Dr. Vikas Padalkar** selected and actively participated in **3rd Science Conclave Nobel Laureate Meet** which was organized by IIT-Allahabad, India. 8-14 Dec. 2010.
- **Mr. Vinod Gupta** selected and actively participated in **3rd Science Conclave Nobel Laureate Meet** which was organized by IIT-Allahabad, India. 8-14 Dec. 2010.
- "Shri G. M. Abhayankar Research Presentation Award" was awarded to **Mr. Vikas Padalkar** and **Mr. Vinod Gupta** for the year 2009-10 by ICT, Mumbai.
- **Shri G. M. Abhayankar Research Presentation Award**" was awarded to Mr. Kiran R. Phatangare for the year 2010-11 by ICT, Mumbai.

- **Young Researcher Award** was awarded to **Dr. Vikas Padalkar** 5th *Young Researchers Conference* Organized by Institute of Chemical Technology, Mumbai, 13-14th Jan. 2011.
- **Best Paper Presentation Award**, was awarded to **Dr. Vikas Padalkar** *National Conference on Health and Disease*, Organised by Indian Chemical Society, Mumbai Branch at Mithibai College Mumbai. 17-18 Jan. 2011
- **Best Poster Presentation Award**, was awarded to **Dr. Vikas Padalkar** *National Conferences on Green Chemistry* organized by DAV College Amritsar, Punjab, India, Sept 2011.
- **Mr. Kiran Phatangare** actively participated in *3rd Science Conclave Nobel Laureate Meet* which was organized by IIT-Allahabad, India. 8-14 Dec. 2010.
- **Best Paper Presentation Award**, was awarded to **Dr. Vikas Padalkar** National Conference on recent trends in Nanotechnology, organized by Birala College, Kalyan, Mumbai, March 1-2, 2012.
- **Best Thesis Award**, was awarded to **Dr. Vikas Padalkar** (2010-2011) by Institute of Chemical Technology. 3 March 2012.
- **Mr. Vinod D. Gupta** selected and visited to **University of Mauritius** under UGC-TEC Consortium 2011-2012 for the period of 3 months during 28th November 2011 to 23rd February 2012.
- **Prof. N. Sekar** selected and visited to **University of Mauritius** under UGC-TEC Consortium 2011-2012 for the period of 1 months during 4th Jan 2012 to 31st Jan 2012.
- **Dr. Vikas Padalkar** awarded **Best poster** presentation award in National symposium on functional applications of colorants, Oct 2012, Organised by ICT, Mumbai.
- **Mr. Vinod Gupta** awarded **Best poster** presentation award in National symposium on functional applications of colorants, Oct 2012, Organised by ICT, Mumbai.
- **Mr. Amol Choudhary** awarded **Best poster** presentation award in National symposium on functional applications of colorants, Oct 2012, Organised by ICT, Mumbai.
- “**Shri G. M. Abhayankar Research Presentation Award**” was awarded to **Dr. Vikas Padalkar and Mr. Abhinav Tathe** for the year 2012-13 by ICT, Mumbai.
- **Mr. Ankush More** awarded **Best poster** presentation award in National symposium on functional applications of colorants, Oct 2013, Organised by ICT, Mumbai.

29. Seminars/ Conferences/Workshops organized and the source of funding (national i. international) with details of outstanding participants, if any.

Date	Industry Expert Invited For Guest Lecture	Departmental Coordinator	Objective	Beneficiaries
29 November 2012	Dr. Kamaljit Singh	Dr. N. Sekar	Amazing conjugated molecules : A voyage from color to conduction	All Students
5 Feb 2013	Prof. J.S.Miller	Dr. N. Sekar	Organic based magnets	All Students
15 Feb 2013	Ms. Shanta Venkatesh	Dr. N. Sekar	How to do literature survey	All Students
29 August 2013	Mr.C.Dabke	Dr.N.Sekar	Industry expertise and revolution in dyestuff technology	All students
2 May 2013	Mr.Vilas Sahasrabuddhe	Dr.G.S.Shankarling	Opportunities in marketing	All students
4 Jan 2014	Mr.R.Sabnis	Prof. P.M.Bhate	Industry development and career opportunities for research students	All students
8 April 2015	Mr.Ambady Rajgopalan	Dr.N.Sekar	Design of Experiments	All students
19 June 2015	Mr.Kamaljit Singh	Dr.N.Sekar	Collaborative Chemistry	All students
19 June 2015	Mr.Kamaljit Singh	Dr.N.Sekar	Combating drug resistance	All students

30. Code of ethics for research followed by the departments

The research work, research publications, patents, thesis and any other publication arising out of the research work done by a student in the University shall be subject to the Plagiarism rules of the Institute, Clause 10 of “Code of Ethics and Code of Conduct” for the Faculty Members, and any other rules and regulations of the University pertaining to these.

Clause 10 states that :

All our knowledge has been built up communally. It follows that we must be able to rely on other people; we must be able to trust their word; without which the individual would be helpless to tell the true from false. A critical knowledge of the source of everything we examine is central to our craft. Hence, every researcher has to be very careful about the origin and reliability of his/ her work and must give full and fair recognition to the earlier contributors while publishing any finding. Plagiarism is an academic theft as it diminishes the original idea by fraudulent act. Plagiarism is not

only an offense against the intellectual property rights of the original author but also undermines the authority and credibility of the academic enterprise in totality.

1. **Definition:** Taking over the ideas, findings, methods, interpretation, or text (written words) of another author, and presenting them thereafter as one's own creation without proper acknowledgment to its actual source and with the intention that they be taken as the work of the deceiver, is plagiarism.

2. The teachers and students must scrupulously acknowledge in their own work every intellectual debt for ideas, methods, and expressions in appropriate form. They have an obligation to oppose deception actively in themselves and in others and to question the claims the work makes and the sort of credit it grants to others.

3. The teachers should emphasize the necessity of and ensuring rigorous intellectual honesty in the use of sources and of utter respect for the work of others.

4. The teacher must exercise the greatest care not to use a student's ideas, research, or presentation to his/ her benefit without appropriate acknowledgment.

5. Any case of suspected plagiarism should be brought at once to the attention of the affected parties and to the profession through proper and effective channels. Such a case should be brought to the notice of the Dean (RCRM) for further action.

6. The gravity of a charge of plagiarism, by whomever it is made, must not diminish the diligence exercised in determining whether the accusation is valid.

7. In all cases of plagiarism the most scrupulous procedural fairness must be observed, and penalties must be appropriate to the degree of offense.

8. A teacher will be solely responsible for any plagiarized work authored outward alone or with anybody else, including his/ her own students/ colleagues or collaborators from outside.

31. Student profile programme-wise (For the academic year 2015-16)

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
B.Tech (Dyes)	Addmissions are conducted through DTE	?	?	100%	100%
M.Tech (Dyes)	5	3	1	100%	100%
Ph.D	-	-	-	100%	100%

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
B.Tech (Dyes)				
M.Tech (Dyes)	25%	0%	25%	50%
Ph.D				

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.- Nil

34. Student progression

Student progression	Percentage against enrolled
UG to PG	70%
PG to M.Phil.	N.A
PG to Ph.D.	30%
Ph.D. to Post-Doctoral	10%
Employed <input type="checkbox"/> Campus selection <input type="checkbox"/> Other than campus recruitment	100% Campus selection
Entrepreneurs	10%

35. Diversity of staff

Percentage of Faculty	
Who are graduates from the same university	60%
Who are graduates from other universities in the same state	0%
Who are graduates from another state's university	40%
Who are graduates from a foreign university-	0%

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

None (For permanent faculty Ph.D is mandatory)

37. Present details of departmental infrastructural facilities with regard to

a) Library

The Institute provides all learning resources at central Library and no separate Library is required at the Department level.

b) Internet facilities for staff and students

Internet facility is freely available to student and staff through the IPC (Information processing center). The entire campus of the institute is Wi-Fi enabled and can be accessed by students and staff through a simple registration process

c) Total number of class rooms

Dyes Classrooms

Year	Classroom	Area, m ²	Capacity
All	Lecture Hall 1	21.6	30
All	Lecture Hall 2	21.6	30

Remarks:

1. All the other classrooms of the institute are shared with other programmes and equipped with Multimedia projectors.
2. Sufficient Number of Audio systems and Laptops are available in the Department
3. Department has a conference room (capacity = 40) for seminars, lectures and tutorial sessions.

4. All the classrooms have comfortable benches, air circulation, lighting.

d) Students' laboratories

e) Research laboratories

Additional details regarding laboratories and classrooms equipped with ICT facilities are given in the table below

Sr. No.	Name of the Lab	Available floor area (sq.m)
Dyestuff Technology		
1.	Analytical Lab'L' Shape	72.54
2.	Entire lab First Floor	211.77
3.	Gr. Floor + Instrumentation lab	117.18
4.	Pilot plant house (PPH)	341.12
Oils, Surfactants and Oleochemicals Technology		
5.	Godrej Pilot Plant	89.14
6.	Process Lab	114.97
7.	Tribo-application lab	34.83
8.	Research lab	218.83
9.	Godrej Lab	135.96
10.	DNB Research Lab	183.00
Pharmaceutical Chemistry and Technology		
11.	Physio-Pharmacology	608
12.	Technology of Liquid & topical Laboratory	833
13.	Biochemistry & Microbiology Lab	699
14.	Medicinal Natural Product & Pharmaceutical analysis	608
15.	Pharmaceutical Formulation Technology – II (Old)	833
16.	Pharmaceutical Product Development & Pharmaceutical Analysis (Old) (NUES)	833
17.	Pharm. (Chem.) Technology (NUES) (Old)	833
Food Engineering and Fermentation		
18.	A-289 Processing Lab	1047.77
19.	A-241 Analytical Lab	88.75
20.	Biochem & Micro practical Lab/Lalwani Centre	71.05

*Other departmental labs are accessible to research students

38. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university

Post-doctoral students:

Sr. No.	Post Doctoral Fellow (Beginning with Last name)	Previous Institution	Project Title	Supervisor
1	Dr. Padalkar Vikas Sudam	Institute of Chemical Technology	Stand-off detection of explosives based on Immunochemical techniques	Project Co-ordinator: Prof. G.D. Yadav Principal Investigator: Prof. N. Sekar
2	Deshmukh Mininath Sitaram	Institute of Chemical Technology	Stand-off detection of explosives based on Immunochemical techniques	Project Co-ordinator: Prof. G.D. Yadav Principal Investigator: Prof. N. Sekar

Doctoral Students:

Sr. No.	Research Scholar	Previous Institution	Project	Supervisor
1.	More Priyanka	Institute of Chemical technology, Mumbai.	Utilisation of biocatalyst in organic synthesis	Dr. G.S. Shankarling
2.	Joglekar Amruta	Institute of Chemical Technology, Mumbai	Development and charatcterisation of speciality colorants using conventional and environmentally benign methods.	Dr. G.S. Shankarling
3.	Mande Prashant	Institute of Chemical Technology	Physio-chemical aspects of colourants in perfumery and flavor formulation	Prof. N. Sekar
4.	Prarena Lokhande	Department of Chemistry, ICT, Mumbai	To Be Decided	Prof. N. Sekar
5.	Suvidha Shinde	Department of Textiles and fibre processing and technology department, ICT, Mumbai	Application of fluorescent dyes on textile and leather substrate	Prof. N. Sekar & Prof. R.V. Adivarekar(Co-guide)
6.	Nitesh N Ayare	ICT Mumbai.	Synthesis of fluorescent dyes with high performance.	Prof. N. Sekar
7.	Ramugade Supriya H.	ICT, Mumbai.		Prof. N. Sekar & Prof. R.V. Adivarekar(Co-guide)

b) from other institutions/universities

Doctoral Students

Sr. No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Moolya Preetam	RPG Life Sciences	Synthesis of High performance colorants	Dr. G. S. Shankarling
2.	Vajekar Shailesh	Ruparel College, Mumbai	Study and synthesis of novel colorant for High-tech application	Dr. G. S. Shankarling
3.	Patil Vilas	Technova Imaging System Pvt. Ltd.	Synthesis of Novel Hair colorants and Synthetic Utility of Ionic Liquid.	Dr. G.S. Shankarling
4.	Kumbhar Haribhau	Arch Pharma Labs.	Synthesis of novel heterocyclic colorants for functional applications.	Dr. G.S. Shankarling
5.	Thale Pranila	Ruia college Mumbai.	Carbon dioxide Feedstock and Green methods for organic synthesis.	Dr. G.S. Shankarling
6.	Gadilohar Balu	Acoris Research Ltd. Pune.	Synthetic Utility of Micro emulsions and Green Media	Dr. G.S. Shankarling
7.	Boraste Deepak	Acoris Research Ltd. Pune	Studies in synthesis and application of pyromethene derivative and cucurbitol host molecules	Dr. G.S. Shankarling
8.	Ghorpade Prashant	VMV College, Amravati	Synthesis of novel deep eutectics and study of deep eutectics mixtures for catalytic action in organic synthesis	Dr. G.S. Shankarling
9.	Deshpande Saurabh	USV Ltd.	Design and synthesis of novel heterocycles for high tech applications.	Dr. G.S. Shankarling
10.	Borase Pravin	Aditya Birla science and Tech comp Ltd. Mumbai	Synthesis of novel heterocyclic colorants and supramolecular host for high tech applications.	Dr. G.S. Shankarling
11.	Gayakwad Eknath	Vidyabharti College Amaravati	Green methodologies for synthesis of novel heterocyclic colorants.	Dr. G.S. Shankarling
12.	Kamble Sujit	Evotec India Ltd., India	Green approach in synthesis of heterocyclic compounds and synthesis of novel colorants.	Dr. G.S. Shankarling
13.	Pant Preeti	V,G. Vaze College, Mumbai.	Synthesis of colourants for functional applications and implementation of green principles in organic	Dr. G.S. Shankarling

			reactions.	
14.	Rathi Jyoti	Vidyabharti College Amaravati	Implementation of Chiral Deep Eutectic solvent for selective organic synthesis.	Dr. G.S. Shankarling
15.	Khopkar Sushil	University department Chemistry, Mumbai.	Synthesis, photophysical properties and application of novel squaraines	Dr. G.S. Shankarling
16.	Jachak Mahesh	Centaur Pharmaceuticals Pvt. Ltd	To be decided	Dr. G.S. Shankarling
17.	Patel Khushbu	University department Chemistry, Mumbai.	To be decided	Dr. G.S. Shankarling
18.	Margar Sachin	Abasaheb Garware College, Pune.	Synthesis o Novel Coumarin Derivatives and Colorants Based on Fulvenes	Prof. N. Sekar
19.	Tathe Abhinav	New Art's, Commerce & Science College, Ahmednagar.	Synthesis of red emitting 536luoresc colorants	Prof. N. Sekar
20.	Thorat Kishor	Abasaheb Garware College, Pune.	Synthesis of Novel Fluorescent Organo-Boron and Acridine Derivatives for Biological Applications	Prof. N. Sekar
21.	Telore Rahul	Department of Chemistry, University of Pune.	Synthesis of Near Infrared Absorbing and Emitting Colorants for Biological Applications	Prof. N. Sekar
22.	Jadhav Manoj	KET's V. G. Vaze College. Mulund, Mumbai.	Synthesis of Novel Colorants for Dyes Sensitized Solar Cells	Prof. N. Sekar
23.	Lanke Sandip	B. J. S. College, Wagholi, Pune.	Synthesis of Near-Infrared active fluorescent Colorants for Biological applications	Prof. N. Sekar
24.	Chemate Santosh	B. J. S. College, Wagholi, Pune.	Synthesis of Fluorescent Fused Pyrrole Derivatives for Biological Applications	Prof. N. Sekar
25.	Tayade Rajratna	Shri Shivaji Science College, Amravati	Synthesis and Application of Fluorescent Colorants Containing Phosphonic Acid Residue	Prof. N. Sekar
26.	Patil Sharad	North Maharashtra University, Jalgaon.	Greener Routes for Heterocyclic Intermediate in synthesis of Fluorescent	Prof. N. Sekar

			Colorants.	
27.	Kothavale Shantaram	Abasaheb Garware College, Pune.	Synthesis of Fluorescent Colorants for their Biological Applications	Prof. N. Sekar
28.	Shreykar Milind	KET's V. G. Vaze College. Mulund, Mumbai.	Synthesis of novel red emitting coumarins and ESIPT dyes for functional applications.	Prof. N. Sekar
29.	Thakare Shrikant	Vidyabharti Mahavidyalaya Amaravati	Synthesis of High Performance Fluorescent Colorants with Enhanced Photo physical properties	Prof. N. Sekar
30.	Ghorpade Seema	Shivaji University Kolhapur	Synthesis high performance fluorescent colorants and their biological applications	Prof. N. Sekar
31.	More Ankush	S.S.G.M. College, Kopargon	Design and synthesis of efficient fluorescent dyes with enhanced photophysical properties	Prof. N. Sekar
32.	Kataria Santosh	Ahmednagar College0	Synthesis of fused heterocycles with high hyperpolarisability	Prof. N. Sekar
33.	Borade Nandkumar	New Arts, Science and Commerce College Ahmednagar	Greener methods for the synthesis of fluorescent fused heterocycles	Prof. N. Sekar
34.	Jadhav Siddheshwar	Shivaji University	Synthesis of fused heterocyclic fluorophores with non linear optical properties	Prof. N. Sekar
35.	Warde Umesh	Ahmednagar College	Synthesis of Novel High Performances Functional Colorants	Prof. N. Sekar
36.	Mallah Ramnath	Birala College Kalyan	Synthesis of Highly Fluorescent Fused Heterocyclic Compounds	Prof. N. Sekar
37.	Gawale Yogesh	B.N.N College, Bhiwindi, Thane	Synthesis and photophysical properties of functional molecules	Prof. N. Sekar
38.	Earande Yogesh	S.S.G.M. College, Kopargon	Greener Methods for Synthesis of Heterocyclic Compounds	Prof. N. Sekar
39.	Archana Bhagwat	New Arts, Science and Commerce College Ahmednagar	Synthesis and Photophysical Properties of Polycyclic Fluorescent Compounds	Prof. N. Sekar

40.	Amol Jadhav	Department of Chemistry Shivaji University	Synthesis of High Performance Fluorescent Fused Heterocyclic Systems	Prof. N. Sekar
41.	Kiran Ahavad	Ahmednagar College, Ahmednagar	Synthesis and application of heterocyclic ESIPT molecules	Prof. N. Sekar
42.	Dhanraj Mobiya	Department of Chemistry, Mumbai University	Synthesis of novel fluorescent dyes and their applications	Prof. N. Sekar
43.	Manali Rajashirake	M .S. University, Badoda	Synthesis of high performance colourants for functional application	Prof. N. Sekar
44.	Mayuri Kadam	Department of Chemistry, Mumbai University	Synthesis of novel fused heterocyclic fluorescent compounds and its applications	Prof. N. Sekar
45.	Dinesh Patil	North Maharashtra University, Jalgaon.	Synthesis of novel dyes for DSSC applications	Prof. N. Sekar
46.	Sulochana Bhalekar	Ahmednagar college, Ahmednagar	Synthesis of fluorescent colourants	Prof. N. Sekar
47.	Manish Raikwar	The D.G. Ruparel College	Synthesis of highly fluorescent heterocyclic compounds	Prof. N. Sekar
48.	Mishra Virendra	University Of Mumbai. Kalina.	Synthesis of Fluorescent reactive dyes & their intermediates	Prof. N. Sekar
49.	Yadav Sagar B.S.	University of Mumbai, Kalina.	Synthesis of Heterocyclic Dyes with High performance Fluorescence.	Prof.N.Sekar
50.	Kalmode Hanuman Popat	Nowrosjee Wadia College, Pune	Development of Synthetic Methodologies Leading to Functionalised Chiral Carbocycles, Heterocycles and Imides	Prof. P. M. Bhate
51.	Vadagaonkar Kamlesh Shashikant	H.P.T. Arts and R.Y.K. Science college, Nashik	Studies in Colorants	Prof. P. M. Bhate
52.	Nazim Ahmad Abdul Aleem	Shri Shivaji College of Arts, Commerce & Science College, Akola	Synthesis of Natural Products	Prof. P. M. Bhate
53.	Rokade Sunil Manohar	Ahmednagar College, Ahmednagar	Carbohydrate Chemistry in Deep Eutectic Solvents	Prof. P. M. Bhate

54.	Garande Ashok Malappa	Ahmednagar College, Ahmednagar	Total Synthesis of Natural Products	Prof. P. M. Bhate
55.	Dugane Rajaram Gangaram	Department of Chemistry, Dr.Babasaheb Ambedkar Marathawada Univrsity, Aurngabad	Studies in Chiral synthesis	Prof. P. M. Bhate
56.	Rajkumari Vijilata Devi	Ahmednagar College, Ahmednagar.	Total Synthesis of Natural Products	Prof. P. M. Bhate
57.	Dattatray Appasha Pethsangave	Dr.Babasaheb Ambedkar Marathawada Univrsity, Aurngabad,	Synthesis of grapheme Derivative & their applications	Dr. Surajit Some

39. Number of post graduate students getting financial assistance from the university.

Approx. 50-60%

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

No new program has been started recently.

41. Does the department obtain feedback from

- faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? Yes
- students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? Yes
- alumni and employers on the programmes offered and how does the department utilize the feedback? Yes

(A) **Feedback collected for all courses:** YES

(B) **Specify the feedback collection process:** Electronic. On our intranet, each student has a separate account and fills up feedback for each course at the semester end.

(C) **Percentage of students participating:** 100%

(D) **Specify the feedback analysis process:**

- Feedback form has been prepared after a lot of brain storming which contain 32 questions.
- Feedback is taken electronically and the activity is co-ordinated by Institutional and Departmental co-ordinator.

(3) The collected feedback and compiled and specific comments are identified. These comments are communicated to concerned faculty members by Head of the Department.

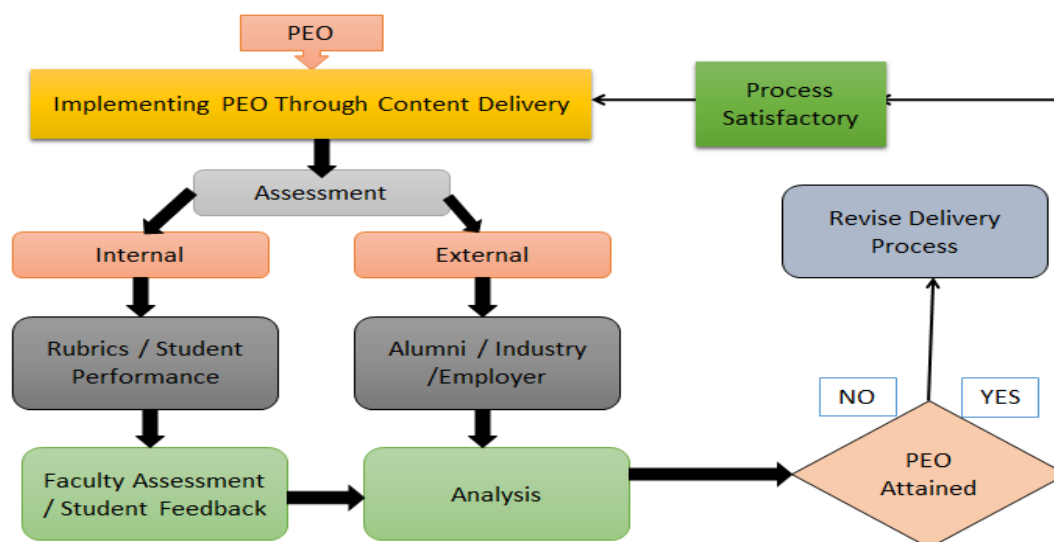
(E) **Basis of reward / corrective measures, if any:** Courses with very good feedback and bad feedback - the HOD will speak to the faculty member and find possibilities of improvement. Another indirect feedback is by students is voting for a Best Teacher Award.

(F) **Number of corrective actions taken in the last three years:**

1. Corrective steps include special sessions for students not doing well. Many faculty members attended special programs for pedagogy and teaching skills.
2. Based on students' feedback, one or revision sessions of pre-requisite subject material are conducted before starting the course.
3. Improvements are made in continuous assessment practices based on students' input.

The department follows and OBE (Outcome based education scheme and has certain specific PEO's i.e program educational outcomes and PO's i.e program outcomes.

The schematic on how the feedback affects the PO's and PEO's is shown below



42. List the distinguished alumni of the department (maximum 10)

List given in the table below

NAME	ORGANISATION	DESIGNATION
Surendra Pandey	Symchem Research Labs Pvt Limited	Founder

Dr.R. Rajagopal	KnowGenix	Founder
Digambar Ramkrishna Tatke	Synthone Laboratories And Consultants Private Limited	Founder
Dr.Murzban Karai	Jenrashid Consultants	Founder
Pankaj Bet	Bet & Bet Industries	Founder
Pramod Sawant	Dreamland Dyes Private Limited	Founder
Rajen Shah	Techno Color Corporation	Founder
Ravindra Bandivadekar	B.J. Corporation, Kolhapur	Founder
Savindar Singh Sarna	Sarna Chemicals Pvt. Ltd.	Founder
Siddhath Sikchi	Clean Science & Technology P Ltd	Founder

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

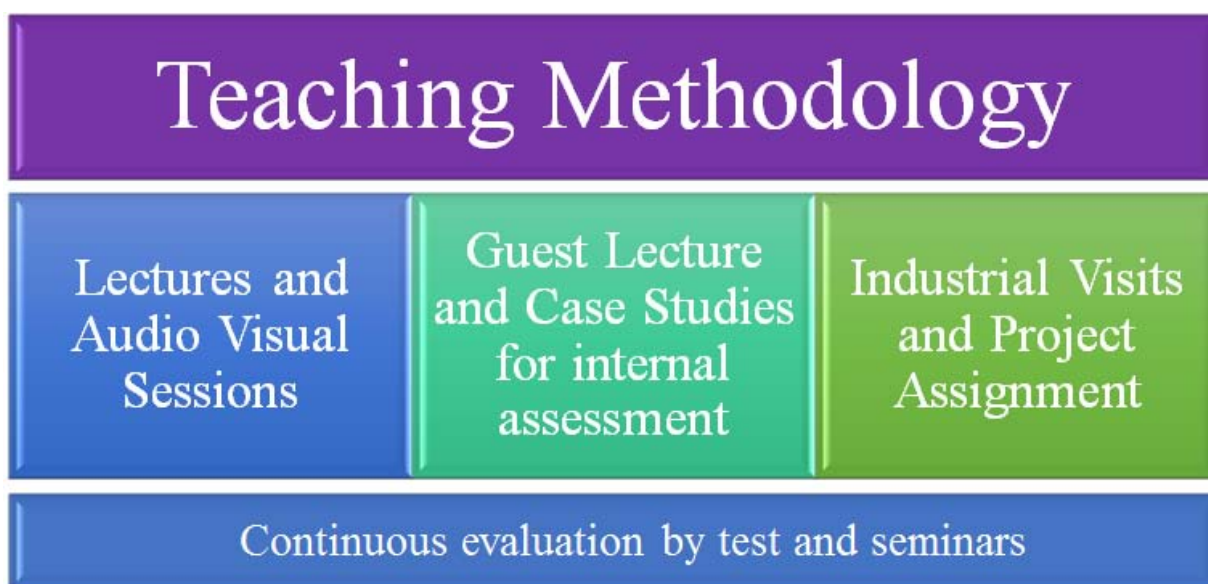
In addition to the guest lectures mentioned elsewhere in this document, the following national conferences and international conventions were organised by the department

Sr. No.	Conferences /Seminars / Workshop Organised	Faculty Name	Date	Location
1	Convention On Colorants	Prof. P. M. Bhate, Prof. N.Sekar Dr. G. S. Shankarling	Janurary 2013	Gandhinagar, Gujrat
2	Convention On Colorants	Prof. P. M. Bhate, Prof. N. Sekar, Dr. G. S. Shankarling Dr. S.Some Dr.S.Saha	March 2015	The Club Mumbai
3	National Symposium of functional	Prof. P. M. Bhate, Prof. N.Sekar	May 2013	ICT, Mumbai

	application of colorants	Dr. G. S. Shankarling		
4	National Symposium of functional application of colorants	Prof. P. M. Bhate, Prof. N. Sekar, Dr. G. S. Shankarling Dr. S. Some Dr. S. Saha	May 2014	ICT, Mumbai
5	Workshop on safe practices in the laboratory	Prof. P. M. Bhate, Prof. N. Sekar Dr. G. S. Shankarling	March 2014	ICT, Mumbai

44. List the teaching methods adopted by the faculty for different programmes.

The brief schematic of the teaching methodology as adopted by the faculty is given below



As shown above the faculty mainly explain the subject through:

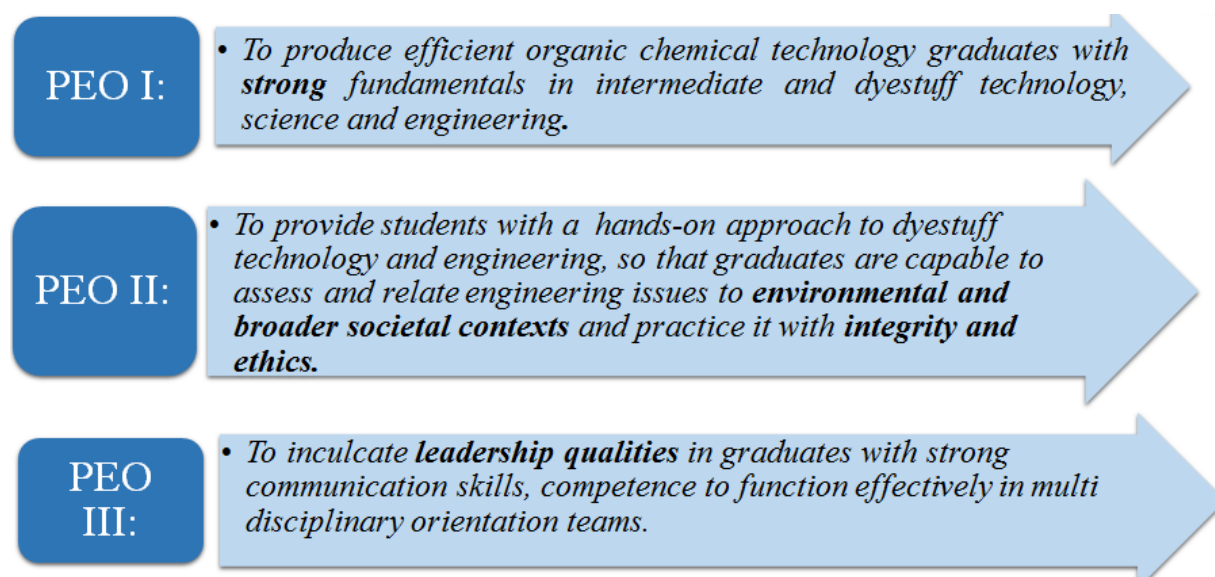
- 1) Audio-Visual Teaching aids (Presentations)
- 2) Case studies
- 3) Practical Experiences
- 4) Industry Visits
- 5) Home papers and Projects
- 6) Seminars

- 7) Tutorials
- 8) Time barred assignments

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The department has a feedback mechanism to overcome possible shortcomings. Also a credit based evaluation system is in place which stresses on continuous evaluation.

Firstly the broad program objectives for all the courses of the department are :



Certain program outcomes are stressed upon i.e:

- An ability to apply knowledge in Dyestuff Technology and Engineering
- An ability to implement concept to commercialization(C2C) concept of innovative ideas
- An ability to design and conduct experiments, as well as to analyze and interpret data
- An ability to design and synthesize organic colour molecules and intermediates to meet desired needs within realistic constraints such as economic, environmental, health and safety, production competency, and sustainability
- A recognition of the need for an ability to engage in lifelong learning
- A commitment to quality, timeliness, and continuous improvement.

These program outcomes are measured in each of graduate by a feedback mechanism which includes input from our alumni and also the employers.



These PO's and PEO's are constantly modified to conform with current trends in both academia and industry. Furthermore our programs are mapped with respect to our PO's and PEO's

46. Highlight the participation of students and faculty in extension activities - Nil

47. Give details of “beyond syllabus scholarly activities” of the department.

Several international and national level symposia and conferences are held annually. Also industry experts and distinguished alumni are invited for guest lectures, seminars and panel discussions which further the knowledge of our students. College level fests are regularly held in which our students actively participate, especially in technical events. Details of seminars and guest lectures organized by the department is mentioned previously.

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

All the programs are accredited by AICTE and B.Tech (Dyes) program was last accredited by NBA vide letter NBA/ACCR-967/2007 dt. 19/07/2008. M.Tech (Dyes) is accredited by NBA vide 28-301-2010-NBA dt 21/10/2015.

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

The department has done pioneering research work in the following fields

- 1) Development and applications of Ionic Liquids
- 2) Development and applications of deep eutectic solvents

- 3) Synthesis of novel cucurbiturils
- 4) Synthesis and applications of various types of chemosensors
- 5) Synthesis and applications of sensors for explosives
- 6) Synthesis and applications of laser dyes
- 7) Synthesis of natural products by easier protocols
- 8) Advancement in the fields of heterogeneous catalysts

The list of research publications attached previously gives an exhaustive idea of the research and development activities of the department over the past few years

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

- One of the oldest (a sort of heritage status) and reputed institution dedicated to chemical engineering processes and technologies with a remarkable rate of growth
- Teaching (both UG and PG) and research programmes exist in a large variety of frontier as well as unique areas
- Well qualified, senior and experienced faculty
- Academically, administratively and financially autonomous status of the institute
- Rs. 23 crore TEQIP programme is rated excellent

51. Future plans of the department.

Future plans of the department are enshrined in the departmental vision 2020. It reads

- The department aspires to be one of the world's top color chemistry department by 2020. It will do so by-
- Providing knowledge and skilled based training at undergraduate and **postgraduate** level by designing, teaching, and periodically upgrading a color chemistry and technology syllabus in line with current anticipated trends in industry and academia
- Pursuing world class research in colourants and related areas-basic textile and leather coloration, functional colourants, organic process technology and specialty chemicals
- Proactively developing and maintaining close interaction with national and international research laboratories, universities and chemical industries

Fibres and Textile Processing Technology Department

Almost 80 years ago, in 1933, when the Indian Textile Industry was progressing in full swing in cities like Mumbai, and Ahmedabad, other industries were not even born. It was the time Sir Vitthal Chandavarkar was the Vice Chancellor of University of Mumbai and also the Chairman of Textile Mill Owners' Association. Along with his industrialist friends, he donated Rs. 200 lakhs for creation of an educational and research institute catering to the need of Textile industry and that's how this UDCT, then called as University Department of Chemical Technology, under the wings of Mumbai University, was established. Initially, UDCT hosted only two disciplines: Textile Chemistry and Chemical Engineering, offering a two-year B.Sc.(Tech.) degree course post B.Sc. chemistry. A number of new disciplines of chemical technology, pharmacy, and biotechnology were opened up over the years as per the need of the nation and all these various technological disciplines have played a paramount role in building the respective industry in the country. Most of the Professional Bodies of the Technocrats of these disciplines, even today operate from the portals of excellence of UDCT. Now, passing through many transitions, the UDCT is known as Institute of Chemical Technology (ICT), which is the Deemed University under section 3 of UGC Act 1956, and also holds the status of being the first Elite Institute & Centre of Excellence conferred by the Govt. of Maharashtra.

Thus, the Department of Fibres and Textile Processing Technology (FTPT), formerly known as Textile Chemistry Section, has the unique distinction of being the first discipline with which this institution started. The Department conducts B.Tech. course with an intake capacity of 34, which is highest among all the B.Tech. courses of ICT. The course involves study of chemistry and manufacture of Fibres, their chemical processing such as bleaching, dyeing, printing and finishing. It further encompasses the study of chemistry as well as application of various kinds of chemicals, dyes, thickeners, and finishing auxiliaries which are used in chemical processing of textile fabrics and garments. It also involves knowledge of green chemistry, biotechnology and nanotechnology with special reference to chemical processing of textiles.

The post graduate courses of M. Tech. in Fibres & Textile Processing Technology both, Regular- 2 years and Sponsored 3- Years, M.Sc. in Textile Chemistry, Ph.D. (Tech.) in Fibres & Textile Processing Technology, Ph.D. (Sci.) in Textile Chemistry and Ph.D. (Sci.) in Chemistry attract a large number of students and so far more than 2250

graduates and 500 post graduates have passed out from this Department. The faculty of the Department has good interaction with the industry. Several industries and institutions have signed MOUs for research collaboration with us. Under these MOUs we offer Ph.D. and M. Tech courses to their scientists. A number of industries have been benefited by the technical advice given by the faculty. There have been a number of industrial and governmental research projects in which problems of mutual interest are investigated and the students as well as the Department have been benefitting by this interaction. The Department is recognized as Centre of Advanced studies in "Physicochemical aspects of Textile, Fibres, Polymers and Dyes" presently in Phase VII, since 1962. It was also recognised under the MODROB scheme of UGC. The Department is has been funded by TEQIP. In the month of December 2012, the Department got recognised as DST-FIST funded Department for the second time. The department also played an important role in evaluating TUFs under Ministry of Textiles, GOI. Also, the Department organizes guest lectures by industry experts under different endowment programmes. An international conference 'Texsummit' was organized by the Department recently, in December 2012. The faculty is engaged in high quality fundamental as well as applied research and they have got over 1000 publications in Indian and International journals as well as reputed fellowships to the credit from recognized institutions in India and abroad.

After the globalization of the markets with border-less trade, textile manufacturing activities are shifted to country like India which is fast developing economy. Textile being one of the fundamental needs of human being, it is a mother industry, next to only agriculture sector, involving over 60 million people. Today, the business is fast growing and will soon touch around US\$ 100 Billion. However, in the border-less trade many multinational brands are competing and the critical area of chemical processing of textile fabrics and garments requires tremendous amount of consolidation in terms of well trained manpower which can keep pace with latest technological operations and demand of stringent quality parameters in shortest delivery time giving competitive edge to the manufacturers. There is a huge shortage of Textile Processing graduates in the core textile industry as well as in multinational and reputed Indian manufacturers of dyes, chemical and auxiliaries. Thus the scope for graduates and postgraduates of this Department is enormous and such a demand with every passing day will only be rising given that consumption of apparels and technical textiles in India and abroad is increasing at galloping rate.

Events Organized (2013-16)

Endowment Lectures-

Dr. Dileep wakankar (India Head Corporate Product safety Clariant Chemicals, India) delivered a lecture on topic of Chemical Management – Global and Indian situation (M. V. Nimkar Endowment Lecture) on 8/03/2013



Dr. Sanjeev Kamat (Pidilite Industries Ltd., Chief Marketing) delivered a lecture on topic of Innovations in Textiles (G. M Nabar Endowment Lecture) on 8/03/2013



Prof. M.L. Gulrajani (Emeritus Professor, IIT, New Delhi) delivered a lecture on Enzymatic Functionalization of Textiles for the production of smart and intelligent textiles (M.V. Nimkar Endowment Lecture)



Prof. M.L. Gulrajani

Emeritus Professor,
IIT, New Delhi

**Enzymatic Functionalization of Textiles
for the production of smart and
intelligent textiles**



Mr. Arvind Shikarkhane (Textile Processing Consultant) delivered a lecture on 'Energy (M.V. Nimkar Endowment Lecture) on 21st march 2014



Mr. Prabhatkumar K. Trivedi (General Manager, Archroma India Pvt. Ltd.) delivered a lecture on 'Key Concerns for Continuous Dyeing & Features for Finishing Class of 1966 Visiting Fellowship) on 24th March 2014



Guest Lectures-

Dr Prasad Potluri delivered a lecture on Medical Devices to Aerospace Materials: Research Opportunities for Fibre Science and Textile Technology under TEQIP-II on 12th July 2013

Dr Prasad Potluri , Reader in Textile Composites and Head of Textile Science and Engineering Group at the University of Manchester



Dr. Siva Rama Kumar Pariti (Head STS Division, Dystar India Pvt. Ltd.) delivered a lecture on topic of Ecological Considerations of Colorants for Textile Applications, under TEQIP-II on 02/09/2013



Dr. Imtiyaz Ahmed Ansari Delivered a lecture on Surface modification using dendritically functionalised polymers under TEQIP-II on 4th January 2014



Prof. Sandra Downes, University of Manchester, U.K Delivered a lecture on Developing novel biomaterials using nanotechnology under TEQIP-II on 20th January 2014



WRA Staff delivered a Workshop on “Awareness of Sport Textile” under TEQIP-II from 27/01/2014 to 28/01/2014



Ms. Amruta Datar, Counselor for Mumbai, Campus France delivered a lecture on Higher education opportunities in France under TEQIP-II on 24th January 2014



Prof. (Dr.) Rishi Jamdagni Director, the Technological Institute of Textile & Sciences, Bhiwani, Haryana delivered a lecture on Textile - A road map to 2025 and globalisation under TEQIP-II on 30th January 2014



Mr. Zak Reese (Measurement Technology NW USA delivered a lecture on Biophysical Instruments under TEQIP-II on 15th april 2014





Mr. Vedprakash Shukla (Director, Skyfresh Solutions) delivered a lecture on topic of Handling Industrial Problems – 3M's under TEQIP-II on 28/02/2014, 1/03/2014, 28/03/2014 & 4/04/2014



Dr. S K Bhullar (Department of Mechanical Engineering, Bursa Technical University) delivered a lecture on Smart Nano/Micro fibrous Structure-Biomedical applications under TEQIP-II on 13th January 2015.



Mr. Man Mohan Kohli delivered a lecture on “Career and Education Opportunities abroad” under TEQIP-II Wednesday, October 21th, 2015



Dr. Anil Netravali, Jean and Douglas McLean delivered a lecture on Green Materials & Processes: From Advanced Composites to Nano-filters & From Wound Healing to Hair Styling, under TEQIP-II on 11th January 2016



Dr. Juan Hinestroza delivered a lecture on “Teaching cotton new tricks by manipulation of Nanoscale phenomena” , under TEQIP-II on 18th January 2016



Ethiopian Textile Industry Development Institute (TIDI), with the sole purpose of developing Ethiopian Textile industry on 25th Feb 2013

Signing of MOU with Ethiopian Govt. on 24th July 2014



Visit of faculty members to Ethiopia on 10th & 11th October 2014 for **Annual Awareness in Ethiopia**



Refresher Course II-
TEXTILE FIBRES
CHEMISTRY, PRODUCTION TECHNOLOGY, STRUCTURE PROPERTY
RELATIONSHIPS & APPLICATION
29th December 2014 to 2nd January 2015



TECHNICAL SEMINAR -1 on Dyeing of Cotton – “Problem & Remedies” held at KOMBOLCHA, ETHIOPIA on 2nd and 3rd March 2015



**Refresher Course III-
Textile Dyes & Auxiliaries from Dyers perspectives
16th to 20th March 2015**



Refresher IV & V – Pretreatment of Textiles (April 2015) and Colouration of Textiles (May 2015)



1st Semi-annual Steering Committee Meeting
20th August to 23th August 2015





Global Textile Congress in association with Thailand Convention & Exhibition Bureau (TCEB), on 13th, 14th & 15th February, 2015 at Bangkok, Thailand.



Organized three day workshop under TEQIP-II from 7-9 January 2015
at Dept of Fibres and Textile Processing Tech., ICT on “**Process Intensification in Dyeing**”
for the students of Sophiya College, Mumbai



Programmes conducted under Academic Support for Weak students- TEQIP by Lipika Nair,
Texassist, Mumbai

Sr No	Date	Venue	Module Particular	Target Student	Number of Student	Benefits for Student
I	03-03-2013	K.V. Auditorium, ICT	Presentation Skill	B.Tech.	20	Improvement in presentation skill.
2	17-03-2013	K.V. Auditorium, ICT	Presentation Skill	B.Tech.	20	Improvement in presentation skill.
3	26-03-2013	Physical Testing lab, Textile Dept, ICT	How to Handle Interview	PG and B.Tech.	20	It helps student to face interview

4	09-04-2013	Physical Testing lab, Textile Dept, ICT	How to Handle Interview	PG and B.Tech.	20	It helps student to face interview
5	16-04-2013	Physical Testing lab, Textile Dept, ICT	Building Self Esteem	Weak students from B.Tech.	20	Confidence Building

**Finishing School Programme Under TEQIP Programme Phase II
August 31 – September 1, 2013**

by Mr. Francis D'Souza, Kamshaft Innovation Pvt. Ltd.

On the topic “**Communication Skills**”.

The lecture was attended by UG & PG Students of Textile Department.



Texpression & Texquest 2013

Inter-college Technical Paper Presentation Competition



Cultural Festival of Textile Department

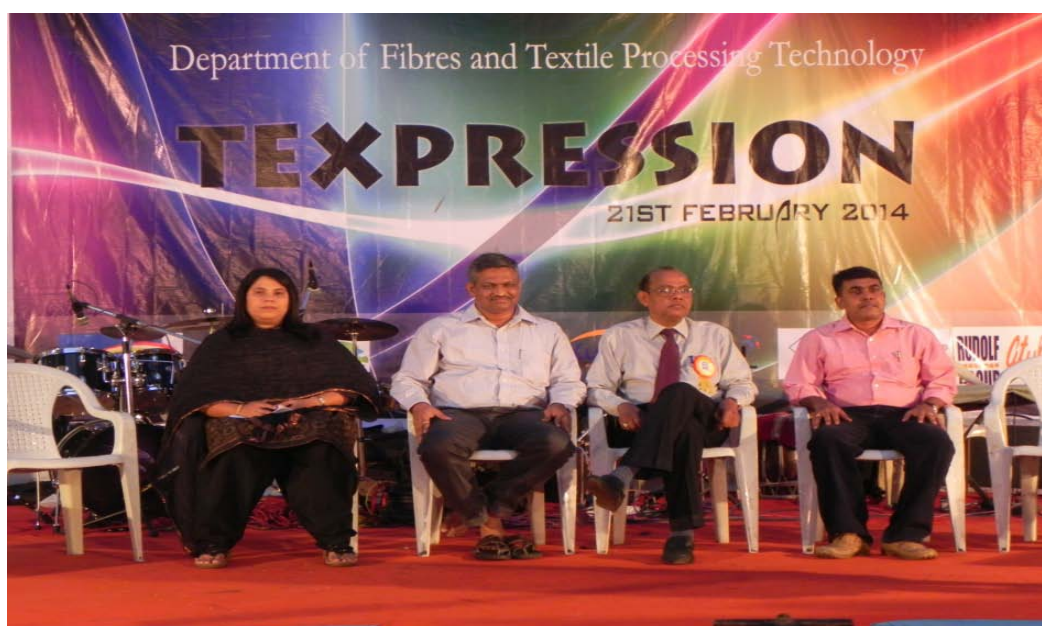


Texpression & Texquest 2014

Inter-college Technical Paper Presentation Competition



Cultural Festival of Textile Department



1. **Year of establishment - 1933**
2. **Is the Department part of a School/Faculty of the university- Yes**
3. **Names of programmes offered –**

B.Tech.(Fibres & Textile Processing Technology), M.Tech.(Fibres & Textile Processing Technology), M.Sc. (Textile Chemistry), Ph. D. (Tech.) & Ph. D. (Sci.) (Textile Chemistry), Ph. D. (Tech.) (Green Technology), Ph. D. (Sci.) (Biotechnology)

4. **Interdisciplinary programmes and departments involved-**

B.Tech : Chemistry, Physics, Mathematics, Chemical Engineering, General Engineering
M.Tech: Physics

5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**

National Universities/ Industries

- MoU has been signed with WRA, BTRA, CIRCOT, VJTI, DyStar India Pvt. Ltd. Some employees of these institutes are pursuing Ph. D. course in the dept under the guidance of Textile Dept faculty.
- Sophia Polytechnic, Mumbai – To impart Textile Chemistry knowledge.
- SIES College, Mumbai – Lectures for Chemistry Professors.
- St. Xavier College, Mumbai – M.Sc student are given facility to do research work occasionally
- V.J.T.I, Mumbai – Their M.Tech student as well as UG are given facility to work
- S.V.T. College (SNDT) Juhu, Mumbai – Their Teachers Teach Garment Manufacture & Merchandising
- S.N.D.T – Their Ph.D students are guided by our faculty
- Nirmala Niketan College of Home Science – Our faculty is examiner for their M.Sc course.
- WRA, Thane – Prof. M.D.Teli & Prof. R.V. Adivarekar are on Research Advisory Committee.
- SASMIRA, Mumbai & ATIRA, Ahmedabad – Prof. M.D. Teli on Research Advisory Committee.
- DKTE's Textile Institute, Ichalkaranji & Kumar guru College, Coimbatore – Prof. M.D. Teli on TIFAC – Programme
- NIFT – We conduct Practical courses for them
- Textile Association India: We publish their JTA Research Journal.
- Weaver Service Centre, Orissa we conduct Training for them.
- Prof. M. D. Teli conducted Motivation Workshop for Textile Committee officers
- We partnered Textile Association (India) in organising World Textile Conference in Mumbai on 6th & 7th May 2011
- Organized Texsummit-2012, International conference 'Building a Sustainable Value Chain through Green Technology FLOURISH OR PERISH, in INDIA ITME 2012 (9th India international textile machinery exhibition) held on 5th Dec. 2012 at Bombay convention and exhibition centre Goregaon, Mumbai which was attended by over 500 delegates.

Foreign Institutions

- At international level MoU has been signed with Ethiopian Textile Industry Development Institute (ETIDI)
- School of fashion and textiles of RMIT University, Australia

- Addis Ababa Science & Technology University (AASTU), Addis Ababa, Ethiopia
- MoU with “School of Material Science, Manchester University” in UK is in process.
- MoU with “Wollo University, Ethiopia” under ETIDI twinning partnership programme.

6. Details of programmes discontinued, if any, with reasons - NA

7. Examination System: Semester Based Credit System

8. Participation of the department in the courses offered by other departments - No

9. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	3	2	3
Associate Professors Reader	2	2	2
Asst. Professors Lecturer	1	1	1
Others Adjunct professor/ INSPIRE Fellow	2	2	2

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Prof. R.V.Adivarekar	Ph.D. Tech.	Prof. & Head of Dept	Textile colouration, Green Processing of Textiles, Medical Textiles, Enzyme manufacturing and application, Natural	12 Years	06

			dyes for textiles and cosmetics, Textile composites, Novel Processing Techniques.		
Prof.Dr. M. D. Teli	Ph.D. (Tech.)	Professor of Textile Chemistry & Member of BOM	Technical Textiles Modification of Polymers Nano composites Superabsorbent Natural and Functional Dyes Specialty Finishes Electro kinetic Properties Coating Plasma modification	37 Years	14
Prof. S. R. Shukla	B.Sc. (Hon.), B.Sc. (Tech.), Ph. D. (Tech.), F.M.A.S.	Professor of Technology of Dyeing and Printing	Textile wet Processing, Effluent Treatment, Heavy Metal Removal, Polymer recycling, and Biotechnology.	37 Years	08
Prof. (Dr.) Usha S. Sayed	PhD (tech)	Associate Professor	Technical textiles, Speciality chemicals, Garment Processing	28 Years	02
Dr.R.D.Kale	Ph.D. Tech	Lecturer	Processing of Synthetic fibres at room temperature, Synthesis and application of nano particles in Effluent treatment, Modification of Synthetic Fibres, Use of PEMs for modification of Textile Polymers	12	-
Dr. Asfiya Q. Contractor	Ph.D. Tech.	Adjunct Professor	Analytical Electrochemistry in Textiles, Electroless metal plating on textiles to produce EMI Shielding fabrics and	5months	-

			decorative metal printing.		
Dr.Sandeep P More	Ph.D.	DST-INSPIRE Faculty fellow	Organic Chemistry	3months	-

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Sr. No.	Visiting Faculty	Designation	Company	Class
1	Mr. P.R. Limaye	Dean Administration	Vidyalankar Institute of Technology	S. Y. B. Tech.
2	Mrs.Lipika S. Nair	Textile Consultant	-	M. Tech.
3	Mr.Muntazir Ahmed	Former Scientist	CIRCOT	M.Sc.
4	Ms.Bhavya Pande	Lecturer	VJTI	Final Y. B. Tech.
5	Dr. G.V.G. Rao	President	Atul Ltd., Colors Division	M. Tech.
6	Mrs. Armita Shukla	Lecturer	SNDT Women University	Final Y. B. Tech.
7	Mrs. Neeta Barooah	Lecturer	SNDT Women University	T. Y. B. Tech.
8	Mr. Darshan Sedani	Director	August Clothing Pvt. Ltd.	T. Y. B. Tech.
9	Ms.Vibhuti Barve	Lecturer	SNDT Women University	T. Y. B. Tech.
10	Mrs. Madhura Nerurkar	Director	Calantha Biotech	M.Tech

11	Dr. Ashok Sable	Director	Kusmo Chemicals Pvt Ltd	M.Sc.
12	Dr Javed Shaikh	Manager	Rossari Bioteh	S Y B Tech

12. Percentage of classes taken by temporary faculty – programme-wise information:
11%

13. Programme-wise Student Teacher Ratio -

- B.Tech – 120/7 – 17.1: 1
- M.Tech – 20/7 – 2.9:1
- M.Sc. – 10/7 – 1.4:1

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

	Sanctioned	Filled	Actual
Academic support staff (technical)	14	13	14
Administrative staff	01	01	01

15. Research thrust areas as recognized by major funding agencies

Research Interests -

- Enzyme Manufacturing and Application
- Textile coloration
- Medical textile
- Studies in biopolymers
- Natural Dyes for Textiles and Cosmetics
- . Non-conventional natural fibres for composites
- Green Processing of Textiles
- Fabric conditioners
- Novel Processing Techniques
- Novel flame retardancy
- Chemical Processing of almost all Natural and Synthetic Fibres and their modifications
- Melt blending and polymer alloy formation
- Technical Textiles
- Natural dye application for dyeing as well as printing of natural fibres

- Speciality finishing of textile fabrics of various origins making use of eco-friendly chemicals and finishes
- Synthesis of acrylic based thickeners for substitution of kerosene or many other printing thickeners such as sodium alginate etc
- Very effective superabsorbents of such biopolymers were also obtained and one such superabsorbent is filed for patent
- Modification of bio- polymers
- Immobilization of nano materials on the fibre surface for antibacterial properties
- Decolourization of dyeing effluents
- Depolymerization of textile polymer waste and its Recycling
- Heavy Metal Adsorption
- Ultrasound use in textile processing
- Natural Dye Extraction and applications

- Studies in Finishing
- Studies in synthesis of and formulations of specialty chemicals and their applications
- Studies of Nano-Silicone
- Processing of Denim Fabric
- Pigment Dyeing and finishing of Textile substrate
- Synthesis and application of surfactants on textiles
- Wet Wipes
- Studies in superabsorbent
- Processing of jute
- Application of nanoparticles for Effluent treatment
- Use of Nano emulsions in dyeing of synthetic fibres and its blends
- Nanoemulsions
- Biodegradable foams
- Biodegradable packaging films
- Nanotechnology using LBL Technique
- New Synthetic Fibre Processing technique through solvent crazing
- Application of Magnetic Field in Textile Processing
- Fibre Modification using nano additives
- Melt Blending

Sr. No.	Name of Fellowship	Number of fellowships
1.	UGC-SAP	32
2.	AICTE (M. Tech)	19
3.	TEQIP for M. Tech and Ph. D.	10
4.	Others (DBT/Tutorship/Industry sponsored)	12

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

a) National funding agency-12

b) International funding agency- 01

Name of the	Name of the	Title of project	Grants received
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faculty	Agency		
Prof R V Adivarekar	HUL	Dyeing of fibers	Rs. 5,60,000
Prof R V Adivarekar	HUL	Yellowing of fabrics	Rs. 8,50,000
Prof R V Adivarekar	HUL	Development of processes for manufacture of colour changing fabric/paper prototypes	Rs. 75,000
Prof R V Adivarekar	HUL	Deposition of 'Actives' on Fabric Surface by Laundry Processes: Quantification, Understanding and Ways to Improve Deposition	Rs. 6,00,000
Prof R V Adivarekar	HUL	Dyeing of fibres	Rs. 7,41,576
Prof R V Adivarekar	HUL	Development of technologies for consumer demonstrations	Rs. 9,00,000
Prof R V Adivarekar	Ethiopian Textile Industry development Institute	Sustainable development of Ethiopian Textile Industry (hand holding exercise)	USD. 19,98,665
Prof R V Adivarekar	Welspun India Ltd.	Product development through wet processing	Rs. 10,42,500
Prof S R Shukla	Global Organic Textile Standard, India	Waste water treatment of textile processing industry in the GOTS revision process	Rs. 36,000/-
Prof S R Shukla	Navin Fluorine International Ltd., Dewas,	Pollution load Assessment for existing and proposed product mix manufacture.	Rs. 3,00,000/-
Prof M D Teli	Adiv Nature pure	Studies in Natural Dyeing	Rs. 1,00,000/-
Prof M D Teli	L'Oreal	Effect of cosmetics and photo-radiation on Indian Hair	Rs. 7,00,000/-

c) Total Grant received- **Rs. 5905076 + USD. 19, 98,665**

17. Inter-institutional collaborative projects and associated grants received

a) National collaboration- 12 b) International collaboration- 01

18. Departmental projects funded by

Sr No	Agency	No of Projects	Amount in Lakhs	Status
1.	UGC-CAS Phase VII	01	97.5	Completed
2.	CSIR	02	13.05	Completed
3.	FIST, DST	01	150	On going
4.	MODROBS	01	5	Completed
5.	TEQIP Phase II	01	80.55	On going
6.	Unilever Industries Pvt. Ltd.	04	26.7	Completed
7.	Teqip-II-Innovation Networking	01	13.14	On going
8.	Centre of Excellence-Process Intensification-TEQIP-II	01	16.40	On going
9.	UGC-Major	02	16.59	On going
10.	Ethiopian Textile Industry Development Institute (ETIDI) of The Federal Democratic Republic of Ethiopia	01	1319.11	On going

Total grants received- 333.05 Lakhs

19. Research facility / centre with

- Centre of Advanced studies in “Physicochemical aspects of Textile, Fibres, Polymers and Dyes” presently in Phase VII, since 1962.

20. Special research laboratories sponsored by / created by industry or corporate bodies : NA

21. Publications: Total – 700

* Number of papers published in peer reviewed journals

- National – **126+**
- International – **209+**
- * Monographs -
- * Chapters in Books- 7
- * Edited Books -
- * Books with ISBN with details of publishers-
- * Number listed in International Database - Scopus- **60(MDT)+**,
- * Citation Index – range / average - **596**
- * SNIP -
- * SJR-
- * Impact Factor – range /average – **2.4**
- * h-index - **39**

22. Details of patents and income generated

Total no of Patents - 09

- Lipase catalyzed Knoevenagel condensation of aromatic aldehyde with active methylene group. Receipt No. 2684/MUM/2009, B.N.Borse and Prof S R Shukla
- Cationic dyeing assistant from aminolytic depolymerization of poly (ethylene terephthalate) bottle waste. Receipt No. 2773/MUM/2009 Navnath Pingale and Prof S R Shukla
- Novel synthesis and biological activity of Barbituric acid derivatives. Application no. 2094/MUM/2010 B.N.Borse and Prof. S R Shukla
- Demonstrating efficacy of cleansing products, Application no. 2158/MUM/2012, Ravindra Vithal Adivarekar (from ICT), Nitin Siddheshwar Deshpande, Vamsi Krishna Manthena, Vibhav Ramrao Sanzgiri (all from HUL)
- Preparation of Nano Titanium oxide using dispersing agents. Application no. R.V. Adivarekar, Neha Khurana
- Improved mosquito repellent fabric and its composition. Application no. 4200/MUM/2014, M.D.Teli, Pravin Chavan
- Mosquito repellent dye and its process of dyeing. Application no. 1622/MUM/2015, M.D.Teli, Pravin Chavan
- Biodegradable Foam Composition and Process thereof (product & process). Application no. 281/MUM/2015, Kale Ravindra, Katre Gaurav, Jagtap Priyanka, Garje Ambadas
- A process for the preparation of mosquito repellent fabric using herbal formulation and composition thereof. Application no. 2201/MUM/2015, Kale Ravindra, Gotmare V D, Bhatt Latika

23. Areas of consultancy and income generated

Sr. No.	Faculty Name	Industry Name	Area
1.	Prof M.D.Teli	<ul style="list-style-type: none"> • National Marine Engineering, Mumbai • Huntsman International, Mumbai • Adiv Pure Natural, 	Expert Advise

		Mumbai	
2.	Prof. S.R.Shukla	<ul style="list-style-type: none"> • Polyfibres Ltd., Vapi • Johnson & Johnson (I) Ltd., Mumbai 	Expert Advise
3.	Prof. R.V. Adivarekar	<ul style="list-style-type: none"> • HUL, Mumbai • Sarex India Ltd., Mumbai • Seagal Chemicals, Mumbai • Welspun India Ltd 	Expert Advise
4.	Dr R D Kale	<ul style="list-style-type: none"> • Sewerage Operations Department of MCGM 	Expert Advise

24. Faculty selected nationally / internationally to visit other laboratories / institutions industries in India and abroad - Nil

25. Faculty serving in

- a) National committees b) International committees c) Editorial Boards d) any other (please specify)

Professional activities -

Sr. No.	Faculty Member	Affiliation to Professional Bodies	Membership
1	Prof. R.V. Adivarekar	Textile Association (India)	Life Member
		Editor of Journal of Textile Association	Member
		Wool Research Association, Thane	Member
		BTRA, Mumbai	Member
		'Core Group' to function as a Sub-committee of the Council for COE in Sprotech at WRA	Member
		Expert in Department Research Committee at Textile Manufacturers Department, VeermataJijabaiTechnological Institute	Member
		RRC, Dept. of Physics	Member

		Board of studies and faculties of The Maharaja Sayajirao University of Baroda in Textile chemistry	Member
		Selection committee, College of Home Science, Nirmala Niketan	Member
		Indian Fibre Society	Life Member
		Sophia Polytechnic	Visiting faculty
2	Prof. S. R. Shukla	Colour Group of India	Life Member
		Marathi VigyanParishad.	Life Member
		Alumni Association, UDCT	Life Member
		Textile Association (India)	Life Member
		Indian Fibre Society	Life Member
		Association of Chemical Technologists, India.	Patron Member
		Career Advancement Scheme for Scientists, CIRCOT.	Member
		Indian Journal of Fibres and Textile Research	Member
3	Prof. M.D. Teli	Task Force on Seri biotechnology, DBT, New Delhi	Member
		Journal of the Textile Association.	Honorary chairman Editorial board
		Research Advisory Committee, Central Silk Board, Bangalore.	Member
		Research Advisory Committee of ATIRA	Member
		Research Advisory Committee of BTRA	Member
		of Textile Association (India) and Recipient of Honorary Fellowship and Service Memento of Textile Association India	Patron Member
		Association of Chemical Technologists, India.	Patron Member
		Colour Group of India.	Life Member
		Colourage.	Member of Editorial Board
		Society of Dyers and Colourists, SDCMumbai Region.	Past-Chairman
		TIFAC-DST Mission Reach Programme, Domain Expert	Member
		Policy & Role of Govt. in Textile Industry (Working Group), Ministry of Textiles	Member
		Siyaram Silk Mills Ltd., Board of	Member

		Directors	
		Academic Council, University of Mumbai.	Member
		SASMIRA (Mumbai)	Member
		All India Artisans and craft workers welfare associations	Served as Member
		Indian Textile Machinery Manufacturers Association, Mumbai.	Chairman Jury
		Editorial Board, Rossera	Member
		Editorial Board, Textile Value Chain	Member
		Board of Studies in Textiles and Clothing, SNDT University	Member
		Academic Council, S.V.T College	Member
		Academic Council, SNDT College,	Member
		Ph.D. Thesis at IIT, Deakin University and RMIT Australia, MS University and Vishweshwarya University Belgaum, Bengaluru, Kolkata university etc	Referee
		Papers and program committee, Global Textile Congress 2015	Chairman
		Research Monitoring Committee of TIFAC -DST for Technical Textiles at DKTE Textile Institute, Ichalkaranji.	Chairman
		Research Monitoring Committee of TIFAC -DST for Technical Textiles at Kumarguru College, Coimbatore.	Chairman
4	Dr. R.D. Kale	Society of Dyers and Colorist	Member
		Indian Fibre Society	Life Member
		Cultural Activity Cell of the Institute	Member
		MIS system of the Institute	Member
		Admission Committee of the Institute	Member
		“Shri G.M. Abhyankar Students’ Travel Assistance” of the Institute	Member
		Dept of Health Sciences, Maharashtra State	Expert on the committee
		SASMIRA, Worli	Examiner
		VJTI, Matunga	Examiner
5	Dr. Usha Sayed	UDCT Alumni Association	Member
		AATCC	Member
		Academic Council University of Mumbai	Member

		Faculty of Science, University of Mumbai.	Member
		Editorial Advisory Board of International Journal of Advanced Science and Engineering	Member
		Journal of polymer and Environment	Referee
		Nirmala Niketan college for M. Sc. (Home Science) & SNTD	Referee
		Adhoc Committee of Textile Technology (MU)	Chairperson
		National committees	Member
		<ul style="list-style-type: none"> • Fibers society of America • Alumni Association 	Member
		<ul style="list-style-type: none"> • The Committee for Women's Welfare, Mumbai University. 	Member
		<ul style="list-style-type: none"> • Board of studies Baroda university textile department. 	Member
		<ul style="list-style-type: none"> • AATCC 	Member
		<ul style="list-style-type: none"> • Natural Fibre society, Calcutta 	Member
		b) International committees	Member
		<ul style="list-style-type: none"> • Fibers society of America 	

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Sr.no.	Faculty name	Areas of training / development	Trainer Organization and Venue	Date from-to	No. days
1.	Dr Ravindra D Kale	Advanced Optimization Techniques & Its Application in Textile Engineering	Government College of Engineering & Textile Technology, Berhampore (GCETTB), Berhampore – 742 101, West Bengal, India workshop sponsored by AICTE	14-18 June 2011	05
2.	Dr Ravindra D Kale	Staff Development Programme on Nano Technology & Applications	NTTTR, Bhopal in Pune	11th to 15th March 2013	05

3.	Dr Ravindra D Kale	Workshop on Green Chemistry and Sustainable Technology on National Technology Day Celebrations	ICT, Mumbai	11th May 2013	01
4.	Dr Ravindra D Kale	Workshop on “ Modern Trends in Polymer Science and Technology-2013” held under TEQIP-II	ICT, Mumbai	3rd April 2013	01
5.	Prof. (Dr.) M. D. Teli	Continuing Education & Quality Improvement Programme on “ Institution Building through Appreciate Mindset” held under TEQIP-II	IIT, Mumbai	January24 to 4th February 2013	06
6.	Prof. (Dr.) Ravindra V. Adivarekar	Continuing Education & Quality Improvement Programme on “ Institution Building through Appreciate Mindset” held under TEQIP-II	IIT, Mumbai	January24 to 4th February 2013	06
7.	Dr Ravindra D Kale	Continuing Education & Quality Improvement Programme on “ Institution Building through Appreciate Mindset” held under TEQIP-II	IIT, Mumbai	January24 to 4th February 2013	06
8.	Dr Ravindra D Kale	Continuing Professional Development Programme on “Formulation of Research & Development Initiatives for Scientists and Technologists”	Engineering Staff College of India, Hyderabad, Andhra Pradesh	September 07 to 10, 2015	04

27. Student projects

a. percentage of students who have done in-house projects including inter-departmental projects

- **M.Tech - 100%**

- **B.Tech - 100%**

- b. percentage of students doing projects in collaboration with other universities
1. industry / institute

- **M.Tech – 20%**
- **B. tech – 0%**

28. Awards / recognitions received at the national and international level by

a. Faculty

Faculty Member	Major Awards
Prof. M. D. Teli	<ul style="list-style-type: none"> • Hon. Fellow of Textile Association of India • Fellow of the Maharashtra Academy of Sciences • Academic excellence award given by Textile Association of India in May 2011 • Served on the Elite Panel of SAC's (Sustainability Apparel Coalitions). • Chief Guest for SDC on 6th June 2014. • Served as a member of UGC sponsored curriculum design workshop. • ShikshanRatanPurskar
Prof. S.R. Shukla	<ul style="list-style-type: none"> • Fellow of the Maharashtra Academy of Sciences • ShikshanRatanPurskar • K.H. Gharda reward of research contribution 2009 • NarottamSekhsaria Best Teacher Award 2009 • GC- SBR One time Grant for guiding more than 15 Ph Ds-2011 • One Ph.D. (Tech.) thesis and Two M.Sc. (Tech) theses were selected for the "Best Thesis Award" of U.D.C.T. (1992-93, 1999-2000, 2003-2004)

29. Seminars/ Conferences/Workshops organized and the source of funding (national i. international) with details of outstanding participants, if any.

Sr. No.	Conferences /Seminars / Workshop Organised	Faculty Name	Date	Location	Funding Source
1.	World Textile conference	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , Dr.R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	5 th 6 th May 2011	Intercontinental, the lalit, Mumbai	
2.	Sportsaga 11, Intercollegiate Sports	Prof.R.V.Adivarekar	March 2011	ICT, Mumbai	Industry

	Fesival	ar			sponsors
3.	Texpression 2011 annual event of the department	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , Dr.R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	March 2011	ICT, Mumbai	Industry sponsors
4.	Texsummit 2012	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , Dr.R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	5 th December 2012	Bombay Exhibition centre, Goregaon, Mumbai	Industry sponsors
5.	Sportsaga 12, Intercollegiate Sports Festival	Prof.R.V.Adivarekar	March 2012	ICT, Mumbai	Industry sponsors
6.	Texpression 2012, annual cultural event of the department	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	March 2012	ICT, Mumbai	Industry sponsors
7.	Texquest 2013, Annual National Level Intercollegiate Technical Competition Texpression 2013, Annual Cultural Event of the Department	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	March 2013	ICT, Mumbai	Industry sponsors
8.	Guest Lecture by industry experts under TEQIP Phase-II on the topic “One Way Sustainability Approach” by Mr. AK Prasad (India’s Head, corporate product safety, Clariant Chemicals India	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	04/02/2013	ICT, Mumbai	TEQIP Phase-II
9.	Dr. M. V. Nimkar	Prof. M.D. Teli,	08/03/2013	ICT, Mumbai	TEQIP Phase-

	Endowment lecture on the topic “Chemical Management” by Mr. Dileep Madhusudan Wakankar (Vice President & Head Product Stewardship, Clariant Chemicals India)	Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti			II
10	G. M. Nabar Endowment lecture on the topic “Innovations in Textiles” by Dr. S.Y. Kamat (Chief marketing, PidiliteInd.Pvt. Ltd.)	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	08/03/2013	ICT, Mumbai	TEQIP Phase-II
11	Texquest 2014, Annual National Level Intercolligate Technical Competition Texpression 2014, Annual Cultural Event of the Department	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	March 2014	ICT, Mumbai	Industry sponsors
12	Guest Lecture under TEQIP Phase-II on the topic “Biophysical Instruments” by Mr. Zak Reese, Measurement Technology NW USA, held on	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	15 th April 2014	ICT, Mumbai	TEQIP Phase-II
13	Class of 1966 visiting fellowship lecture on the topic “Key Concerns for Continuous Dyeing & Features for Finishing” by Mr. Prabhatkumar K. Trivedi, General Manager, Archroma India Pvt. Ltd.	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	24 th March 2014	ICT, Mumbai	TEQIP Phase-II
14	Dr. M. V. Nimkar Endowment lecture on the topic “Energy	Prof. M.D. Teli, Prof.R.V.Adivarekar,	21 th March 2014.	ICT, Mumbai	TEQIP Phase-II

	Conservation & Effluent Control in Textile Processing” by Mr. Arvind Shikarkhane, Textile Processing Consultant	Prof.S.R.Shukla, , R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti			
15	Member of organizing committee of 11th International and 69th All India Textile Conference held in	Prof. M.D. Teli	20-21 st December 2013	Surat	TEQIP Phase-II
16	Member of organizing committee of 9 th International Conference on Apparel & Home Textiles ICAHT 2013	Prof. M.D. Teli	20 th -21 st September 2013	New Delhi	
17	Organized Refresher course II on Textile Fibres in Ethiopia at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT	Prof.R.V.Adivarekar	29 th December 2014.	ETIDI, Addis Ababa, Ethiopia	
18	Organized Refresher course I on The Principles and Practical aspects of setting up pilot processing plant for demonstration, training, and R & D purpose in, university, skill, centres and institutions in Ethiopia at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT	Prof.R.V.Adivarekar	1 st December 2014.	ETIDI, Addis Ababa, Ethiopia	
19	Texquest 2015, Annual National Level Intercollegiate Technical Competition	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, , R.D.Kale, Dr. U.	March 2015	ICT, Mumbai	

	Texpression 2015, Annual Cultural Event of the Department	Sayed, Dr. Sujata Pariti			
20	Guest Lecture Series under the TEQIP Phase-II by Dr. A. V. Joshi (Industry Expert and Visiting Faculty to ICT) on the topic, "A short course in chromatographic techniques"	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	15 th June 2015 to 19 th June 2015	ICT, Mumbai	TEQIP Phase-II
21	Guest Lecture under the TEQIP Phase-II by Dr. B. A. Gowri Shankar) on the topic, "Isolation and characterization of toxins acting on voltage-dependent sodium channels from several snake and cone snail venoms"	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	12 th June 2015.	ICT, Mumbai	TEQIP Phase-II
22	Guest Lecture under the TEQIP Phase-II by Dr. S.K.Bhullar on the topic, "Smart Nano/Micro fibrous Structure-Biomedical Applications"	Prof. M.D. Teli, Prof.R.V.Adivarekar, Prof.S.R.Shukla, R.D.Kale, Dr. U. Sayed, Dr. Sujata Pariti	13 th January 2015	ICT, Mumbai	TEQIP Phase-II
23	Organized Refresher Course III on "Chemistry of Dyes and Auxiliaries- from Dyers perspective" held at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT	Prof.R.V.Adivarekar	March 16, 2015 to March 20, 2015.	ETIDI, Addis Ababa, Ethiopia	Govt of Ethiopia
24	Organized Refresher Course IV on "Chemical Aspects of Pre-treatment of Textiles" held at	Prof.R.V.Adivarekar	April 14, 2015 to April 17, 2015.	ETIDI, Addis Ababa, Ethiopia	Govt of Ethiopia

	ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT				
25	Organized Seminar on topic Dyeing of Cotton “Problems and Remedies” at Kombalchain Ethiopia at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT	Prof.R.V.Adivarekar, Prof. M.D. Teli	3 rd and 4 th March 2015	ETIDI, Addis Ababa, Ethiopia	Govt of Ethiopia
26	Organized The Global Textile Congress (GTC 2015) and was also the chairman of the papers committee of the conference.	Prof. M.D. Teli	February 13-15, 2015	Bangkok, Thailand	Textile Associated of India
27	Organized Refresher course II on Textile Fibres in Ethiopia at ETIDI on.	Prof. M.D. Teli, Dr. R.D.Kale	29 th December 2014	ETIDI, Addis Ababa, Ethiopia	Govt of Ethiopia
28	Organized three day workshop at Dept of Fibres and Textile Processing Tech. on “Process Intensification in Dyeing” for the students of Sophiya College, Mumbai	Dr.R.D.Kale	7-9 January 2015	ICT, Mumbai	TEQIP Phase-II
29	Organized and conducted Refresher course on “Dyeing of Textile Fibres” held at ETIDI, Addis Ababa in Ethiopia from	Prof.R.V.Adivarekar, Prof. M.D. Teli, Dr. R.D.Kale	20 th July to 31 st July 2015	ETIDI, Addis Ababa, Ethiopia	Govt of Ethiopia

Workshops Organised

Sr. No.	Name of the expert	Topic	Date
1.	WRA Staff	Workshop on ‘Awareness of	27-28 th January 2014

		Sport Textile'	
2.	Dr. R D Kale, Textile Dept.	“Process Intensification in Dyeing” for the students of Sophiya College, Mumbai.”	07-09 th January 2015

30. Code of ethics for research followed by the departments

- Institute guidelines are followed.

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Tech.	90	67	23	100	100
M. Sc	30*	27	24	100	100
B. Tech (13-15)	161	99	62		
Note : * some applications are directly forwarded from chemistry department, so the applications received are included in that department					

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M. Tech	55%	20%	15%	10%
M. Sc.	0%	69%	30%	1%
Ph.D Tech	83%	10%	5%	2%
Ph.D (Sci)	80%	10%	10%	-

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise. GATE Qualified Students;

Year	Total No. of M.Tech students	No. of GATE qualified M.Tech students
2014-15	20 (18+2)	9

2013-14	18	9
2012-13	15	6
2011-12	15	9

34. Student progression

Student progression	Percentage against enrolled
UG to PG	40%
PG to M.Phil.	-
PG to Ph.D.	30%
Ph.D. to Post-Doctoral	-
Employed	
<input type="checkbox"/> Campus selection	90%
<input type="checkbox"/> Other than campus recruitment	10%
Entrepreneurs	1%

35. Diversity of staff

Percentage of faculty who are graduates	
of the Same university	5
From other universities within the State from	1
Universities from other States from universities	-
outside the country	1

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period

- Dr.Ravindra D Kale was awarded Ph.D.(Tech) degree in January 2012
- Dr Sandeep More was awarded Ph.D.(Sci.) degree in October 2013
- Dr Asfiya Contractor was awarded Ph.D.(Tech) degree in August 2014

37. Present details of departmental infrastructural facilities with regard to

- a) Library :

M. M. SHARMA LIBRARY

Library data related to Textile Section

- No of Book volumes of Textile only: **2080**
- Total no of Journal Bound volume of Textile only: **5000**

List of Textile journals

- Indian Journal of Fibre and Textile Research
- Textile Research Journal
- International Dyer
- Journal of the Textile Institute
- Textile Progress
- Coloration Technology
- Journal of Textile Association
- Colourage
- Man-made Textiles in India
- MANTRA

b) Internet facilities for staff and students

- We have well equipped Information Processing Centre which is accessible to all students.
- High speed Internet is also available in the Lab for 24 hours

c) **Total number of class rooms : 02**

Sr. No.	Name of the Lab	Available floor area (sq.m)	Max. Batch size	Weekly hours required as per curricula	No. of experiments		Recurring Expenditure (allotted per year)
					Prescribed	Conducted	
Fibres and Processing Technology:							
21.	A-141	655	36	20	25	25	Rs. 2,00,000.00
22.	A-142	420	36	20	25	25	
23.	A-143	614	18	20	25	25	
24.	A-144	580	36	20	25	25	
25.	A-145	619	18	20	25	25	
26.	Dye House	11,102	72	20	25	25	
27.	A-262	614	40	Reaseach Lab.			
28.	A-263	932	40				
29.	A-264	840	40				
30.	A-265	641	40				
31.	A-267 (Advanced Testing Lab)	600	40				

32.	A-269	614	40	
33.	A-271(Physical Testing Lab)	600	40	

d) Class rooms with ICT facility – IPC & e-Library

e) Students' laboratories – 05

- Laboratories- 02
- Dye House – 01
- Physical Testing lab – 01
- Advanced Testing lab – 02

f) Research laboratories - 05

- Dye House – 01
- Physical Testing lab – 01
- Advanced Testing lab – 02

38. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university

Postgraduate students' Ph.D. (Tech)

sR. No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Katode Sanjay	UICT, Mumbai	Sustainable Approach towards Garment Processing	Prof. (Dr.) R.V. Adivarekar
2.	Kherdekar Girish	TITS, Bhiwani	Natural Eco-Friendly Alternatives to the Existing Scouring & Dyeing of Wool & Woolens	Prof. (Dr.) R.V. Adivarekar
3.	Udakhe Jayant	IIT, New Delhi	Synthesis & Application of Far Infrared Reflecting Dyes	Prof. (Dr.) R.V. Adivarekar
4.	HaraneRachana	ICT, Mumbai.	Selective Treatment and Recycling of Textile Effluent	Prof. (Dr.) R.V. Adivarekar
5.	MadiwalePallavi	ICT, Mumbai.	Studies in Medical Textiles	Prof. (Dr.) R.V. Adivarekar
6.	Singh Girendra Pal	ICT, Mumbai.	Studies in Natural Fibre Composite	Prof. (Dr.) R.V.

				Adivarekar
7.	Biranje Santosh	ICT, Mumbai.	Extraction of Biopolymers and their Modification for Application in Medical Textile	Prof. (Dr.) R.V. Adivarekar
8.	MaitiSaptarshi	ICT, Mumbai.	Studies in graphite for textiles	Prof. (Dr.) R.V. Adivarekar
9.	Mahajan Geetal	ICT, Mumbai.	Fermentation Technology in Textile Wet processing	Prof. (Dr.) R.V. Adivarekar
10.	Desai Pawan	VJTI	Studies in Synthetic Polymers for Sports Textiles Application.	Prof. (Dr.) M. D. Teli
11.	ValiaSanket	ICT	Functionalization of Fibres for Speciality Applications	Prof. (Dr.) M. D. Teli
12.	MallickAranya	UDCT, Mumbai	Modification of polymers for enhancement of functional properties	Prof. (Dr.) M. D. Teli
13.	Shukla Armaity	SNDT university	Naturally colored functional Nonwovens	Prof. (Dr.) M. D. Teli
14.	Ambre Pragnya	Dr. B.M.N college SNDT	Combined Dyeing and finishing of natural dyes.	Prof. (Dr.) M. D. Teli
15.	Chavan Pravin	ICT, Mumbai.	Functional modifications for specialty applications in textiles	Prof. (Dr.) M. D. Teli
16.	AnnaldewarBhagyashri	ICT, Mumbai.	Studies in Speciality finishes	Prof. (Dr.) M. D. Teli
17.	MiftaJalaludin	ETIDI, Ethiopia	Studies in Fibrous polymers	Prof. (Dr.) M. D. Teli
18.	Nadiger Vinay G.	VJTI, Mumbai	Studies on Nano-composite Polypropylene Fibres for UV Protective Sports Textile Application	Prof. (Dr.) S. R. Shukla
19.	Vyas Shweta K.	D.K.T.E, Ichalkaranji	Process intensification in textile colouration	Prof. (Dr.) S. R. Shukla
20.	Parmar Neha D.	ICT, Mumbai.	Microbial decolourisation of dyeing effluent	Prof. (Dr.) S. R. Shukla
21.	Jadhav Abhishek	ICT,	Studies in multifunctional	Prof. (Dr.) S.

		Mumbai.	auxiliaries	R. Shukla
22.	Arputhraj A.	SSM College	Nanotechnology in textile applications	Prof. (Dr.) S. R. Shukla
23.	Kore Umesh	ICT, Mumbai.	Theoretical aspects of reactive dyeing for process intensification	Prof. (Dr.) S. R. Shukla
24.	PalaskarShital	ICT, Mumbai.	Studies on effect of plasma treatment on different textile fabrics	Prof. (Dr.) S. R. Shukla
25.	Thitahme Prasad	ICT, Mumbai.	Application of Activated Carbon in Effluent Treatment	Prof. (Dr.) S. R. Shukla
26.	Gangawane Prashant	ICT, Mumbai.	Finishing of Textiles	Dr. Usha Sayed
27.	Kane Prerana	ICT, Mumbai.	Studies in Non-Conventional Method for Effluent Treatment	Dr. R. D. Kale

Postgraduate students' Ph.D. (Science)

No.	Research scholar	Previous Institution	Project	Supervisor
1.	Singh Saurabhkumar A.	Khalsa College, Mumbai	Adsorptive separation of strategic and heavy metal ions and process characterization.	Prof. (Dr.) S. R. Shukla
2.	PatilNamata N.	SNDT, Mumbai	Studies on colour removal from waste water	Prof. (Dr.) S. R. Shukla
3.	Musale Rakesh M	SSVPS College, Dhule	Studies in depolymerization of waste poly(ethylene terephthalate) and utilization of the products obtained therefrom	Prof. (Dr.) S. R. Shukla
4.	NautiyalAkanksha	Lady Irwin College, University of Delhi	Process Intensification in Textile Effluent Treatment using Novel Concepts	Prof. (Dr.) S. R. Shukla

Postgraduate students' Ph.D. (Textile Chemistry)

No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Pallavi Badhe	ICT, Mumbai	Protease production and application in textiles	Prof. (Dr.) R.V. Adivarekar
2.	Pawar Ashitosh	ICT, Mumbai.	Synthesis of Colourants	Prof. (Dr.)

			Form Natural Sources	R. V. Adivarekar
3.	Patil Ashwini	ICT, Mumbai.	High Performance Auxillaries for Textile Substrates	Prof. (Dr.) R. V. Adivarekar
4.	Sutar Trupti	ICT, Mumbai.	Studies in Blood Clotting Materials	Prof. (Dr.) R. V. Adivarekar
5.	Shinde Suvidha	ICT, Mumbai.	Application of Fluorescent Dyes on Textile and Leather Substrates	Prof. (Dr.) R. V. Adivarekar
6.	Ramagude Supriya	ICT, Mumbai	Not yet decided	Prof. (Dr.) R. V. Adivarekar
7.	Pawar Sushant	ICT, Mumbai.	Novel Techniques of coloration	Prof. (Dr.) R. V. Adivarekar
8.	Patankar Kaustubh	Mumbai University, Kalina	Ecofriendly Flame Retardents	Prof. (Dr.) R. V. Adivarekar
9.	Jadhav Akshay	ICT, Mumbai.	Processing of non conventional fibres and their value additions	Prof. (Dr.) M. D. Teli
10.	Latika Bhatt	CCS Haryana Agriculture University, Haryana	Application of essential Oils on Textiles	Dr. R. D. Kale
11.	Vikrant Gorade	ICT, Mumbai.	Application of Micro/Nano Cellulose in Textiles	Dr. R. D. Kale
12.	Jadhav Nilesh	ICT, Mumbai.	Use of Natural Polymers in Green Composites	Dr. R. D. Kale
13.	Potdar Tejasvi Ajit	ICT, Mumbai.	Effluent treatment by naturally occurring materials	Dr. R. D. Kale
14.	Ravikant Sharma	ICT, Mumbai.	Synthesis and Application of Speciality Chemicals	Dr. Usha Sayed
15.	Parte Sneha	ICT, Mumbai.	Studies in non-woven	Dr. Usha Sayed

Degrees Awarded

Sr. No.	Name	Course	Title	Guide
1.	Meena Chetram	PhD (Tech)	Ecofriendly Colouration of Textiles	Prof. (Dr.) R.V. Adivarekar
2.	Tayade Priti	Integrated PhD (Tech)	Extraction, Standardization and Application of Natural Dyes	Prof. (Dr.) R.V. Adivarekar
3.	Joshi Manasi	Ph.D. (Sci.)	Production and Application of Marine Pectinase in Textile Processing	Prof. (Dr.) R.V. Adivarekar
4.	Neha Khurana	Integrated PhD (Tech)	Studies in Technical Textile	Prof. (Dr.) R.V. Adivarekar
5.	Madhura Nerurkar	Ph.D. (Sci.)	Screening of Marine Microorganisms for the Production of Textile Enzymes	Prof. (Dr.) R.V. Adivarekar
6.	K. H. Prabhu	PhD (Tech)	Herbal Colourants For Eco-Friendly Textile Processing	Prof. (Dr.) M. D. Teli
7.	Javed sheikh	PhD (Tech)	Performance enhancement by polymer modification	Prof. (Dr.) M. D. Teli
8.	R D Kale	PhD (Tech)	Studies In Structure-Property Relationship For Improved Performance Of Synthetic Fibres	Prof. (Dr.) M. D. Teli
9.	Kapadi Parag	Ph.D. (Sci.)	Polymers from renewable resources	Prof. (Dr.) S. R. Shukla
10.	Gondhelekar Sachin	Ph.D. (Sci.)	Removal of heavy metals from waste water using biosorbents	Prof. (Dr.) S. R. Shukla
11.	Borse Bhushan N.	Ph.D. (Sci.)	Production of lipase from microorganism and their application in polyester hydrolysis and in organic reaction	Prof. (Dr.) S. R. Shukla
12.	Parab Yogesh S.	Ph.D. (Sci.)	Chemical recycling of polymeric waste materials	Prof. (Dr.) S. R. Shukla
13.	Shukla Pushkar M.	Ph.D. (Sci.)	Studies on biosorption of metals cations using cheap adsorbents.	Prof. (Dr.) S. R. Shukla
14.	Shah Rikhil V.	Ph.D. (Sci.)	Synthetic reactions and applications of chemically recycled products from polyester waste	Prof. (Dr.) S. R. Shukla

15.	Borude Vasant S.	Ph.D. (Sci.)	Application of ionic liquid in organic synthesis and polymer degradation	Prof. (Dr.) S. R. Shukla
16.	Prashant Gangawane	Ph.D. (Tech)	Advance applications in Textile processing.	Dr. Usha Sayed

c) from other institutions/universities –

No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Ambre Pragnya	Dr. B.M.N college SNTD	Combined Dyeing and finishing of natural dyes.	Prof. (Dr.) M. D. Teli
2.	Shukla Armaity	SNTD university	Naturally colored functional Nonwovens	Prof. (Dr.) M. D. Teli

39. Number of post graduate students getting financial assistance from the university - No

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.- No

41. Does the department obtain feedback from

- a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback – **Yes**
 - **The faculty is member of syllabus revision committee and feedback is utilised for syllabus revision as well as day to day monitoring of teaching and learning programme as and when opportunity exists.**
- b. Students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback– **Yes**
 - **This feedback is collected at Institute level and Higher authorities selectively act on the same.**
- c. Alumni and employers on the programmes offered and how does the department utilize the feedback– **Yes**
 - **Alumni and employers are members of the Syllabus committee and their opinion is asked and utilised for syllabus revision.**

42. List the distinguished alumni of the department

Sr. No.	Name	Business
1.	Prof. B.D. Tilak –Honoured with Padma Bhushan by President of India.	Research Scientist, Educationist & Administrator
2.	Dr. V.M. Nimkar	Founder, Texanlab/ Nimkartek
3.	Prof. V.A.Shenai	Renowned Teacher & Author of many Textile Books
4.	Prof. M.L. Gulrajani, former Head, IIT(D), Textile Dept.	Education and Research
5.	Prof. R.B.Chavan	IIT, Delhi
6.	Dr.G.V.G.Rao	President, Atul Ltd.
7.	Mr. L.N.Gandhi	Founder, LN Chemicals
8.	Mr. A.K.Prasad	Head,Clariant, Paper & Leather Chemicals
9.	Mr.Edward Menezes	Director, Rossari Biotech
10.	Dr Naresh Saraf	Director, Sarex Overseas
11.	Dr. Ashok Sabale	Kusmo Chemicals (Young Entrepreneur)
12.	Dr. Ramesh Kabra	Sorbe Biotech India Pvt. Ltd.
13.	Mr Chaitanya Joshi	C Tech corporation, Mumbai

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Special lectures-

Sr. No.	Name of the expert	Date of the lecture	Topic
1.	Mr. Deepak Alat	27 th august 2012	Practical Problems in Finishing of Textiles
2.	Mr. Deepak Alat	27 th august 2012	Practical Problems in Finishing of Textiles-II
3.	Mrs. Lipika Nair	27 th September 2012	Testing of Textiles and Its Importance
4.	Dr. Amit Bhattacharya	11 th October 2012	Antimicrobial on Textiles
5.	Dr. Somil Mehta	11 th October 2012	Auxiliaries in textile Processing.
6.	Dr. Kapil Joshi	22 nd November 2012	New development in Nanoscale IR, Thermal and Mechanical Spectroscopy with an AFM”
7.	Dr. KartickSamanta	28 th December 2012	“Plasma Application in Textile”.
8.	Dr. S. Sreenivasan Former Director, Central Institute for Research on Cotton Technology	21 st April 2011	"Current Status of Indian cotton and its Potential and Prospects for Diversified Utilization"

9.	Dr. A.N. Desai Director, BTRA	21 st April 2011	Disruptive Technologies in Textiles
10.	Mr. A.K. Prasad Clariant International	22 nd March 2012	Sustainability in Textiles - By One Way
11.	Dr.DileepWakankar, Clariant Chemicals (India)	8 th March 2013	Chemical Management – Global and Indian situation
12.	Dr S Y Kamat	8 th March 2013	Innovations in Textiles
13.	Mr. UllhasNimkar		Dynamic Demands of Colourants
14.	Dr. Prasad Potluri University of Manchester, UK	12 th July 2013	Medical Devices to Aerospace Materials: Research Opportunities for Fibre Science and Textile Technology
15.	Dr. Siva Rama Kumar Pariti, Industry expert, Dystar India Pvt. Ltd.	2 nd September 2013	Ecological Considerations of Colorants for Textile Applications
16.	Dr. Imtiyaz Ansari Sheffield Hallam University, UK	4 th January 2014	Surface Modification Using Dendritically Functionalised Polymers
17.	Mr. Amogh Lokhande	15 th January 2014	Effective Literature Survey
18.	Prof. Sandra Downes Professor of Biomaterial Science at “School of Material Science, Manchester University” in UK	20 th January 2014	Developing Novel Biomaterials Using Nanotechnology
19.	Mr. Prashant Shah & Mrs. Purnima Parkhi Product manager for elemental and molecular spectroscopy, Agilent technologies	22 nd January 2014	Elemental & Molecular Spectroscopy in Textile Industry
20.	Mrs. AmrutaDatarCounsellor for Mumbai, Campus France, India	24 th January 2014	Higher education opportunities in France
21.	Prof. Rishi Jamdagni Director, The Technological Institute	30 th January 2014	Textile - A Road Map to 2025 and Globalization

	of Textile & Sciences, Bhiwani, Haryana		
22.	Mr. Vedprakash Shukla	28 th Feb, 1 st &28 th March and 4 th April	Handling Industrial Problems – 3M's
23.	Mr. Arvind Shikarkhane	21 st march 2014	Energy Conservation & Effluent Control in Textile Processing
24.	Mr. Prabhatkumar K. Trivedi	24 th march 2014	Key Concerns for Continuous Dyeing & Features for Finishing
25.	Mr. Zak Reese	15 th April 2014	Biophysical Instruments
26.	Dr. B. A. Gowri Shankar (Assistant Professor, Bannari Amman Institute of Technology, Tamil Nadu)	12 th June 2015	Isolation and characterization of toxins acting on voltage-dependent sodium channels from several snake and cone snail venoms
27.	Dr. S.K.Bhullar	13 th January 2015	Smart Nano/Micro fibrous Structure-Biomedical Applications
28.	Dr. A. V. Joshi	15 th June 2015 to 19 th June 2015	A short course in chromatographic techniques
29.	Mr. Man Mohan Kohli (President and CEO, Kraft Education Services)	21 st October 2015	"Career and Education Opportunities Abroad"

Workshops –

Sr. No.	Name of the expert	Topic	Date
1.	WRA Staff	Workshop on 'Awareness of Sport Textile'	27-28 th January 2014
2.	Dr. R D Kale, Textile Dept.	"Process Intensification in Dyeing" for the students of Sophiya College, Mumbai."	07-09 th January 2015

44. List the teaching methods adopted by the faculty for different programmes.

The interactive teaching methodology implemented ensures direct information transfer from course teacher to students. Student projects and seminar presentations, various modes of continuous assessment such as MCQ tests, Quiz, group discussion, case studies, industrial visits etc helps students to develop interpersonal skills, subject knowledge, team work, problem solving approach.

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

The impact of delivery of course and course content is assessed in two ways:

- (1) examination/evaluation conducted by course teacher
- (2) Students' feedback about teacher and course

Teachers' Evaluation: The weightage of different modes of assessments is done as under.

	In-Semester evaluation		End-Semester-Exam	Components of continuous mode
	Continuous mode	Mid Semester-Exam		
Theory	30%	30%	40%	Quizzes, class tests (open or closed book), group assignments, viva-voce assignments, discussions
Practicals	50%	-	50%	Attendance, viva -voce, journal, assignments, project, experiments, tests

This two way communication helps to improve students as well as teachers and modify the course content (if necessary) which help in attaining POs.

46. Highlight the participation of students and faculty in extension activities.

Conferences/Seminars/Winter/Summer Schools Attended-

Prof. (Dr.)R.V. Adivarekar

1. Delivered a lecture at Unilever R&D, Unilever Industries Private Limited, Bangalore on 29th July 2011 on the topic, "Natural Colourants".
2. Paper presented on "Dyeing of Silk with natural dye from *Serratia marscecens subsp marscecens*", at International Conference on International Congress on environmental Research [ICER-2011], held on 15th -17th December 2011 at Sardar Vallabhbhai Institute of National Technology, Surat, Gujarat.
3. Delivered a lecture at Raymond Ltd., Vapi on 15th March 2012 on the topic, "Latest Developments covering chemistry of reactive Dyes and wool dyeing".
4. Presented poster on use of lipase in detergents at New horizons in Biotechnology

- organized by BRSI, on 11th -14th November 2012, at Trivandrum
5. Poster presented on “Dyeing of Natural Fibres with a Red Pigment produced by *Streptomyces coelicolor*” at International Conference on Advances in Biological Sciences, 15th -17th March 2012 at Kairali Heritage, Kannur, Kerala.
 6. Poster presented on “Utilization of *Citrus limetta*[sweetlime] peels as a substrate for pectinase production by marine *Bacillus subtilis*” at International Conference on Advances in Biological Sciences, 15th -17th March 2012 at Kairali Heritage, Kannur, Kerala.
 7. Paper presented on, “A frugal way of reusing wastewater in textile pretreatment process”, 7th International Congress of Environmental Research, 2014, at Bangalore, India.
 8. Poster presented on, “Protease from *Bacillus Subtilis*-An efficient bio scouring tool”, at Third Global Sustainable Biotech Congress 2014, 1-5 Dec 2014, at Jalgoan, India.
 9. Paper presented on, “Preparation and characterization of Microcrystalline cellulose from Renewable source” at Fourth international conference on Natural polymers, Biopolymers, Biomaterials, their composites, nano composites, blends, IPNs, Ployelectrolytes, and gels: micro to nanoscales, 2015 at Kottayam, Kerala, India.
 10. Presented paper on, “Multifunctional finishing of textile” at Global textile congress, 2015, at Bangkok, Thailand.
 11. Presented paper on, “Dendrimer pre-treatment for salt-less reactive dyeing of cotton at acidic pH”, at Fourth International conference on Cotton, Textile and Apparel Value Chain in Africa (CTA-2015), 1-2 May 2015, at Ethiopia.
 12. Organized Refresher course I on, “The Principles and Practical aspects of setting up pilot processing plant for demonstration, training, and R & D purpose in, university, skill, centres and institutions in Ethiopia” at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT on 1st December 2014.
 13. Organized Refresher course II on, “Textile Fibres” in Ethiopia at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT on 29th December 2014.
 14. Organized Seminar on, “Dyeing of Cotton: Problems and Remedies” at Kombalchain Ethiopia at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT on 3rd and 4th March 2015.
 15. Organized Refresher Course III on, “Chemistry of Dyes and Auxiliaries- from Dyers perspective” held at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT from March 16, 2015 to March 20, 2015.
 16. Organized Refresher Course IV on, “Chemical Aspects of Pre-treatment of Textiles” held at ETIDI, Addis Ababa under Twining Partnership between ETIDI and ICT from April

- 14, 2015 to April 17, 2015.
17. Guest Lecture under the TEQIP Phase-II by Dr. S.K.Bhullar on the topic, “Smart Nano/Micro fibrous Structure-Biomedical Applications”, 13th January 2015
 18. Guest Lecture under the TEQIP Phase-II by Dr. B. A. Gowri Shankar) on the topic, “Isolation and characterization of toxins acting on voltage-dependent sodium channels from several snake and cone snail venoms.” held on 12th June 2015.
 19. Guest Lecture Series under the TEQIP Phase-II by Dr. A. V. Joshi (Industry Expert and Visiting Faculty to ICT) on the topic, “A short course in chromatographic techniques”, held from 15th June 2015 to 19th June 2015.
 20. Texquest 2015, Annual National Level Intercollegiate Technical Competition
 21. Texpression 2015, Annual Cultural Event of the Department

Prof. (Dr.) M.D.Teli

1. Presented Paper on “Application of Waste grains for useful applications in Textile M.D.Teli and Javed Sheikh” in 24th National Convention of Textile Engineers on “Textile and Apparel industry: Contemporary issues to address in coming years” at Bangalore on 19-20 August 2011.
2. Presented Paper on “Modification of bamboo rayon to render it cationic dyeable and antibacterial M.D.Teli and Javed Sheikh” in International conference on “Textiles: A decade ahead” Organized by NISTI and IIT Delhi” at PHD House, New Delhi on 9-10 Sept 2011.
3. Presented Paper on “R & D in Chemical Processing of Cotton M.D.Teli” World Cotton Research Conference-5 organized by ISCI, ICAR and ICAC” at Mumbai on 7-11 Nov. 2011.
4. Presented Paper on “Extraction of chitosan from shrimp shells and application in simultaneous pigment dyeing and antibacterial finishing of denim M.D.Teli and Javed Sheikh” in ATNT 2011” KCT, Coimbatore on 15-17th dec 2011.
5. Chaired a session at 53rd Joint Technological Conference of BTRA, SITRA, NITRA, ATIRA. at BTRA, Mumbai 17-18 Feb 2012
6. Delivered Key note address at “Italian Textile Machinery Workshop” organized in Mumbai Mumbai 2012.
7. Delivered lecture as Chief Guest SDC Seminar held in Thane March 2012.
8. Presented lecture on,” Some of our Experience in R&D of King Cotton”, at International Conference on Natural Fibres (Theme: Jute & Allied Fibres), 1-3 August

- 2014, at Kolkata.
9. Poster presented on, "Recycling of Terry Towel (Cellulosic) waste into Carboxy Methyl Cellulose (CMC) for textile printing", at International Conference on Natural Fibres (Theme: Jute & Allied Fibres), 1-3 August 2014, at Kolkata.
 10. Oral presentation on, "Extraction and characterization of Aselmoschusmanihot lignocellulosic fiber", at International Conference on Natural Fibres (Theme: Jute & Allied Fibres), 1-3 August 2014, at Kolkata.
 11. Poster presentation on, "Low temperature dyeing of silk using atmospheric plasma treatment", at International Conference on Natural Fibres (Theme: Jute & Allied Fibres), 1-3 August 2014, at Kolkata.
 12. Poster presentation on, "Acid Dyeing of silk using atmospheric plasma treatment", at International Conference on Natural Fibres (Theme: Jute & Allied Fibres), 1-3 August 2014, at Kolkata.
 13. Invited lecture on, "Innovative product developments from natural fibres", at Workshop on Design and Technology Intervention in Natural Fibre Product Innovation, 22nd – 23rd July 2014, at National Institute of Design, PG campus Gandhinagar.
 14. Paper presentation on, "Sustainability based upcycling and value addition of textile apparels, Multidisciplinary Innovation for sustainability and growth (MISG 2014), 27-28 August 2014, at Kuala Lumpur.
 15. Paper presented on, "In-situ Synthesis and Application of Cerium Oxide Nanoparticles on Cotton Fabric for UV protection and antibacterial properties", at International Symposium on Fiber Science and Technology (ISF2014), 29 Sept – 1 Oct 2014, at Tokyo Fashion Town, Tokyo.
 16. Paper presented on, "Polypropylene/ Poly-TrimethyleneTeraphthalatepolyblend fibres – Structure, Processing and Dyeability", at ICR Symposium on Polymer Crystals 2014 (ICRSPC 2014), 2 OCT 2014, at Mielparque, Kyoto.
 17. Paper presented on, "Polyurethane Based Nanocomposite Coatings For Enhanced Gas Barrier Property", at Kyoto International Symposium on Neo Fiber Technology 2014, at Kyoto Institute of Technology, Kyoto.
 18. Paper presented on, "Effect of Compatibilizer on Structure of PP/PTT Polyblend fibers", at Kyoto International Symposium on Neo Fiber Technology 2014, 3 OCT 2014, at Kyoto Institute of Technology, Kyoto.
 19. Paper presented on, "Grafting of butyl acrylates on to banana fibres for improved oil absorption", at The 89th Textile Institute World Conference – Textile Innovations from

- Fibre to Fashion, 2-6 Nov 2014, at Wuhan, China.
20. Paper presented on, "Building sustainable value chain in Textiles Processing", at 12th International & 70th All India Textile Conference Cotton, Textile & Apparel Value & Supply Chain: Global Opportunities & Challenges! 17th -18th January 2015, at Nagpur.
 21. Paper presented on, "Application of Atmospheric Plasma Technology", at 12th International & 70th All India Textile Conference Cotton, Textile & Apparel Value & Supply Chain: Global Opportunities & Challenges! 17th -18th January 2015, at Nagpur.
 22. Paper presented on, "Organic Cotton: For profit, planet & people", at 12th International & 70th All India Textile Conference Cotton, Textile & Apparel Value & Supply Chain: Global Opportunities & Challenges! 17th -18th January 2015, at Nagpur.
 23. Paper presented on, "Sustainability in textile and role of innovation", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 24. Paper presented on, "Insitu synthesis of cerium nanoparticles on cotton fabric by hydrothermal method", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 25. Paper presented on, "Development of multifunctional cotton", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 26. Paper presented on, "Application of low cost sustainable fibrous materials for combating water pollution", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 27. Paper presented on, "Development of compound shades on natural fibres using marigold and sappanwood", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 28. Paper presented on, "Nanoclays for enhancing properties of polypropylene of polyblend fibres", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 29. Paper presented on, "Low temperature dyeing of silk using atmospheric plasma", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 30. Paper presented on, "Dyeing of Banana fibre with natural dyes", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 31. Paper presented on, "Upcycling of textiles", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 32. Paper presented on, "Production of absorbent material by modifying unconventional polysaccharides", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
 33. Paper presented on, "Printing of lables using natural dyes", at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.

34. Paper presented on, "Application of gelatin based microcapsules containing mosquito repellents oils on cellulose biopolymer", at Fourth International conference on natural polymers and biomaterials, 10-12 April 2015, at Kottayam.
35. Paper presented on, "Extraction and characterization of novel lignocellulosic fibre", at Fourth International conference on natural polymers and biomaterials, 10-12 April 2015, at Kottayam.
36. Paper presented on, "Optimization of Plasma modification for low temperature dyeing of silk fabric", at Fourth International conference on natural polymers and biomaterials, 10-12 April 2015, at Kottayam.
37. Paper presented on, "Global cotton textile and apparel business and Africa's position", at Fourth International conference on Cotton, Textile and Apparel Value Chain in Africa (CTA-2015), 1-2 May 2015, at Bahir Dar University, Ethiopia.
38. Paper presented on, "Encapsulation of Aroma and its application on cotton to impart mosquito repellency", at Fourth International conference on Cotton, Textile and Apparel Value Chain in Africa (CTA-2015), 1-2 May 2015, at Bahir Dar University, Ethiopia.
39. Paper presented on, "Sustainability in Textile wet processing and some of our research Experiences", at Fourth International conference on Cotton, Textile and Apparel Value Chain in Africa (CTA-2015), 1-2 May 2015, at Bahir Dar University, Ethiopia

Prof. (Dr.) S.R. Shukla

1. Presented Paper at IIT Roorkee 2011 titled with "Adsorption of heavy metal ions with peanut husk carbon".
2. Paper presented at Thadomal Shahni College of engineering in Chemergence 2011 on "Adsorption of heavy metal ions with peanut husk carbon".
3. Presented Poster at "AFFINITY" MIT, Pune 2011 titled with "Green chemistry: a global solution".
4. Attended 2nd International Conference on recycling and reuse of materials and products, Kottayam, Kerala in 2011.
5. Presented Paper at IIT Roorkee 2012 titled with "Energy saving in Cooling tower".
6. Presented Paper at "AZEOTROPY", IIT Mumbai, Mumbai 2012 on topic "Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H₂O₂ technique."

7. Presented Paper at IIT Mumbai 2012 titled with “Dye decolorisation by using laccase enzyme produced from fungi”.
8. Presented Paper at a National Conference on “Energy management and Alternate sources of Energy 2012” at ThadomalShahni college of engineering, Mumbai.
9. Presented paper at IIT ROORKEE on Dye decolorisation by laccase produced from corgholus versicolour in combination with UV/H₂O₂ technique.
10. Presented Paper at “AZEOTROPY”, IIT Mumbai, Mumbai 2012 on topic “Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H₂O₂ technique.”
11. Presented paper at “COGNIZANCE” IIT Roorkee, Roorkee 2012 on research topic “Colour removal from textile effluent using biological method.”
12. Presented Paper at “AZEOTROPY”, IIT Mumbai, Mumbai 2012 on topic “Dye decolorization by laccase produced from coriolus versicolor in combination with UV/H₂O₂ technique.”
13. Presented paper at “COGNIZANCE” IIT Roorkee, Roorkee 2012 on research topic “Colour removal from textile effluent using biological method.”
14. Attended the 12th Orientation Programme in Catalysis Research From 19th Nov. to 6th Dec. 2011 at National Centre for Catalysis Research Indian Institute of Technology Madras, Chennai.
15. Attended PLAST INDIA 2012 at PragatiMaidan, New Delhi.
16. Attended 2nd International Conference on recycling and reuse of materials and products, Kottayam, Kerala in 2011.
17. Presented Poster at DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology (SESTEC-2012) , SVKM Mithibai College, Mumbai on “Biosorption of Uranium (VI) solution from aqueous medium by Citrus limetta peels.”
18. Presented Poster at DAE-BRNS Biennial Symposium on Emerging Trends in Separation Science and Technology (SESTEC-2012) , SVKM Mithibai College, Mumbai on “Efficient removal of heavy metals by chemically modified coir fibres”.
19. Paper presented on,” Lean manufacturing practices in garment manufacturing units: An appraisal”, at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
20. Paper presented on,” Comparative evaluation of the various methods of

- degumming of eri silk”, at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
21. Paper presented on,” Weight reduction of polyester fabric using ionic liquid as additive to NaOH”, at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
22. Paper presented on,” Energy conservation in textile wet processing using ultrasound technique”, at Global Textile Congress-2015, 13-15 Feb 2015, at Bangkok.
23. Paper presented on,” Energy conservation in textile wet processing using ultrasound technique”, at Cotton, Textile and Apparel Value Chain in Africa (CTA 2015), May 2015, at Bahir Dar, Ethiopia.

Dr. R. D. Kale

1. Paper presented on “Synthesis of Titanium dioxide Nanoparticles and application on Nylon fabric by layer by layer Technique for Antimicrobial Property” at VASTRA’11, held on 18th February 2011, at V.J.T.I., Matunga, Mumbai.
2. Paper presented on “Synthesis and application of ZnO Nanoparticles on Nylon fabric by LbL Technique for Antimicrobial Property” at Golden Jubilee Young Researcher’s Symposium on Emerging Trends in Textile/ Fibre Research & applications , held on 11th & 12th March 2011, at IIT, Delhi.
3. Paper presented on, “Mosquito Repellent Textiles”, at DST FIST review meeting, 27th September 2014, at ICT, Mumbai.
4. Paper presented on, “Decolourization of textile effluents using nanoparticles”, at DST FIST review meeting, 27th September 2014, at ICT, Mumbai.
5. Paper presented on, “Past, Present and Future of Technology- status in Finishing”, at Annual conference of ETIDI, Ethiopia, 10 to 11 October 2014, at ETIDI, Adis Ababa Ethiopia.
6. Paper presented on, “Decolourization of C. I. Reactive Black 5 by PVP Stabilized Iron nanoparticles”, at International conference Advances in Chemical Engineering & Technology ICACE TKMCE '14, 6-18 October 2014, at Department of Chemical Engineering, ThangalKunjuMusaliar College of Engineering, Kollam, Kerala.
7. Paper presented on, “Decolourization of C. I. Reactive Blue 21 by PVP stabilized Nickel nanoparticles”, at International Conference on "Effects of Emissions & Effluent on Environment"-2014, 30th June and 1st July 2014, at AU College of Engineering (A),

Visakhapatnam, Andhra Pradesh.

8. Paper presented on, “Dyeing of Polyester-Wool Blend using Nanoemulsion Technique”; at Indo-Czech International Conference (ICIC2014) on Advancements in Specialty Textiles and their Applications in Material Engineering and Medical Sciences, 29th & 30th April 2014, at AU College of Engineering (A), Visakhapatnam, Andhra Pradesh.
9. Paper presented on, ” Dyeing of Polyester-Wool Blend using Nanoemulsion Technique”, at Indo-Czech International Conference (ICIC2014) on Advancements in Specialty Textiles and their Applications in Material Engineering and Medical Sciences, 29th & 30th April 2014, at Kumaraguru College of Technology, Coimbatore.
10. Paper presented on, ” Decolourization of Effluent using nano particles”, AATCC’s 2014 International Conference, April 1-3 2014, at Crowne Plaza Resort in Asheville, North Carolina USA.
11. Paper presented on, “Textile Fibres”, at Refresher course for ETIDI staff in Ethiopia, 29 Dec 2014 to 2 Jan 2015, at ETIDI, Adis Ababa in Ethiopia.
12. Presentation on, “Advances in Textile Characterization”, at CIRCOT, 16 to 20 March 2015, at Mumbai, India.
13. Presentation on , “Technotex-2015”, at 4th International Exhibition and Conference on Technical Textiles “Technotex-2015” formal, 9 to 11 April 2015, at Bombay Exhibition Centre, Goregaon, Mumbai, India.
14. Paper presentation on, ” Opportunities and Challenges in an Integrated World”, at Global Textile conference on “Global Textiles:”Opportunities and Challenges in an Integrated World”, 13 to 15 Feb 2015, at Bangkok, Thailand.
15. Paper presentation on, ” Sustainable Innovations in Colouration organized by Society of Dyers and Colourist”, at National Conference 2014 on the theme of "Sustainable Innovations in Colouration" organized by Society of Dyers and Colourist, 6th June 2014, at Textile Committed, Worli, Mumbai.
16. Presentation on, “Design & Degree Show (DDS 2014)", at Design & Degree Show (DDS 2014), 27- 29 June 2014, Industrial Design Centre, IIT, Mumbai.

Dr. U. Sayed

1. Presented poster on Antisoiling finish of polyester fibre at Fibre society, AATCC & national textile conference joint synporium, 11-14 oct 2011 held at Francis Marino, hotel charleston S.C. USA

2. Presented poster on Biomimicking of enzymes for textile processing at Fibre society, AATCC & national textile conference joint synporium, 11-14 oct 2011 held at Francis Marino, hotel charleston S.C. USA
3. Paper presented on, “Application of variously produced nanoparticles of, Cu, Ag and Chitosan on Textile substrates to produce functional Textiles”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
4. Paper presented on, “Water soluble chitosan and its derivatives, nano chitosan on textile substrates to obtain medical, smart and functional textiles”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
5. Paper presented on, “Application and production of nano-ZnO on synthetics to produce functional textiles”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
6. Paper presented on, “Application of dyes sensitized solar cells (DSSC) on textiles”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
7. Paper presented on, “Design and synthesis of noval antimicrobial textiles based on 2-Azaontraquinone moiety”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
8. Paper presented on, “Phosphorus containing grapheme derivatives as a flame retardant for textile fibres”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.
9. Paper presented on, “Best use of waste tetracycline hydrochloride for textile Colouration”, at UTIB R & D brokerage Event, Turkey, 3-4 April 2014, at Turkey.

47. Give details of “beyond syllabus scholarly activities” of the department.

- Guest Lectures-

Sr. No.	Name of the expert	Date of the lecture	Topic
1.	Mr. Deepak Alat	27 th august 2012	Practical Problems in Finishing of Textiles
2.	Mr. Deepak Alat	27 th august 2012	Practical Problems in Finishing of Textiles-II
3.	Mrs. Lipika Nair	27 th September 2012	Testing of Textiles and Its Importance
4.	Dr. Amit Bhattacharya	11 th October 2012	Antimicrobial on Textiles
5.	Dr. Somil Mehta	11 th October 2012	Auxiliaries in textile Processing.

6.	Dr. Kapil Joshi	22 nd November 2012	New development in Nanoscale IR, Thermal and Mechanical Spectroscopy with an AFM”
7.	Dr. Kartick Samanta	28 th December 2012	“Plasma Application in Textile”.
8.	Dr. S. Sreenivasan Former Director, Central Institute for Research on Cotton Technology	21 st April 2011	"Current Status of Indian cotton and its Potential and Prospects for Diversified Utilization"
9.	Dr. A.N. Desai Director, BTRA	21 st April 2011	Disruptive Technologies in Textiles
10.	Mr. A.K. Prasad Clariant International	22 nd March 2012	Sustainability in Textiles - By One Way
11.	Dr. Dileep Wakankar, Clariant Chemicals (India)	8 th March 2013	Chemical Management – Global and Indian situation
12.	Dr S Y Kamat	8 th March 2013	Innovations in Textiles
13.	Mr. Ullhas Nimkar		Dynamic Demands of Colourants
14.	Dr. Prasad Potluri University of Manchester, UK	12 th July 2013	Medical Devices to Aerospace Materials: Research Opportunities for Fibre Science and Textile Technology
15.	Dr. Siva Rama Kumar Pariti, Industry expert, Dystar India Pvt. Ltd.	2 nd September 2013	Ecological Considerations of Colorants for Textile Applications
16.	Dr. Imtiyaz Ansari Sheffield Hallam University, UK	4 th January 2014	Surface Modification Using Dendritically Functionalised Polymers
17.	Mr. Amogh Lokhande	15 th January 2014	Effective Literature Survey
18.	Prof. Sandra Downes Professor of Biomaterial Science at “School of Material Science, Manchester University” in UK	20 th January 2014	Developing Novel Biomaterials Using Nanotechnology
19.	Mr. Prashant Shah & Mrs. Purnima Parkhi Product manager for	22 nd January 2014	Elemental & Molecular Spectroscopy in Textile Industry

	elemental and molecular spectroscopy, Agilent technologies		
20.	Mrs. Amruta Datar Counsellor for Mumbai, Campus France, India	24 th January 2014	Higher education opportunities in France
21.	Prof. Rishi Jamdagni Director, The Technological Institute of Textile & Sciences, Bhiwani, Haryana	30 th January 2014	Textile - A Road Map to 2025 and Globalization
22.	Mr. Vedprakash Shukla	28 th Feb, 1 st & 28 th March and 4 th April	Handling Industrial Problems – 3M's
23.	Mr. Arvind Shikarkhane	21st march 2014	Energy Conservation & Effluent Control in Textile Processing
24.	Mr. Prabhatkumar K. Trivedi	24 th march 2014	Key Concerns for Continuous Dyeing & Features for Finishing
25.	Mr. Zak Reese	15 th April 2014	Biophysical Instruments
26.	Dr. B. A. Gowri Shankar (Assistant Professor, Bannari Amman Institute of Technology, Tamil Nadu)	12 th June 2015	Isolation and characterization of toxins acting on voltage-dependent sodium channels from several snake and cone snail venoms
27.	Dr. S.K. Bhullar	13 th January 2015	Smart Nano/Micro fibrous Structure-Biomedical Applications
28.	Dr. A. V. Joshi	15 th June 2015 to 19 th June 2015	A short course in chromatographic techniques
29.	Mr. Man Mohan Kohli (President and CEO, Kraft Education Services)	21 st October 2015	"Career and Education Opportunities Abroad"

Workshops-

Sr. No.	Name of the expert	Topic	Date
1.	WRA Staff	Workshop on 'Awareness of Sport Textile'	27-28 th January 2014
2.	Dr. R D Kale, Textile Dept.	"Process Intensification in Dyeing" for the students of Sophiya College, Mumbai."	07-09 th January 2015

• Industrial Visits

Company name	Sector	Date From	Date to	Number of students
Alok Industries	Textile Processing	17/02/2012	17/02/2012	32
CIRCOT	Textile Research	04/08/2012	04/08/2012	30
Indo Count Pvt. Ltd. Kagal (Kolhapur)	Textile Processing	05/09/2012	05/09/2012	40
Oswal F.M. Hammerle Textiles Limited	Textile Processing	05/09/2012	05/09/2012	40
Navmaharashtra Co. Op. Spinning Mills, Ichalkaranji	Textile Spinning	05/09/2012	05/09/2012	40
Tessitura Monti India Pvt. Ltd., Tamgaon (Kolhapur)	Textile Processing	06/09/2012	06/09/2012	40
BRFL Garments, Ichalkaranji	Textile Garmenting	07/09/2012	07/09/2012	40
Bhilwara Synthetics Ltd	Textile Processing	07/10/2013	07/10/2013	22
Sangam Industries	Textile Processing	08/10/2013	08/10/2013	22
Garware Wall Ropes, Panchagani	Technical Textiles	31/01/2014	31/01/2014	20
Venus Industries	Textile Processing	13/02/2014	13/02/2014	30
Oswal F.M. Hammerle Textiles Limited	Textile Processing	11/02/2014	11/02/2014	30
Owens Corning Taloja	Technical Textile	04/03/2014	04/03/2014	50
Nahar Industries, HP	Textile Processing	09/04/2014	10/04/2014	35
Intertek India Pvt. Ltd, Mumbai	Textile Laboraotry	26/02/2014	26/02/2014	35

- Summer Projects
- After Signing of MOU with Ethiopian Govt. on 24th July 2014 following students have been enrolled for various programmes at ICT;

Sr. no	Name of Student	Course Pursuing

1	Solomon AlebachewTebeje	M. Tech in FTPT
2	TesfayeTolessaAdere	M. Tech in FTPT
3	Markos WodatoWodaje	M. Tech in FTPT
4	Oliyad Ebba Gurm	M. Tech in FTPT
5	AlemayehuLetaSenbeta	M. Tech in FTPT
6	Theodros Zekarias	M. Sc in Textile Chemistry
7	Mifta Jalaludin	Ph. D. Tech

• **Visiting Lectures at Ethiopia**

Sr. No.	Title	Place	Month and Year
1.	Annual Awareness in Ethiopia	Ethiopia	10-11 th October 2014
2.	Refresher course I on, “The Principles and Practical aspects of setting up pilot processing plant for demonstration, training, and R & D purpose in, university, skill, centers and institutions”	Ethiopia	1 st December 2014
3.	Refresher course II on, “Textile Fibres”	Ethiopia	29 th December 2014
4.	Seminar on, “Dyeing of Cotton “Problems and Remedies”	Ethiopia	3-4 March 2015
5.	Refresher Course III on, “Chemistry of Dyes and Auxiliaries- from Dyers perspective”	Ethiopia	16-20 March 2015
6.	Refresher Course IV on, “Chemical Aspects of Pre-treatment of Textiles”	Ethiopia	14-17 April 2015.
7.	Dendrimer pre-treatment for salt-less reactive dyeing of cotton at acidic pH R.V. Adivarekar	Ethiopia	1-2 May 2015

- 48. State whether the programme/ department is accredited/ graded by other agencies?
If yes, give details-Yes**

Letter of AICTE approval for the relevant Postgraduate department

अभारत नारायण एकामीती शिक्षा परिषद्

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

पत्रा: अंक ७७७ (२००७)

NATIONAL BOARD OF ACCREDITATION

Dr. (Mrs.) Tasneem Naqvi Haider
Director - Central Assurance

NEA/2007/967/2007
July 19, 2008

To

The Principal (In-charge),
Institute of Chemical Technology (Autonomous),
University of Mumbai,
Nathalal Parekh Marg, Matunga,
Mumbai - 400 019

Sub: Accreditation Status of Programme(s) offered by your Institution.

Dear Sir:

With reference to your application for accreditation of the following programme(s) and the Expert Committee visit to your institution, the report of the visit team was considered by the various Sectoral Committees and subsequently by the National Board of Accreditation in its meeting held on 15.07.2008. Based on the recommendations of the Board, I am pleased to communicate the Accreditation Status of the following programme(s) from your Institution.

Sl. No.	Name of UG & PG Programme(s)	Accreditation Status	Period of validity (w.e.f. 8.07.2008)
1.	Chemical Engg.	Accredited	5 years
2.	Dyestuff Technology	Accredited	5 years
3.	Fibre & Textile Processing Tech.	Accredited	5 years
4.	Food Engg. & Technology	Accredited	5 years
5.	Oil, Oleochemicals & Surfactants Tech.	Accredited	5 years
6.	Polymer Engg. & Tech.	Accredited	5 years
7.	Surface Coating Technology	Accredited	5 years
8.	Pharm. Chemistry & Tech.	Accredited	5 years
9.	M.Tech. Plastic Processing	Accredited	5 years
10.	B. Pharmacy	Accredited	3 years
11.	ME - B.A-Processing Tech.	Accredited	5 years
12.	ME - Plastic Engg.	Accredited	5 years
13.	ME - Masters in Chemical Engg.	Accredited	5 years
14.	ME - Fibre & Textile Processing Tech.	Accredited	5 years
15.	ME - Polymer Engg. & Tech.	Accredited	5 years
16.	ME - Surface Coating Technology	Accredited	5 years
17.	ME - Oil, Oleochemicals & Surfactants	Accredited	5 years
18.	ME - Fermentation Technology	Accredited	5 years
19.	ME - Polymer Engg. & Technology	Accredited	5 years
20.	ME - Surface Coating Technology	Accredited	5 years
21.	ME - Food Engineering & Technology	Accredited	5 years

(Total number of programmes Accredited vide this letter - Twenty One)

Contd... 2

The Accreditation status awarded to the above programmes of your institution does not imply accreditation to the College / Institution as a whole. (Complete name of the Programme(s) Accredited and its period of validity, as well as the date from which the award is effective, should be quoted unambiguously whenever it is used. The accreditation status of the above programmes is subject to periodic review by the NBA. Secretariat and will be changed if major deficiencies are identified on surveillance. You are also requested to comply with the mandatory disclosure of pertinent information as per the proforma placed in the AICTE website with respect to accredited programmes of your institution. The same information should also appear in the website and information bulletin of your institution clearly indicating the date of publication of the same.

The status awarded to the above programmes of your college / institution is on the presumption that the programmes would maintain the current standards in future. In there are any changes that would effectively alter the status (such as, major changes in faculty strength or changes in the organizational structure, etc.), the same shall be communicated to the undersigned, with an appropriate explanatory note. A comprehensive report submitted by the Chairman of the expert committee who visited your institution and the distribution of markspoints awarded for each programme against the accreditation parameters are enclosed for further necessary action at your end to overcome the shortcomings observed in each programme. If you are not satisfied with the decision of the Board, you may forward your appeal application with requisite fee within thirty days of receipt of this communication.

Let me also take this opportunity to congratulate all those who have contributed to the quality enhancement of programmes that secured accreditation by NBA.

With best wishes,

Yours Truly,

(Tabassum Naqvi)

C.C. :

1. **The Vice-Chancellor,
University of Mumbai
Mumbai (MS)**
2. **The Director,
Directorate of Technical Education,
Govt. of Maharashtra.,
3, Mahapalika Marg,
Mumbai – 400 001 (MS)**
3. **The Regional Officer,
All India Council for Technical Education
Western Regional Office,
2nd Floor, Industrial Assurance Building,
V.N. Road, Opp. Churchgate Rly Station,
Churchgate, Mumbai – 400 020 (MS)**
4. **Accreditation File**
5. **Guard File.**

(Tabassum Naqvi)

49. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths:

- One of the oldest (a sort of heritage status) and reputed institution dedicated to Textile processes and technologies with a remarkable rate of growth
- Teaching (both UG and PG) and research programmes exist in a large variety of frontier as well as unique areas.
- Well qualified, senior and experienced faculty.
- Excellent B.Tech programmes.
- Academically, administratively and financially autonomous status of the institute.
- Academic programmes focused on employability of students.
- Recognition of excellence of research by various funding agencies which have provided special funds for various activities which includes FIST programme of DST, UGC-SAP etc.
- Ratio of UG to PG students is nearly unity and no. of PhD students is very large.
- A large no. of high monetary value sponsored research projects.
- A large no. consultancy projects.
- Excellent rewards and awards for achievements by the faculty.
- Excellent record of research publications in reputed journals.
- Active and influential alumni; a large no. of alumni have started industries.
- Extensive computerization of information and activities of the institute.
- Excellent interaction with industries.
- Projects as a part of course in Final Year B. Tech is a good idea. Projects are of high quality and are industry oriented.

Weaknesses:

- Limited campus space
- Limited hostel facilities
- No specific contact hours for PG students. Hours may be inadequate in comparison with other institutions in the country.
- Limited number of faculty and no recruitment in last five years.
- Modernisation of labs is longtime need.

Opportunities and challenges:

The textile business has not been restricted only to the field of textile fabrics and apparels and in the modern world increasing amount of textile and composites are being used in frontier technical textile areas such as geo textile, sport textile, medical textile, home furnishing, protective textile, automotive textile etc. Hence the India's contribution to these about 1000Bn US\$ global business is targeted to be about 100Bn US\$ from the present 50Bn US\$ export. Additionally at the domestic front the target of another 200Bn US\$ indicates that these sector has tremendous opportunities to grow. Looking at India's fast growing economy an increasing amount of investment (domestic and Foreign) in infrastructure, automobiles, reality sectors,

medical fields etc, there will be further boost in the growth of the conventional as well as technical textile field. The young and educated population of India is going to play an important role in consumption of these materials. In other words external environment, government policy support, great demand on domestic sector for conventional and technical textiles, encouraging business atmosphere and good raw material based are some of the opportunities for Indian textile to grow and thus the demand for the human resources trained in Fibre and Textile Processing Technology will accordingly increase.

Some of the challenges however are less attention and investment made in innovation and research and development, limited availability of the fellowships for those who want to pursue higher studies in the field of textiles, as well as restricted funding for infrastructure and laboratory developments. There is also demand for increase in the faculty which is long overdue. Many of the faculty post are also vacant for number of years. Thus if we continue to work under such challenges and constrain without addressing them there is a possibility that the foreign universities will attract the best of the talent from the student community and that will in fact hurt badly the contribution of the institute. As far as textile sector is concerned shortage of labour and utilities such as power and water, low incentives for up gradation as well as environment protection and application of new technology, higher money cost, poor infrastructure and congested ports etc are the challenges.

50. Future plans of the department.

- Increase in the number of research scholars mainly M-Tech and M.Sc. Textile Chemistry and similarly Ph.D Tech and Ph.D Textile Chemistry, Ph.D Sci and Biotechnology.
- We shall continue to add new equipments to further equip our laboratories required for research and pilot plant studies. This will help us in advanced facilities required for new area of research as depicted below.
- New areas of research such as Nanotechnology, Biotechnology, Functional finishes, digital printing, electrospinning, wet spinning, coating, composites etc. will be given further boost to establish the foundation of this kind of work more firmly.
- More linkage with the universities within and abroad will be established so also with the industry. This is expected to reflect in better exposure to the students and also implementation of innovative research activities by cross cultivation.
- Dept plans to establish number of centres of excellence which would be of great value to the textile industry where our department can contribute in a great way; namely
 - ✓ Centre for fabric care.
 - ✓ Centre for processing of unconventional Natural fibres
 - ✓ Centre for Fibre reinforced composites
 - ✓ Centre for Sustainable Textile processing
 - ✓ Centre for Green Processing of Textiles

Food Engineering and Technology Department

This department earlier known as Foods & Drugs started in 1943 with the institution of two-year post B.Sc. course leading to B.Sc. (Tech) degree in Chemistry of Foods and Drugs. Later in 1949 this course was revised to a full-fledged degree course in the discipline of Food Technology. Thus, U.I.C.T. is the pioneer institute in the whole country to offer specialized education in Food Technology. In 1965, this course was changed to three-year (post B.Sc.) that has now become four-year post H.Sc. (XIIth std.) B.Tech. course in line with the national pattern. Masters programme in Fermentation Technology was introduced in 1966 and till date U.I.C.T. is the only institute in the country offering this specialization. To keep up with the present times, the course in fermentation technology has been restructured as food biotechnology which is supported by Department of Biotechnology (DBT), Govt. of India.

There are eight faculty members and several distinguished persons from industry and other institutes are invited as visiting fellows for giving quality input to the education and training imparted to the students. Professor D.V.Tamhane and Professor P.J.Dubash Endowments provide opportunities to research students in a variety of activities. The major research interests include Carbohydrate Chemistry & Technology with focus on Indian Traditional Foods; Fermentation Technology with focus on Enzymes, Plant Cell Culture, Nutraceuticals & GM Foods and Food Microbiology related to Quality, Safety and Application of New Technology.

The department is supported by UGC as a Center for Advanced Studies (CAS-I) and continued support by way of Ph.D. fellowships under the SAP program. In addition to this the department is also supported time to time by AICTE, DST, CSIR, ICMR to name some. The faculty members are well connected to national and multi-national establishments and involved in research and consultancy. Support from TEQIP too facilitated many students and faculty in attending conferences and showcasing their work. ICT has been active in instituting several merit-cum-means scholarship for the needy and meritorious undergraduate students.

The department has successfully established the collaborations with universities worldwide through joint collaborative programs with faculty colleagues in the FETD under commonwealth programmes to work at Rutgers, State University of New Jersey (USA), Washington State University, Pullman (USA), Saskatchewan University (Canada), University of Aalto (Finland), Queens University, Belfast and many more. Our interaction with the industry has been on an increase with mutual support and benefit to all concerned. The faculty in the department are closely associated with Food Safety and Standards Authority of India (FSSAI) and involved in various scientific committees and policy making.

FETD also takes pride in playing leading role in co-curricular as well extension activities at ICT and also through professional body, Association of Food Scientists and Technologists (India) [AFST (I)].

MISSION

Establishing a center of excellence to provide demand driven, value-based and quality technical education to make India a developed country through socio-economic transformation.

VISION

- To improve food, especially Indian traditional foods, in terms of nutrition, safety and functionality employing fundamental and applied sciences.
- To produce trained personnel of highest standards for the benefit of the industry and society, in the field of food engineering & technology and food biotechnology.
- To provide leadership in areas of education, research, innovations and solutions in food and biotech sciences, technology and engineering to direct overall activity towards economic growth of India.

1. **Year of establishment :** 1943

2. **Is the Department part of a School/Faculty of the university?** No

3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.):** UG, PG and PhD

- B.Tech. (Food Engineering & Technology);
- MTech (Food Engineering & Technology, Food Biotechnology, Bioprocess Technology);
- PhD (Tech) (Food Engineering & Technology, Food Biotechnology, Bioprocess Technology)
- PhD (Sci) (Biotechnology, Biochemistry and Food Science)

4. **Interdisciplinary programmes and departments involved**

Sl. No	Subject code	Interdisciplinary courses	Year	Department involved
1	CHT 1121	Inorganic Chemistry	1st	CH
2	CHT 1131	Organic Chemistry-I	1st	CH
3	MAT 1101	Applied Mathematics-I	1st	MA
4	PYT 1101	Applied Physics-I	1st	PY
5	GEP 1101	Engineering Graphics-I	1st	CE

6	PYP 1102	Physics Laboratory	1st	PY
7	CHP 1122	Inorganic Chemistry Laboratory	1st	CH
8	CHP 1132	Organic Chemistry Laboratory	1st	CH
9	CHT 1231	Organic Chemistry-II	1st	CH
10	CHT 1211	Analytical Chemistry	1st	CH
11	CET 1501	Material & Energy Balance Calculations	1st	CE
12	MAT 1102	Applied Mathematics-II	1st	MA
13	PYT 1103	Applied Physics-II	1st	PY
14	MAP 1201	Engineering Applications of Computers	1st	MA
15	CHP 1232	Organic Chemistry Laboratory	1st	CH
16	CHP 1222	Analytical Chemistry Laboratory	1st	CH
17	HUP 1101	Communication Skills	1st	HU
18		Engg Mechanics & Strength of Materials	2nd	
19		Electrical and Electronics Engineering*	2nd	
20		Physical Chemistry	2nd	CH
21		Electrical and Electronics Engineering Lab	2nd	
22		Physical Chemistry Laboratory	2nd	CH
23		Transport Phenomena	2nd	CE

5. **Courses in collaboration with other universities, industries, foreign institutions, etc.-**
Nil
6. **Details of programmes discontinued, if any, with reasons: Not Applicable**
7. **Examination System:** Semester based Credit System
8. **Participation of the department in the courses offered by other departments:**
Chemical Engineering, Oils, Pharmaceuticals & Dyes Department.
9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	2	1	2
Associate Professors	3	2	3
Asst. Professors	3	3	2
Others	-	-	-

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	Experience Years	PhD students guided in last four years
Dr. S. S. Lele	Ph.D. (Tech.)	Professor	Biochemical Engg	37	9
Dr. R. S. Singhal	Ph.D. (Tech.)	Professor	Food Technology	27	12
Dr. U.S. Annapure	Ph.D. (Tech.)	Associate Professor	Food Engg & Technology	15	4
Dr. Laxmi Ananthanarayan	Ph.D. (Tech.)	Associate Professor	Food Engg & Technology	30	0
Dr. S. S. Arya	Ph.D. (Tech.)	Assistant Professor	Food Technology	7	0
Dr. S. Chakraborty	PhD	Assistant Professor	Food Engineering	1	0
Dr. Jyoti Sagar Gokhale	Ph.D. (Tech.)	UGC-FRP Asst Prof	Biotechnology	1.5	0

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

- Adjunct Professor
 - Prof. K. Niranjana (University of Reading, UK)
 - Dr. Mukund Karwe (Rutgers University, USA)
- Visiting Fellows

- Dr. Hormaz Patwa
- Dr. Vilas Shirhatti
- Dr. Rashmi Motey,
- Dr. Joseph I Lewis
- Dr. Lipi Das
- Dr. Jayant R. Bandekar, BARC, Trombay, Mumbai
- Dr. Rashmi Motey
- Mrs. Smita Kandar
- Dr. Malathy Venkatesh
- Dr. D. R. Rangaprasad, Director, SIES School of Packaging
- Ms. Shruti Baadkar
- Dr. Geeta Ibrahim

12. Percentage of classes taken by temporary faculty Programme-wise

	Degree	Course name	% of classes taken by temporary faculty
1	BTech	Food Engineering & Technology	5
2	MTech	Food Engineering & Technology	5
3	MTech	Food Biotechnology	5
4	MTech	Bioprocess Technology	5
5	MTech	Perfumery & Flavors	5
6	PhD (Tech)	Food Engineering & Technology, Food Biotechnology, Bioprocess Technology	NA
7	PhD	Biotechnology, Biochemistry, Food Science	NA

13. Programme-wise Student Teacher Ratio

	Degree	Course name	Student to teacher ratio
1	BTech	Food Engineering & Technology	17:1
2	MTech	Food Engineering & Technology	5:1
3	MTech	Food Biotechnology	10:1
4	MTech	Bioprocess Technology	30:1
5	MTech	Perfumery & Flavors	5:1
6	PhD (Tech)	Food Engineering & Technology, Food Biotechnology, Bioprocess Technology	15:1
7	PhD	Biotechnology, Biochemistry, Food Science	15:1

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

	Sanctioned	Filled
Administrative Staff	-	0
Support staff	8	7

15. Research thrust areas as recognized by major funding agencies

- Carbohydrate Chemistry & Technology
 - Cereal science & technology
 - Enzymology, enzyme applications, modification of enzymes
 - Food quality analysis
 - Fruits and vegetable processing
- Fermentation Technology & Food Biotechnology
 - Fermented foods
 - Fermentative production and downstream processing of enzymes/metabolites
 - Nutraceuticals & natural pigments
 - Nutrigenomics
 - Plant tissue culture
- Commodity Technologies
 - Food product/process development; instant food premixes
 - Chemistry & technology of traditional foods

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise

Funding agency	PI	Grant Received in Lakh	Title	Duration
DST Govt. of India	Prof. SS Lele	129.89	Holistic approach for commercial processing of fruits and vegetables grown in western Maharashtra	2013-16
DBT Govt. of India	Prof. SS Lele	9.89	DBT JRF Regional Meet	2013
UGC Govt. of India	Dr. SS Arya	1.85	Studies in development of low glycemic index <i>bhakri</i>	2012-14
DST/SERB-MOFPI, Govt. of	Dr. US Annapure Co PI: Dr. R.	22.14	Studies in physico-chemical properties of plasma processed rice grains	2013-14

India	R. Deshmukh				
Centre of Excellence under TEQIP	Prof. RS Singhal	27.00		Process intensification for extraction of turmeric and pepper oleoresin by enzyme-assisted supercritical carbon dioxide	2013-14
UGC Govt. of India	Prof. RS Singhal	7.00		UGC-BSR one time grant for augmenting research facilities	2013-14

17. Inter-institutional collaborative projects and associated grants received

1. National

Topic of investigation	Institute/Organization involved	Grant received (Lakh)
Studies on benzene formation in Indian pickles (RSS)	Bhabha Atomic Research Centre, Mumbai	No grants but facilities & manpower used

2. International:

Topic of investigation	Institute/Organization involved	Grant received (Lakh)
Taste response study of amaranth-quinoa snacks by Indian population (RSS)	Rutgers Centre for Global advancement and International affairs, USA	\$8000
Bio-vanillin using <i>S.boulardii</i>	Queen's University, Belfast, UK	£17000
Stress tolerant osmolytes (RSS)	Queen's University, Belfast, Ireland	No grants but facilities & manpower used
Studies on legume allergens (LA)	Paul Ehrlich Institute, Langden, Germany	€ 6550

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

Funding agency	PI	Grant Received in Lakh	Title	Duration
DST Govt. of India	Prof. SS Lele	129.89	Holistic approach for commercial processing of fruits and vegetables grown in western Maharashtra	2013-16

DBT Govt. of India	Prof. SS Lele	9.89	DBT JRF Regional Meet	2013
UGC Govt. of India	Dr. SS Arya	1.85	Studies in development of low glycemic index <i>bhakri</i>	2012-14
DST/SERB-MOFPI, Govt. of India	Dr. US Annapure Co PI: Dr. R. R. Deshmukh	22.14	Studies in physico-chemical properties of plasma processed rice grains	2013-14
Centre of Excellence under TEQIP	Prof. RS Singhal	27.00	Process intensification for extraction of turmeric and pepper oleoresin by enzyme-assisted supercritical carbon dioxide	2013-14
UGC Govt. of India	Prof. RS Singhal	7.00	UGC-BSR one time grant for augmenting research facilities	2013-14

19. Research facility / centre with

- b. State**
- c. National**
- d. International recognition**

The department has a research facility for the use by the faculty and potential students under the supervisors recognized by the institute and other universities

20. Special research laboratories sponsored by / created by industry or corporate bodies: One

21. Publications:

- * Number of papers published in peer reviewed journals (national / international): **120**
- * Monographs: **1**
- * Chapters in Books : **10**
- * Edited Books: **0**
- * Books with ISBN with details of publishers: **1**
- * Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.): **120**

- * Citation Index – range / average: **268 to 4926**
- * SNIP: **NA**
- * SJR: **NA**
- * Impact Factor – range / average: **0.6-9.0**
- * h-index: **60**

22. Details of patents and income generated: One filed

23. Areas of consultancy and income generated: 10 Lakh per annum

24. Faculty selected nationally / internationally to visit other laboratories / institutions industries in India and abroad:

Professor S. S. Lele	
	<ul style="list-style-type: none"> • Delivered a talk on “Anandache Vidyan” at Kings George on August 20, 2014. • Delivered a talk on "Rasayanashastra- Kalache Ani udyache" at Ruia college on August 27, 2014. • Delivered a talk on Motivation and science in day to day life for students, teachers and staff at Digambar Patkar School on January 30, 2015. • Attended SAP-UGC (Food Sci & Technology) expert committee meeting on June 22, 2015 at Department of Food Science and Technology, Guru Nanak Dev University, Amritsar. • Visted 2 schools, 1 college and addressed 2 womens groups from Sahyadri Educational Trust, Sawarde, Chiplun, Ratnagiri on June 27-28,2015. • Delivered lectures, conducted sessions on career counseling, positive thinking, nutrition and health etc. Total number of beneficiaries – 1800 students, 80 teachers and 70 women.
Professor R. S. Singhal	
	<ul style="list-style-type: none"> • Extraction of forskolin from <i>Coleus forskohlii</i>: some new approaches, a lecture delivered at Bioprocessing India 2014, organized by DBT-ICT Centre, ICT and IIT Bombay, December 17, 2014. • Making agriculture pro-nutrition, a lecture delivered at a seminar on ‘Protein nutrition and novel protein ingredients in the 21st century – tackling the ‘protein problem’, organized by at Chancellors Hotel, Chancellors Way, Moseley Road, Fallowfield, Manchester M14 6ZT, UK, and funded by Department of Science and Technology, new Delhi and

	<p>Royal Society, UK, January 20- 22, 2015.</p> <ul style="list-style-type: none"> • Production of glycine betaine and trehalose by <i>Actinopolyspora halophile</i> (MTCC 263) using acid whey: process details and cell disruption, Jayaranjan Kar and Rekha S. Singhal, a lecture delivered at DAE-BRNS Life Sciences Symposium (LSS-2015) on ‘Advances in Microbiology of Food, Agriculture, Health and Environment’ at Nabhikiya Urja Bhacvan, Anushaktinagar, Mumbai – 400 085, February 3,2015. • Local products for international markets – some issues, a lecture delivered at a conference organized by All India Association of Industries, Ministry of External affairs, Government of India and World Trade Centre on ‘ASEAN-India Cooperation in Food Security, Agriculture Technology & Food Engineering Run-up Event, Mumbai for Delhi Dialogue VII 2015, World Trade Centre, Mumbai, February 12, 2015. • Conducted a technical session for personnel from commercial (sales) and creation and application in the form of four lectures on i) general introduction to food additives, ii) emulsifiers, iii) acidulants and iv) preservatives, at Keva Flavours Pvt Ltd, LBS Marg, Mulund (W), Mumbai – 400 80, March 4, 2015. • Food safety from ‘Farmto- Fork’- an overview, a lecture delivered at a program organized by Indian medical association-Mumbai west branch on the occasion of World Health organization Day on the theme ‘How Safe is Your Food’, IMA Building, Mumbai – 400 049, April 7, 2015. • Conducted lectures on i) Mycotoxins in food, ii) Toxicants that develop during food processing, and iii) Environmental contaminants in food- PCDD and PCDF, during a UGC sponsored Refresher Course on ‘Food Safety and Public Health’, University of Allahabad, April 10-11, 2015. • Building world class research institutions, a lecture delivered at a Leadership Seminar, Vivekananda Auditorium, Ramakrishna Mission, Khar (West), Mumbai – 400052, April 18, 2015.
<p>Dr. Uday S. Annapure</p>	
	<ul style="list-style-type: none"> • Enzymatic pre-treatment for extrusion processing, an invited talk at Bioprocessing India 2014 Jointly organized by Institute of Chemical Technology (ICT), Mumbai and Indian Institute of Technology (IIT), Mumbai during December 17-20, 2014 at ICT, Mumbai. • Low temperature plasma processing for improved cooking qualities of basmati rice”an invited talk at XXIII Indian Convention at XXIII Indian Convention of Food Scientists and Technologists (ICFOST) on 13th-14th December, 2014, at NIFTEM Campus, Kundli, Haryana • Milk Processing and Milk Products, an invited lecture at Keva Flavours Pvt.Ltd. LBS Marg, Mumbai. • Non-Thermal Food Processing, an invited talk at Sharadchandra College of

	<p>Food Technology, Sawarde</p> <ul style="list-style-type: none"> • New Technological trends in processed foods, an invited talk delivered at AGRIVISION-2014, the Conference organized by “Marathwada Association of Small Scale Industries and Agriculture MASSIA)” held at Conference Hall, Garware Stadium, Aurangabad on January 4, 2014.
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25. Faculty serving in National committees b) International committees c) Editorial Boards d) any other (please specify)

Professor S. S. Lele	
	<ul style="list-style-type: none"> • Member, Board of Governance, BRSI 2015-2017. • Member, DBT Star college review committee (2014-2016). • Member, UGC expert advisory committee of SAP-UGC (Food Sci & Technology), Gurunanakdev university, Amritsar -2013-18. • Member, Examination Board, K J Somaiya College of Engineering, Somaiya Vidyavihar, Mumbai. • Mentor, C-CAMP, DBT initiative for Entrepreneurs in Biotech, Bangalore, 2014-15. • Member, Scientific panel on contaminants in food chain of the Food Authority; FSSAI, New Delhi (2013-2016). • Member, Research Recognition Committee in Food Science and Nutrition, SNDT (2009-2014). • Council Member, Indian National Science Academy (INSA-ICSU), 2012-15. • Referee of several International Journals in Biotechnology and Food Engineering. • Life member of a number of national and international professional bodies engaged in activities related to Science & Technology and Women Scientists, AFST, AMI, BRSI, IChE, UAA.
Professor R. S. Singhal	
	<ul style="list-style-type: none"> • Member, Editorial Board, International Journal of Food Science and Nutrition. • Member, Editorial Board, Plant Foods for Human Nutrition. • Member, Selection committee for promotions, BARC, Mumbai. • Member, Expert group in the area of secondary agriculture, Department of Biotechnology, Government of India. • Member, Selection committee, appointment of Assistant Professors and Associate Professors, Shivaji University, Kolhapur. • Expert, UGC-DSA Programme, University of Mysore. • Life Member, Association of Food Scientists and Technologists (India). • Life Member, Association of Carbohydrate Chemists and Technologists, India. • Member, Advisory Board, Trends in Carbohydrate Research, published by ACCT

	<p>(I).</p> <ul style="list-style-type: none"> • Member, BIPP, BIG, SBIRI, SPARSH and BIRAP, Department of Biotechnology, Government of India • Referee, Several journals in food science and technology, and bioprocess technology • Examiner, Ph.D. thesis at some universities in India
Dr. U. S. Annapure	
	<ul style="list-style-type: none"> • Life Member, Association of Food Scientists and Technologists, India [(AFST(I)]. • Life Member, Association of Carbohydrate Chemists and Technologists of India (ACCTI). • Life Member, Biotech Research Society of India (BRSI). • Member, International Society of Food Engineering (ISFE), USA. • Life Member, UDCT Alumni Association. • Vice-President, Association of Food Scientists and Technologists, India (AFSTI), Mysore.
Dr. Laxmi Anantanarayan	
	<ul style="list-style-type: none"> • Member, Board of Studies, Food and Nutrition at SNDT Women's University, Juhu, Mumbai, 2012-2015. • Life member, AFST(I) • Life Member, Association of Food Scientists and Technologists (India). • Life Member, UDCT Alumni Association • Member, examination of projects, SIES GST, PPT Dept., Nerul, Navi Mumbai
Dr. Shalini Arya	
	<ul style="list-style-type: none"> • Local Executive Committee Member, Association of Food Scientists and Technologists (I), Mumbai Chapter • Life Member, Biotechnology Research Society of India (BRSI), India. • Life Member, Association of Carbohydrate Chemists and Technologists of India. • Member, Society of Chemical Industry (SCI), London. • Member, International Society of Food Engineering (ISFE), Pullman, USA. • Member, CFT-PBN Alumni Association (CPAA), Mumbai
Dr. J. S. Gokhale	
	<ul style="list-style-type: none"> • Life Member, UDCT Alumni Association • Member, AFST(I) • Life Member, BRSI

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

- Prof. RS Singhal, Prof S.S. Lele, Dr. US Annapure and Dr. L Ananthanarayanan conducted refresher courses and incited lectures.
- They are also involved in workshop, training programs.
- Dr. Jyoti Sagar Gokhale is UGC-FRP Asst Prof in the department.

27. Student projects

- % of students who have done in-house projects including inter-departmental projects: **90%**
- % of students doing projects in collaboration with other universities industry / institute: **10%**

28. Awards / recognitions received at the national and international level by faculty, students, doctoral or postdoctoral fellows

Year	Category	No. of award/recognition received by		
		Students	Faculty	Doctoral/Postdoctoral fellow
2011-12	National	1	3	2
2011-12	International	-	-	-
2012-13	National	-	3	-
2012-13	International	-	-	-
2013-14	National	-	-	-
2013-14	International	-	-	--
2014-15	National	-	-	-
2014-15	International	-	-	-

29. Seminars/Conferences/Workshops organized and the source of funding (national/international) with details of outstanding participants, if any.

Seminars/Conferences/Workshops	Year	Source of funding
Two day seminar on 'Innovation in Food Science and Technology to Fuel the Growth of the Indian Food Industry	2012	Association of Food Scientists and Technologists, India
Nutrition Week Activity 2013	2013	Protein Foods & Nutrition Development Association of

		India
Traditional Foods	2013	TEQIP and Association of Food Scientists and Technologists, India
World Food Day Celebration Seminar	2013	Association of Food Scientists and Technologists, India

30. Code of ethics for research followed by the departments:

As per the research committee

31. Student profile programme-wise:

Program name		Application received	Selected		Pass percentage	
			Male	Female	Male	Female
BTech	Food Engineering & Technology	Admission through DTE	13	03	100%	100%
MTech	Food Engineering & Technology	112	02	08	4	3
MTech	Food Biotechnology	83	01	09	6	7
MTech	Bioprocess Technology	194	15	15	16	7
MTech	Perfumery & Flavors	43	02	07	-	-
PhD (Tech)	Food Engineering & Technology, Food Biotechnology, Bioprocess Technology	93	01 onwards	02	7	2 1 2
PhD	Biotechnology, Biochemistry, Food Science	94	03 onwards	04	2	3

32. Diversity of students

Program	Branch	% of students from same university	% of students from other university within the state	% of students from university outside the state	% of students from foreign university

BTech	Food Engineering & Technology	0	0	0	0
MTech	Food Engineering & Technology	0	0	100%	0
MTech	Food Biotechnology	0	60%	40%	0
MTech	Bioprocess Technology	3.33	76.66	6	20
PhD (Tech)	Food Engineering & Technology, Food Biotechnology, Bioprocess Technology	10%	80%	10%-20%	0
PhD	Biotechnology, Biochemistry, Food Science	0	100%	0%	0

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

90% PhD students are GATE qualified among which 5% are also NET qualified.

34. Student progression

Student progression	Percentage against enrolled
BTech to Mtech	30
MTech to PhD	60
PhD to post doctoral	50
Employed through Campus selection	40
Employed through off Campus selection	50
Entrepreneurs	10

35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	80
from other universities within the State	0
from universities from other States from	20
universities outside the country	0

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: One

37. Present details of departmental infrastructural facilities with regard to

No	Name of the Infrastructural Facility	Quantity / Details
a	Library	Updated
b	Internet facilities for staff and students	Internet Provider: Reliance, Tata and NIC. Available Bandwidth: 12 Mbps Broadband
c	Total number of class rooms	4 (16 ft x 20 ft with audio-visual facilities)
d	Class rooms with ICT facility	4 (16 ft x 20 ft with audio-visual facilities)
e	Students' laboratories	3 (each of 20 desks)
f	Research laboratories	7 (state-of-art facilities)

38. List of doctoral, post-doctoral students and Research Associates

**Ph.D (Tech.) [Food Engineering and Technology (FET)/ Food Biotechnology (FBT) /
Bioprocess Technology (BPT)]**

Sr. No.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Sarkar Shatabhisha* (UGC SAP)	SLIET, Punjab	Microencapsulation of sensitive food ingredients (FET)	Aug 2009	RSS
2	Surve Vedprakash	Marathwada Krishi Vidyapeeth Parbhani	Studies in traditional fermented foods	September 2010	USA
3	Sardar Bikash (UGC SAP)	ICT, Mumbai	Encapsulation of sensitive bioactive food constituents (FET)	July 2010	RSS
4	Jadhav Manisha * (UGC SAP)	SLIET, Punjab	Development of extruded food products based on sorghum (FET)	Sept 2010	USA
5	Bhotmange Devshri * (UGC SAP)	ICT, Mumbai	Fermentative production and downstream processing of chondroitin sulphate (BPT)	June 2011	RSS
6	Bawane Amruta* (UGC SAP)	SLIET, Punjab	Studies on stability of added constituents during extrusion (FET)	April 2014	RSS
7	Bajaj Vinit	ICT,	Utilization of waste material for value	July 2011	USA

	(UGC SAP)	Mumbai	added products (BPT)		
8	Rathod Rahul (UGC SAP)	ICT, Mumbai	Development of extruded food product (FET)	July 2011	USA
9	Srivastava Neha* (UGC SAP)	D.Y.Patil, Navi Mumbai	Biotechnological aspects of <i>idli</i> batter fermentation (FBT)	June 2011	LA
10	Giri Shital* (UGC SAP)	LIT, Nagpur	Studies in development of low glycemic index foods (FET)	June 2011	LA
11	Gat Yogesh (UGC SAP)	SLIET, Punjab	Studies on extrusion cooking technology (FET)	May 2011	LA
12	Joshi Chetan (UGC SAP)	ICT, Mumbai	Fermentative production and downstream processing of zeaxanthin (BPT)	July 2011	RSS
13	Choudhari Sandeep (UGC SAP)	ICT, Mumbai	Fermentative production, downstream processing and applications of microbial cutinase (BPT)	April 2012	RSS
14	Waghmare Aashish (UGC SAP)	ICT, Mumbai	Extraction of bio-oil and valuable products from microalgae (BPT)	July 2013	SSA
15	Palamthodi Shanoba *(UGC SAP)	SRM, Chennai	Studies on gourd family vegetables for their biotechnological applications with special emphasis on <i>Lagenaria siceraria</i> (FBT)	July 2012	SSL
16	Bhaskar Bincy * (DBT)	D.Y.Patil, Navi Mumbai	Studies on bioactive peptides from selected legumes commonly consumed in India (FBT)	July 2012	LA
17	Kulkarni Anuja* (UGC-SAP)	D.Y.Patil, Navi Mumbai	Studies in biotechnological aspects of food allergens (FBT)	July 2012	LA
18	Gaikwad Sonali* (UGC-SAP)	MAU, Parbhani	Chemistry and technology of cereal- legume based Indian traditional food (FET)	July 2013	SSA
19	Kar Jayaranjan (UGC SAP)	D.Y.Patil, Navi Mumbai	Fermentative production, downstream processing and application of glycine betaine (FBT)	June 2013	RSS
20	Tupe Rupesh (UGC SAP)	ICT, Mumbai	Studies on functional foods (FET)	October 2012	LA
21	Patil Sonal* (UGC SAP)	ICT, Mumbai	Studies on production and characterization of gluten-free flat bread (FET)	July 2013	SSA

22	T. Rohit (UGC SAP)	MAU, Parbhani	Studies on effect of cold plasma processing on properties of rice varieties (FET)	December 2012	USA
23	Purohit Pulkit (UGC SAP)	IICPT, Tamil Nadu	Characterization of jamun and karwand fruits and their utilization in cereal/fruit bars (FET)	February 2014	SSL
24	Sonawane Sachin (UGC SAP)	ICT, Mumbai	Studied on fruit seed pepties and its application in food preservation (FET)	July 2013	SSA
25	Arekar Chetan (UGC SAP)	Karunya University, Coimbatore	Studies in tropical fruit wines (FBT)	In-process	SSL
26	Deshaware Deshaware *(DBT)	Amity University, Delhi	Study on genetic polymorphism of TAS2R38 bitter taste receptor gene in an Indian population and approaches for debittering of glycosides (FBT)	July 2012	RSS
27	K. V. Umesh (UGC SAP)	ICT, Mumbai	Enhancing bioavailability of nutraceuticals (FBT)	December 2012	RSS
28	Regubalan Baburaj	Anna University, AICT Campus, Chennai	Studies in microbial characterization, nutritional improvement and preservation of <i>idli</i> batter (FET)	September 2013	LA
29	Shah Nirali Nitin	ICT, Mumbai	Hydrophobic modification of biopolymers (FET)	May 2014	RSS
30	Desai Mihir Mukund	UICT, NMU, Jalgaon	Studies on indigenous oils and deoiled meals (FET)	September 2013	SSL
31	Bhushette Pravin Rajkumar	UICT, NMU, Jalgaon	Study on new exudate gums (FET)	October 2013	USA
32	Nagavekar Nupur Shantaram	ICT, Mumbai	Extraction technologies for novel food ingredients (FBT)	May 2014	RSS
33	Sorde Kaurna Liladas	UICT, NMU, Jalgaon	Studies in fermentative production of microbial Transglutaminase (FBT)	October 2013	LA
34	Kadam Deepak Sunil	ICT, Mumbai	Studies on utilization of <i>Nigella sativum</i> and <i>Lepidium sativum</i> seedf cake (FBT)	May 2014	SSL
35	Singhu Bhupender	Shri Ramaswami Memorial University,	Enhanced production of glutathione (FBT)	October 2013	USA

		Chennai			
36	Bedade Dattatray Kashinath	ICT, Mumbai	Fermentative production, downstream processing and applications of acrylamidase (BPT)	May 2014	RSS
37	Tulamandi Sreedath	TNAU/Cornell University joint degree	Development of biopolymer films using agricultural biomass	January 2014	RSS
38	Chaudhari Bhushan	North Maharashtra University, Jalgaon	Study on new seed gums	April 2015	USA

Ph.D. Science [Biotechnology (BT)/ Biochemistry (BC)/ Food Science (FS)]

Sr. No.	Research Scholar & Sponsors	Previous Institute	Project Title	Date of Registration	Guide
1	Inarkar Mangesh (UGC SAP)	Department of Biotechnology, University of Mumbai	Studies for carbon sequestration produced by alcohol distillery (BT)	Aug 2009	SSL
2	Bandekar Harshali * (UGC SAP)	St. Xavier's College, Mumbai	Studies on Ficus benghalensis using biotechnological approach (BT)	Sept 2010	SSL
3	Gohil Dhiraj (UGC SAP)	Institute of Science, Mumbai	Fermentation of dietary fibers <i>in vitro</i> with human colonic bacteria (BT)	Sept 2010	SSL
4	Subramaniam Jayshree * (UGC SAP)	Ruia College, Mumbai	Fermentative production and downstream processing of fucoxanthin (BT)	Aug 2010	RSS
5	Hingse Swarali * (UGC SAP)	KET's V.G. Vaze College, Mumbai	Studies in production of vanillin using biotechnological approaches (BT)	Sept 2010	USA
6	Digole* Shraddha (UGC SAP)	Institute of Science, Mumbai	Fermentative production and downstream processing of mycophenolic acid using biotechnological approach (BT)	Sept 2010	USA
7	Misra Rachana*	University of Allahabad	Study on plant gums (BT)		USA
8	Dabir Mugdha* (UGC SAP)	NMU, Jalgaon	Studies in characterization and deactivation of fruit based	June 2013	LA

			enzymes (BC)		
9	Datta Suprama*(CSIR)	Birla College, Mumbai	Characterization and profiling of <i>Saccharomyces boulardii</i> (BT)	July 2013	USA
10	Bagul Vaishali *(UGC SAP)	KTHM College, Nashik	Studies in fermentative production and downstream processing of docosahexanoic acid (BT)	August 2013	USA
11	Insulkar Prajakta* (UGC SAP)	Birla College, Kalyan	Study of production of exopoly saccharide from halorolerant organisms and their biotechnological application (BT)	In-process	SSL
12	Momin Bilal M. Rahman (UGC SAP)	Institute of Science, Mumbai	Fermentative production and downstream processing of arginase (BT)	July 2013	USA
13	Vaidya Aniruddha (UGC SAP)	Dept. of Microbiology, University of Pune	Development of phage-based biosensor (BT)	December 2012	USA
14	Ghanate Aarti *(UGC SAP)	Shivaji University, Kolhapur	Studies in traditional foods: process and technology development (BT)	December 2012	USA
15	Bhagwat Ashlesha *(UGC SAP)	K.J. Somaiya College, Mumbai	Studies in probiotics (BT)	December 2012	USA
16	Jamakhani Majeed (UGC SAP)	SASTRA University, Tamilnadu	Study on isolation and characterization of tomato allergens (BT)	July 2013	SSL
17	Vishwasrao Chandrahas (UGC SAP)	Ruia College, Mumbai	Biochemical characterization of selected indigenous fruit varieties during ripening and extended shelf life (BC)	December 2012	LA
18	Amane Dhanashree *(UGC SAP)	K.J. Somaiya College, Mumbai	Development of biochemical methods for detection of adulteration in legume-based traditional food products (BC)	December 2012	LA
19	Deorukhkar Anuradha *(UGC SAP)	SIES College, Sion	Biochemical studies and characterization of isoflavones occurring in commonly consumed Indian legumes (BC)	December 2012	LA
20	Bannerji Anamika Amit *	SNDT University, Mumbai	Indian flat breads: physicochemical and nutritional aspects (FS)	September 2013	SSL

21	Janve Madhura Pramod *	University of Mumbai	Chelates of iron with amino acids and sugars for improved bioavailability and stability (FS)	September 2013	RSS
22	Bakshi Gayatri Girish *	University of Mumbai	Studies in pectinase enzymes and associated inhibitors in selected fruits (FS)	September 2013	LA
23	Mishra Rachna *	University of Allahabad	PhD (FS)	In process	USA
24	Salve Akshata Raosaheb *	University of Mumbai	Development of peanut based functional foods (FS)	September 2013	SSA
25	Dash Pratipanna *	University of Mumbai	Studies on enzymatic protein hydrolysis and characterization of protein hydrolysates (BC)	October 2013	LA
26	Pathan Fayaz Latif	MPKV, Rahuri	Studies on effect of plasma processing on physicochemical properties of legumes (FS)	May 2014	USA

SSL: Prof. S. S. Lele; RSS: Prof. R. S. Singhal; USA: Dr. U.S. Annpure; LA: Dr. LaxmiAnanthanarayan; SSA: Dr. S. S.Arya

39. Number of post graduate students getting financial assistance from the university:
Nil

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. Not applicable

41. Does the department obtain feedback from

- faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. The feedback are discussed in board meeting and necessary steps are taken.

- students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Yes. They are discussed in faculty meeting for further action or improvement.

alumni and employers on the programmes offered and how does the department utilize the feedback? **No.**

42. List the distinguished alumni of the department

- Dr. Rakesh Bamzai
- L.R. Chadha
- Prof. CJK Henry
- Prof. PR Kulkarni

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Sr. No.	Date	Fellowship	Distinguished Speaker / Affiliation	Title of Lecture
1	July 18, 2014	-	Mr. Anil Chittar	Food process equipment, design and challenges
2	July 19, 2014	-	Prof. S. N. Upadhyaya	Biomass as feedstock for chemical processes
3	August 12, 2014	-	Prof. Mukund V. Karwe	High pressure processing of foods: opportunities and challenges
4	October 8, 2014	-	Dr. S. P. Kochchar	Frying oils and TOM for quality snack production
6	November 7, 2014	-	Prof. Adinpunya Mitra, IIT Kharagpur	Discovering metabolic route to phenolic fragrance formation in <i>Hemidesmus indicus</i> (Anantmul) roots
7	January 1, 2015	-	Prof. K. Niranjan, University of Reading, UK	How to publish successfully in an era of changing publishing paradigm
8	January 17, 2015	Golden Jubilee Visiting Fellowship	Dr. Alankar Vaidya, Scientist, Scion, New Zealand	An efficient process for the conversion of Radiata pine to sugars suitable for biofuel production
9	January 30, 2015	Professor B. D. Tilak Visiting Fellowship Endowment	Dr. Amaraendra N. Pathak, Dean Research, Amity University Rajasthan, Jaipur, India	i) Modern technology management and its strategy for chemical and allied industries ii) Trouble shooting during antibiotics production in fermentation industry
10	June 30, 2011	Prof.J.V.Bhat Memorial Lecture	Dr. Rohini Kelkar, Professor and Head, Dept. of Microbiology, Tata Memorial Hospital, Parel.	Infection Control and "Food Safety" in Hospitals
11		Prof. A.	Dr. G. M.Tewari, GM	Water Crises.

	June 30, 2011	Sreenivasan Endowment Lecture	(Retd), Coca-Cola	
12	January 24, 2012	Marico Industries Endowment Lecture	Ms. Chinmayee Deulgaonkar, Manager, Business Build, DET Norske Varitas (DNV), Mumbai	Hazard Analysis in Food Industry
13	February 9, 2012	Prof. B. D. Tilak Fellowship Lecture	Dr. Rajendra Kokane Professor and Head, Livestock Product Technology, Veterinary College, Mumbai	Protecting the Safety of Milk
14	February 17, 2012	Lupin Visiting Fellowship Lecture	Dr. Girish B. Mahajan, Senior Group Leader, Anti-infective Screening & Prokaryote Isolation, Department of Natural Products, Piramal Healthcare	Microbes : A source for New Antibiotics for Bad Bugs
15	February 22, 2012	Prof. A. Sreenivasan Endowment Lecture	Dr.Kalpagam Polasa, Head, Food & Drug Toxicology Research Centre, National Institute of Nutrition (ICMR), Hyderabad	Innovations in Food Safety- Challenges and Opportunities Including Nanotechnological Applications
16	June 15, 2012	Prof. A. Sreenivasan Endowment Lecture	Mr. Balaji Shetty, Oxyrich	Package Drinking Water-Safety Issues and Growth
17	June 15, 2012	Prof. J. V.Bhat Memorial Lecture	Dr. Anil Patil, Jain Irrigation	Tissue culture-Way forward to Food Security
18	July 22, 2013	Golden Jubilee Visiting Fellowship	Dr. Shyam Sablani, Associate Professor of Food Engineering Biological Systems Engineering	Smart Packaging Technologies
19	August 16, 2013	Marico Industries	Professor Jayant R. Bandekar, Professor	Microbiological aspects of radiation processing of food

		Visiting Fellowship	Homi Bhabha National Institute(Deemed University), Head, Radiation Biology & Health Sciences Division (BARC)	
20	August 31, 2013	-	Dr. S. K. Samant, Vice President, R & D, Cadbury India Ltd.	Recent advances in chocolate manufacturing
21	September 07, 2013	Guest lecture jointly with PFNDAI	Mr.U. Purnachand, Solae	Advantages of Soya in Sports & other Physical Activities
22	September 07, 2013	Guest lecture jointly with PFNDAI	Ms. Rupali Jadhav DSM Nutrition	Importance of Nutrition in Sports
23	September 07, 2013	Guest lecture jointly with PFNDAI	Ms. Madhavi Trivedi, Kelloggs	Breakfast Cereals for Active & Sports Persons
24	September 07, 2013	Guest lecture jointly with PFNDAI	Mr. Anek Arora, Roquette India	Newer Ingredients in Sports & Weight Management
25	September 16, 2013	Organized under TEQIP	Prof. Stephen Knabel Prof. of Food Science, Department of Food Science, Pennsylvania State University, USA.	Bacterial Growth Curves and Their Implications for Food Safety
26	September 16, 2013	Organized under TEQIP	Dr. Sara Lomonaco Assistant Professor of Food Safety, Department of Animal Pathology, University of Torino, Italy	<i>Listeria monocytogenes</i> : A Unique Foodborne Pathogen
27	September 23, 2013	-	Mr. Dave Advisor, FSSAI	Significance of CODEX and other related aspects
28	September	Organized	Prof. Chincholkar,	A tiny microbe can chelate iron:

	27, 2013	under TEQIP	North Maharashtra University, Jalgoan	Siderophore
29	October 18, 2013	Guest lecture Jointly with AFST(I) Mumbai	Aarti Karkhanis, Applications Manager, M/s Thermo Fisher Scientific India Pvt. Ltd., Mumbai	Applications of GC-GCMS/MS in Food Safety
30	November 18, 2013	Organized under TEQIP	Dr. V. malathy	Newer applications of enzymes in food processing
31	April 4, 2014	Marico Industries Fellowship Lecture	Dr. Shobha Rao	Food Technology Challenges Ahead
32	April 5, 2014	Golden Jubille Visiting Lecture	Dr. R Rangaprasad	Innovative Packaging Technologies

44. List the teaching methods adopted by the faculty for different programmes

- Audio-visual presentation for theory and practical classes
- Mini projects (Individual and group based projects) in individual subjects
- Research oriented final year projects and Research paper publication in conference/seminars/journals
- Invited guest lectures are regularly arranged
- Remedial classes for slow learners
- Industrial visits are arranged
- Out-of-syllabus study

45. How does the department ensure that program objectives are constantly met and learning outcomes are monitored?

They are performed under the guidance of faculty through continuous evaluation tests, periodic class tests, quiz, critical assessment of research papers, seminars beyond the domain, seminars, workshops and two examinations.

46. Highlight the participation of students and faculty in extension activities.

- National and international conferences
- Symposium

- Seminars
- Guest lectures
- Workshops

47. Give details of “beyond syllabus scholarly activities” of the department.

Organizing co-curricular events and personnel training on various aspects such as:

- Bio-Processing of Agri-Residues
- Microbiological aspects of radiation processing of food
- Nutrition Week Activity 2013
- Bacterial Growth Curves and Their Implications for Food Safety
- *Listeria monocytogenes*: A Unique Foodborne Pathogen
- Seminar on Traditional Foods 2013
- Technical session on 'Traditional Food: Challenges and Opportunities'
- World Food Day 2013
- DBT-JRF Regional Meet

48. State whether the programme/ department is accredited/ graded by other agencies?

Not applicable

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Since the inception of the faculty members of FETD made significant contributions for the advancement of knowledge in disciplines such as of food engineering & technology and food biotechnology through research, innovation as well as lectures. The faculty members wrote books and chapters in the books on trust areas of food biotechnology, food engineering and technology. The renowned faculties of FETD are in the habit of publishing more than 30 research papers per year in international recognized journals. Every year the faculty members are invited speakers on international seminars or workshops and there are international visitors in the department. The former students of the department are well placed and some of them occupy the chair of professors and head at various Indian Universities.

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strength

- Highly qualified and experienced faculty

- Over-supportive technical staff
- Cooperation and understanding in the department
- Having an interdisciplinary culture as students of all other departments
- Collaborative teaching as well as research

Weaknesses

- More demanding infrastructure
- Less number of faculty with respect to students
- Lack of trained technical staff

Opportunities

- External Project Work
- Attraction of more students from other than Maharashtra
- Faculty Achievements
- Faculty and student monitoring
- Scholarly activities

Challenges

- To provide state-of-art research facility to students
- To make the department one of most sought after in India
- Frequent up gradation of instruments
- Competitive funds for research

51. Future plans of the department.

Establishing a centre of excellence to provide demand driven, value-based and quality technical education to make India a developed country through socio-economic transformation

General Engineering Department

General Engineering Department of the Institute was established in the year 1954 and is involved in teaching undergraduate as well as postgraduate students of the institute. The Department is running a full time master's course M. E. in Plastics Engineering from 1972. Students having basic qualification in Mechanical, Production, Plastic/ polymer, Electrical and chemical engineering and technology are eligible for admission to this course. The course deals with processing of plastics, composites, design of molds, design of processing tools/ machinery, CAD, CAM and CAE and testing, development of new materials for industrial as well as domestic applications. Apart from laboratories such as workshop, electrical and electronics, applied mechanics and strength of materials, the Department has provision for special facilities of processing of plastic and polymer composites, testing of plastics, and computer aided design and drawing laboratories. These laboratories cater to the needs of the under graduate and post graduate students of the Department and institute. The Department has plastic processing equipment such as micro-processor controlled injection molding machine with molds of standard mechanical test pieces, blow molding machine, rotational molding machine, and single screw extruder. Department have licensed CAD software such as Mold flow, Pro-engineer and Solid Works with high end computer facilities. It also has testing machines such as impact tester, MFI tester, hardness tester etc. GATE qualified candidates of M. E. in Plastics Engineering receive AICTE fellowships and TEQIP program fellowships. Doctoral students of Plastics/ Mechanical/ Production/ Electrical/ Civil/ Engineering will get 1 UGC SAP fellowship per year. Candidates can register for Ph. D. in Plastics/ Mechanical/ Production/ Electrical/ Civil/ Engineering either full time or as a external candidates (Only for teachers/ employees from Government organizations).

Department is having specialized teaching faculty from mechanical, plastics, production, civil, electrical and electronics branches. Most of the faculty are guides for the masters and doctoral programs of the institute in the area of their specialization. Students can take up research in multidisciplinary areas. Department is also responsible for Civil and Electrical maintenance and repairs of institute buildings, laboratories, faculty quarters and hostels. Department is actively involved in the development of the new buildings and infrastructural facilities. Department looks after Liaisoning with BEST and Municipal Corporation for all the requirements of the institute. The department has recently setup cement composites laboratory for doing work on different cement composites using

Industrial wastes, construction chemicals, fibres etc.

1. **Year of establishment** : 1950
2. **Is the Department part of a School/Faculty of the university? yes**
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)**

M.E (Plastic Engineering) Post Graduate Course, Ph.D (Tech) in Mechanical, Civil, Polymer ,Electrical and Electronics Engineering.

4. **Interdisciplinary programmes and departments involved:**

Polymer and Surface Engineering Department.

5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
NIL
6. **Details of programmes discontinued, if any, with reasons** : NIL
7. **Examination System:** Semester system
8. **Participation of the department in the courses offered by other departments:**

Undergraduate Courses B.Chem.Engg and B.Tech (All Branches)

Structural Mechanics to S Y Chem Engg

Engineering Mechanics and Strength of Materials to S Y B Tech (all Branches)

Process Equipment Design and Drawing 1

Engineering Graphics I for B.chem.Engg and B.Tech (all Branches)

Electrical Engineering and Electronics : B.chem.Engg and B.Tech (all Branches)

Process Equipment Design and Drawing 2

Engineering Graphics 2 for B.chem.Engg

Energy Engineering for B.chem.Engg .

Advanced Strength of Materials (Elective) for B.chem.Engg

Design & Fabrication of Molds I

ii) Design & Fabrication of Molds II

iii) Design of Molds (Drawing)

9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	1	----	---
Associate Professors	4	5	1
Asst. Professors	4	2	---
Others	----	---	---

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Dr. A.C. Rao	B.E. (Mech.), M.E. (Mech.), PhD (Plastic Engg.) (Tech)	Associate Professor in Mechanical Engineering	Plastic Engineering	24	One PhD, Five M.E. (Plastic)
Dr. S.P.Deshmukh	B.E.(Prod), M.E.(Prod), PhD(Tech) Plastic Engg.	Workshop Superintendent / Associate Professor	Plastic Engineering	19	One PhD, Five M.E.
Dr. D.D. Sarode	B.E. (Civil) M.E., PhD (Civil)	Associate Professor in Civil Engg.	Civil / Structural Engg.	19	One PhD, Four M.E.
Dr. V.R. Gaval	B.E.(Prod), M.E.(Plastic),PhD (Tech) Plastic	Associate Professor (CAS) in General Engg.	Plastic Engg.	23	Four M.E.
Dr. R.S.N. Sahai	B.E. (Mech), M.E.(Plastic),PhD (Tech) Plastic	Assistant Professor (Selection Grade) in Mechanical Engg.	Plastic Engg.	18	Four M.E.
Dr. M.A.K.Kerawalla	B.E.(Electrical) M.E.(Electrical)	Associate Professor in Electrical Engg.	Electrical Engg.	28	-
Ms. Prerna Goswami	B.E. (Electrical) M.E.(Electrical)	Assistant Professor in General Engg.	Electrical Engg.	18	-

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Dr.D.D.Kale for teaching Polymer Chemistry, Dr M.B.Parmar

12. **Percentage of classes taken by temporary faculty – programme-wise information:**
20%
13. **Programme-wise Student Teacher Ratio :** 2: 1 for M.E(Plastic Engg)
14. **Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual :** Sanctioned : 36 (35 Technical and 1 administrative), Filled : 25
15. **Research thrust areas as recognized by major funding agencies :** Polymer processing and Composites.
16. **Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise. Two faculties**
 - 1) Cycle time reduction in rotomolding funding agency is UGC from 2011-2014 & Total amount is 10 lacks , PI/ Co-PI – No.
 - 2) Development of water resistant plaster from gypsum . Total Grant sanctioned: 21.26 lakhs Funding agency RCF Ltd.
17. **Inter-institutional collaborative projects and associated grants received : NIL**
 - a) National collaboration
 - b) International collaboration
18. **Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received : NIL**
19. **Research facility / centre with : NIL**
 - a. state recognition
 - b. national recognition
 - c. international recognition
20. **Special research laboratories sponsored by / created by industry or corporate bodies: NIL**
21. **Publications:**

	Dr. S. P. Deshmukh	Dr. A. C. Rao	Dr. D. D. Sarode	Dr. V. R. Gaval	Dr. R. S. N. Sahai	P. Goswami
Number of papers published in peer reviewed	23	6	6	4	3	2

journals (national / international)						
Chapters in Books:	2	0	5	0	0	0
Citation Index	45	20	40	12	4	
Impact Factor	0.5-3.5	0.5-2	0.5-4	0.5-1.5	0.5-1.5	0.8
h Index	4	4	4	2	0	0

22. Details of patents and income generated

“A Water Resistant Phosphogypsum Composition “ 12th December 2014.

23. Areas of consultancy and income generated

- 1) Hindustan Unilever ltd. 2013- Expert opinion on Patentability of Indian patent (Rs. 100000)
- 2) Hindustan Unilever ltd. 2014- Expert opinion on Patentability of Indian patent (Rs. 100000)

24. Faculty selected nationally / internationally to visit other laboratories / institutions industries in India and abroad : NIL

25. Faculty serving in

- a) National committees b) International committees c) Editorial Boards d) any other (please specify)
NIL

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

1. One week Faculty Development Program under TEQIP at Welinkar Education October 15-22,2012
Two week ISTE WORKSHOP on Engineering Thermodynamics by IIT Bombay under National Mission through ICT (MHRD), 11th to 21st December ,2012
2. One week Faculty Development Program under TEQIP at VJTI,Mumbai 18th to 22ndFebruary 2013
3. One week workshop and training course under TEQIP at ICT,Mumbai organized by UGC and NRC, 10-14 June,2013

4. One week short term course by National Institute of Technical Teachers Training and Research (NITTR), Pune, recognized by AICTE, 16-20 June, 2014
5. One week workshop under TEQIP at ICT, Mumbai , 5-10 July, 2014
6. One week training program at ICAR-CIRCOT, Mumbai sponsored under TEQIP, 5-9 October, 2015 (R.S.N. Sahai)
7. Attended 1 week workshop on 'Honing Mentoring Skills- A Holistic way' at ICT Mumbai, (July 3-8 2014).
8. Dr. D. D. Sarode attended continuing education program and Quality Improvement program under TEQIP at I I T Bombay on "Institution Building through Appreciative Mindset" from 24th Jan 2013 to 4th Feb 2013
9. Dr. D. D. Sarode, Dr. V.R. Gaval and Dr. R S N Sahai attended under TEQIP one week training program on Management Capacity Building at Welingkar Institute of Management and Research.
10. Dr. D. D. Sarode attended a 8 days faculty development program under TEQIP on "Management Capacity Building" 15th to 22nd Oct. 2012 at Welingkar Institute of Management and Research, Mumbai 19
11. Dr. D. D. Sarode attended a AICTE approved Short term training program Application of Finite Element Method in Civil Engineering" 16th to 20th April 2012, at V J T I, Mumbai 19
12. Dr. D. D. Sarode attended a TEQIP sponsored one week training program "Performance Based Design of Structures" 22nd to 26th March 12 at V J T I, Mumbai
13. Dr. D. D. Sarode attended Damage Assessment and Repairs Methodology for R C C Structures AICTE approved short training program 9th to 13th Jan 2012 at V J T I, Mumbai 19
14. Dr. S. P. Deshmukh attended ISTE Workshop on Heat Transfer, *conducted by IIT Bombay form 29th Nov. to 10th December 2011.*
15. Dr. S. P. Deshmukh attended 6th International Workshop on Crystalization, filtration, Drying, Milling and Granulation, organized by WFCFD & ICT during 16 to 18 Feb. 2012.
16. Dr. S. P. Deshmukh attended ISTE Workshop on Introduction to Research Methodologies , *conducted by IIT Bombay form 25th June 2012 to 4th July 2012*
17. Dr. S. P. Deshmukh attended MHRD's National Mission for Teachers, Management Capacity Enhancement programme at IIM Indore between 16th to 25th Jan. 2013.

18. Dr. S. P. Deshmukh attended Workshop on ‘Outcome Based Accreditation Process and Parameters’ Delhi Technological University, Delhi 42, held on 21st – 22nd Sep. 2012.
 19. Dr. S. P. Deshmukh attended a Workshop on MHRD Govt. Of India program on Survey of Higher Education in India, at Marathwada Mitra Mandal’s Commerce College, Deccan Gymkhana Pune, 10th Oct. 2012
 20. Dr. S. P. Deshmukh attended a 10 days training program under TEQIP at I I M Indore on “Management Capacity Building
 22. One week Faculty development program on Managing Change at Welingkar institute of Management, Mumbai from (3-7) November 2008.
 23. One week Short term course on state estimation of nonlinear dynamical systems conducted by IIT, Madras at VJTI, Mumbai from 6/1/2014 to 10/1/2014
 24. One week Workshop on smart grid cyber security, conducted by ISGF CDAC & NDLS, VJTI, at Mumbai from 13/1/2014 to 17/1/2014
 25. Short term course on Research Methodology, conducted by TEQIP, VJTI at Mumbai from 3/2/2014 to 7/2/2014.
 26. 1 week workshop on ‘Honing Mentoring Skills- A Holistic way’ at ICT Mumbai from July 3-8 2014
- 27. Student projects**
- percentage of students who have done in-house projects including inter-departmental projects : **40%**
 - percentage of students doing projects in collaboration with other universities industry / institute : **60% In Collaboration with Industry**
- 28. Awards / recognitions received at the national and international level by**
- a. Faculty - 4
 - b. Doctoral / post doctoral fellows - 2
 - c. Students - Nil
- 29. Seminars/ Conferences/Workshops organized and the source of funding (national /international) with details of outstanding participants, if any. : NIL**
- 30. Code of ethics for research followed by the departments :**
- The Institute has a set Code of Conduct for research and the Department follows the same.

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.E(Plastic Engineering)	10 (2012-13)	4	1	100%	100%
M.E(Plastic Engineering)	23 (2013-14)	6	1	100%	100%
M.E(Plastic Engineering)	15 (2014-15)	9	1	100%	100%
M.E(Plastic Engineering)	13 (2015-16)	4	-----		

32. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise :
NA

33. Student progression:

Student progression	Percentage against enrolled
UG to PG	-----
PG to M.Phil.	-----
PG to Ph.D.	20%
Ph.D. to Post-Doctoral	Nil
Employed <input type="checkbox"/> Campus selection <input type="checkbox"/> Other than campus recruitment	20% 80%
Entrepreneurs	5%

34. Diversity of staff

Percentage of faculty who are graduates	
of the same university	70%
from other universities within the State	30%

from universities outside the country	Nil
from universities other state	30%

35. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period . 3 faculties were awarded Ph.D(Tech) Degree in last 4 years.

36. Present details of departmental infrastructural facilities with regard to

- a. Library : **Central Library in the Campus**
- b. Internet facilities for staff and students : **Yes**
- c. Total number of class rooms : **Three Class Room**
- d. Class rooms with ICT facility : **NIL**
- e. Students' laboratories : **3**
- f. Research laboratories : **3**

37. List of Doctoral Students:

Sr.No.	Research Scholar	Project	Supervisor
Year 2009-10			
1	Sandesh S Ramteke	Studies on Polytetrafluoro- ethylene as an additive for lubricating materials for various applications	Dr.A.C. Rao
Year 2011-12			
2	V. N. Palaskar	Standeration of geometrical configurations of hybrid (PV/T) solar system	Dr.S.P. Deshmukh
Year 2011-12			
3	Dipak Kokate	Sustainability through integration of solar water Pumps and microirrigation systems in	Dr.S.P. Deshmukh

		Agriculture Sector.	
Year 2011-12			
4	Asha S Dahake	Value Addition for industrial waste	Dr.D.D. Sarode
Year 2012-13			
5	Ashokkumar Bharimalla	Production of Nanocellulose by Chemo-Mechanical Process and its application in polymer for enhancing its functional properties	Dr.S.P. Deshmukh
6	P D'souza	Use of microchannel heat sink in refrigerator to enhance the heat transfer rate to enhance cop	Dr.S.P. Deshmukh
7	M. P. Deshmukh	Development of fibre reinforced composite	Dr.D. D. Sarode
Year 2013-14			
08	Vikramshinha S Korpale	Optimization of Solar Assisted Dryer for Thermal Power Reneration	Dr.S.P. Deshmukh
09	Khalid Usmani	Investigation on Phase Change Due to Heat Transfer in Micro-channel / capillaries	Dr.S.P. Deshmukh
10	Navnath Kavhale	Design and Analysis of Solar Chimney Power Plant	Dr.S.P. Deshmukh
Year 2014-15			
1.	S.Raji Rajaraman	Recycling of waste	Dr.D.D.Sarode

38. Number of post graduate students getting financial assistance from the university: 1

39. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology : NA

40. Does the department obtain feedback from

- i. Students and faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

There is a institutional Mechanism of Feedback from students about the Syllabus, Teaching and infrastructure. This feedback helps in deciding the curriculum of the programmes as well as improving teaching learning and evaluation methods.

- ii. alumni and employers on the programmes offered and how does the department utilize the feedback?

Feedback is utilized for teaching –learning evaluation for designing syllabus for the programme.

41. List the distinguished alumni of the department

Dr M.B.Parmar	Managing Director , Polyblend colour Concentrate
Satej .M. Nabar	Senior Manager , BASF
Manoj Patil	Head, Supplier readiness Management Volksagen, India Pvt. Ltd.Pune
Dr Jitendra Kapadia	Buisness Development Manager, BASF
Sunil Khokhrale	Senior Manager, TCS,Pune
Rajendra Nimbargi	Senior Manager (Operations) Helvoet, Rubber and Plastic Technology, Pune
Ravindra kumar Gupta	Vice President R& D, Camlin India ltd
Dr. A.C.Rao	Associate Professor, ICT, Mumbai

42. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

- 1 Dr. M.B. Parmar, Polyblend master batches on "Masterbatch" 12th Dec 2012 at 3.30 pm for M.E. (Plastic Engg) students.
- 2 Dr. Suguna Naik, Pidilite Industries, Andheri, on "Polymer Based Construction Chemicals" Lecture was organized for M.E. (Plastic Engg) and S Y B Tech students under TEQIP on 6th Oct 2012 fro 1.30 pm to 3.30pm in K V Auditorium.

- 3 Dr. Mangesh Joshi, Director, Sanrachana Structural Strengthening Pvt. Ltd “Glass and Carbon Fibre Polymer Composites” Lecture was organized for M.E. (Plastic Engg) and S Y B Tech students was organised under TEQIP on 6th Oct 2012 from 11 am to 12.30pm in K V Auditorium
- 4 Prof. Dr. G. M. Sabnis, Emiritus Professor, University of Howard, USA on “Sustainable Energy efficient homes Reality is now!” for faculty and students of ICT under TEQIP on 20th Feb 2013 at 2 pm
- 5 Prof. Ravi Kumar Gupta, ITW Ltd on “Plastic Product Design” on Monday 18th Feb. 2013, 9 am to 10.30 am under TEQIP for M.E. (Plastic Engg) students.
- 6 Mr. V. Karunakara Raju, Head – Manufacturing & supply management, Siemens Ltd. on”Plastic Products for switch gear applications” 2nd March 2013 at 11.00 am for M.E. (Plastic Engg) students.
- 7 Dr.Mahesh Dhekane, Manager- Technology, Clariant Ltd (India) on “Masterbatch” Lecture was organized for M.E. (Plastic Engg) students under TEQIP by on 6th April 2013.
- 8 Mr. Gopal Kabra, Manager- Business Development, Helvoet Rubber & Plastics, Pune on “Techno-commercial evolution of injection molded components” Lecture was organized for M.E. (Plastic Engg) students on 6th April 2013. (find exact date)
- 9 Dr. M.B. Parmar, Managing Diector, Polyblend Master batches on”Additives for Plastic industry” 22nd Nov. 2013 at 3.30 pm to 5.30 pm for M.E. (Plastic Engg) students.
- 10 Dr. M.B. Parmar, Polyblend master batches on”Recycling of Plastic waste” 29th Nov. 2013 at 3.30 pm for M.E. (Plastic Engg) students.
- 11 Dr. Sachin Waigonkar, Department of Mechanical Engg., BITS, Pilani, K.K. Birla Goa Campus on “Rotational Moulding of LLDPE using Nano scale reinforcement”. Lecture was organized for ME (Plastic Engg.) students on 7th March 2014 at 11.00 am.
- 12 Dr. M.B. Parmar, Managing Diector, Polyblend Master batches on”Masterbatches for Plastic industry” 13th August. 2014 at 3.30 pm to 5.30 pm for M.E. (Plastic Engg) students.

- 13 Dr. M.B. Parmar, Managing Director, Polyblend Master batches on "Recycling of Plastics" 21st August 2014 at 3.30 pm to 5.30 pm for M.E. (Plastic Engg) students.
- 14 Dr. M.B. Parmar, Managing Director, Polyblend Master batches on "Additives in Plastic Packaging industry" 3rd Sept. 2014 at 3.30 pm to 5.30 pm for M.E. (Plastic Engg) students.
- 15 3rd January 2015, Manoj Patil, Head, Supplier readiness Management Volksagen, India Pvt. Ltd. "Plastics in Automotive Industry"
- 16 29th November 2014, Shri. R.C. Nimbergi, Senior Manager (Operations) Helvoet, Rubber and Plastic Technology, Pune. "Plastics in Automotive Industry."

43. List the teaching methods adopted by the faculty for different programmes.

Blackboard Teaching, Audio-visual aids, Participatory (Discussion), Demonstration.

44. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

We take feedback from the employer and Alumni

45. Highlight the participation of students and faculty in extension activities.

Apart from teaching all the faculties of our department are involved in various committees at Institute level .

46. Give details of "beyond syllabus scholarly activities" of the department.

Arranging Industrial visits throughout the year . Interaction of students with alumni and guest speakers.

- (A) Industrial Visit of Post graduate students and Ph.D. students organized to Jalgaon from 3rd Jan to 5th Jan 2013. Dr. D. D. Sarode, Head, General Engineering Department organized the visit and accompanied the students. Students visited following industries
- 1) Jain Agro Industries – Seen Jain Plastic Park, Jain hills – Solar Energy, Tissue culture and R & D laboratory, Demonstration farms to see the plastic articles, polar pumps in operation and in use. Also seen the training centre – Gurukul and the Gandhi Tirth.
 - 2) Heera Agro Industries Jalgaon a company of alumunus of our department to see the various plastic products used in drip irrigation systems.

- 3) Heera Roto Polymers Jalgaon to see the manufacturing of tanks of various capacities by Rotational moulding.
- (B) Industrial Visit of Post graduate students and Ph.D. students organized to Helvoet Rubber & Plastic Technologies, Loni, Pune on 15th Feb 2014. Dr. V. R.Gaval, General Engineering Department organized the visit and Dr.V.R.Gaval, Dr S.P.Deshmukh ,Dr. R.S.N.Sahai accompanied the students.

47. State whether the programme/ department is accredited/ graded by other agencies?

If yes, give details : Not accredited

48. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Interaction with experts during seminar/conferences, Knowledge through refresher and orientation courses.

49. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths

- 1) Faculty members from different engineering discipline background .
- 2) Availability of workshop facility for research setup and fabrication work.
- 3) Skilled assistance with industrial experience.

Weakness

- 1) Limited laboratory facilities for doing research
- 2) Difficult to get full time research students, continuity of students
- 3) Department is having additional load of new construction and maintenance of institute premises.

Opportunities

- 1) Possible to do research in interdisciplinary area.
- 2) Development of Material science and technology is great opportunity as most of the faculty are doing research in materials.
- 3) Can collaborate with most of the faculty members of other department.

Challenges

- 1) Catering the increasing number of students for common courses

- 2) Vacancies in faculty positions for long time.
- 3) Parallel course of M Tech in Polymer Engg in the same institute.

50. **Future plans of the department.**

Planning to start a post graduate course in Material Technology.

Mathematics Department

The Department of Mathematics, ICT Mumbai was established in the year 1966. Since its inception, the department strives to be an internationally leading mathematics department that will offer innovative educational and research programmes in mathematical sciences and their applications in science and technology. In pursuit of its vision, the department wishes to (i) offer courses and programs that will ensure that the students get practical knowledge in mathematics which will be relevant to the society (ii) provide a modern educational environment for instruction and research (iii) create an environment for learner to engage in solving real-world problems (iv) contribute to the understanding of complex mathematical structures and their applications.

Since the beginning, the department has been catering to the instruction in basic courses in Applied Mathematics for all the technology, chemical engineering and B. Pharm. students. However, the Department started a post graduate course in M.Sc. (Engineering Mathematics) in academic year 2011-12. This program is supported by UGC under its innovative scheme and is an inter-disciplinary program giving emphasis in practical applications of mathematics in several engineering branches. This course is unique in nature in India. In brief, the course content is a blend of pure mathematics, optimization, computational fluid dynamics, applied statistics, mathematical Finance, bioinformatics, mathematical modelling and computer programming. The students undergo continuous assessment through regular quizzes, mid and end semester exams. The Faculty members give emphasis on regular assignments. Students are encouraged to give seminars on topics other than the curriculum. The M.Sc. students get an opportunity to undertake an industrial visit once in a year. The trip is funded partially by TEQIP and UGC innovative program. The department of Mathematics also organises remedial classes for weak students from graduate and post graduate courses. Mathematicians are invited from India and abroad to deliver colloquium talks to motivate the students. The department has well equipped Laboratory with 50 all in one personal computers. The students have access to different software such as MATLAB, MATHEMATICA and SPSS. In addition to this, students also use free software like R, Sage, etc. The department has its own library for its master students, faculty members and also provides modern and high level computational facilities. Further, the department arranges seminar talks for the post graduate students regularly.

At present, the department has four faculty members. All the faculty members have doctorates from reputed institutes like IIT, ISI. They are working in diverse research areas and have good number of publications in peer reviewed international journals. The department faculty has co-authored books in Real Analysis published by CRC press and Calculus using SAGE, (Moon publication South Korea). Faculties of the department are invited as resource person in various national, international workshops and conferences. In addition to this the faculty members were invited to be resource persons for CSIR UGC net exam preparation. The broad research areas include Computational fluid dynamics, Differential Geometry, Numerical Functional Analysis and Applied Statistics. The department is headed by Dr. A. K. Sahu. Since the post graduate program is interdisciplinary in nature experts from leading institutes like IIT, are invited to conduct the lectures. At present the department has three research scholars.

The department had conducted a workshop for college teachers on mathematical modelling in which about 30 mathematics teachers were given hands on training. One of the most popular and highly effective summer training programmes in Mathematics called Mathematics Training and Talent Search Programme (MTTS) was conducted twice during the last decade. The department also organised a similar pedagogical program (PTMT) meant for training teachers all over India. The department organised a UGC refresher course under the aegis of academic staff college, University of Mumbai during November December 2013. This course was attended by thirty three college teachers from different colleges in the subject of Mathematics, Statistics and Computer Sciences. The department in collaboration with ISI, Calcutta is planning to organize a workshop on applications of R language in Statistics and industrial practice in the near future. In addition to this, the department has arranged basic training programs on computer for under privileged people particularly from rural areas. The program has been highly successful and appreciated by the participants. The department had arranged an **international conference on interface between math education and industries**. It has been also appreciated by industrial people.

The department had successfully completed a project entitled “Numerical studies of thermal stratification in molten sodium pool” from IGCAR worth Rs. 25 lakhs with Dr. A. K. Sahu being the principal investigator. The research outcomes of this project have

been published in conferences and journals of international repute. One student working on this project obtained a Ph.D. degree.

Recently the department has submitted a proposal to the Government of Maharashtra for starting a centre for **mathematical sciences**. If it is sanctioned, the faculty strength of the department will increase and the thrust will be given to research in several inter disciplinary areas. Also the department will be in a better position to start new programs which will be very much useful to students as well as society.

1. **Year of establishment :** 1966
2. **Is the Department part of a School/Faculty of the university?** NO
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)**
M.Sc. in Engineering Mathematics (interdisciplinary program)
Ph.D in Mathematics
4. **Interdisciplinary programmes and departments involved :**
M.Sc. in Engineering Mathematics
This M.Sc program is interdisciplinary in nature with department of Chemical Engineering and Physics.
5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
: Nil
6. **Details of programmes discontinued, if any, with reasons :** Nil
7. **Examination System:** Semester
8. **Participation of the department in the courses offered by other departments :**

First Year B. Tech (all branches) and First Year B.Chem
Applied Mathematics – I, Applied Mathematics – II

Second Year B. Chem
Applied Mathematics – III, Applied Mathematics - IV

First Year B. Pharm
Applied Mathematics-I

First Year B. Tech
Engineering Application of Computer

M. Pharm

Biostatistics

9. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	1	0	
Associate Professors	3	1	
Asst. Professors	1	1	
Others (UGC Innovative Program)	2	2	

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. Students guided for the last 4 Years
Dr. A. K. Sahu	M.Sc., Ph.D	Associate Professor	Numerical Methods, Fluid Dynamics	17 Years	2
Dr. Ajit Kumar	M.Sc., Ph.D	Senior Assistant Professor	Differential geometry, Optimization techniques	11 Years	2
Dr. Amiya Ranjan Bhowmick	M.Sc., Ph.D	Assistant Professor	Statistics and Applied Mathematics	9 Months	NIL
Dr. Akshay Rane	M.Sc., Ph.D	Assistant Professor	Numerical Functional Analysis	1 Year	NIL

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

- a) Mr. Virupaksha Bastikar
- b) Mrs. Alpha Gupte Bastikar
- c) Dr. Gollakota V. V. Hemasundar
- d) Mr. Madan Mohan Aggarwal
- e) Dr. Ashok Nag

- f) Dr. Manoj Mishra
- g) Prof. S. Sivaji Ganesh

12. Percentage of classes taken by temporary faculty – programme-wise information

M.Sc in Engineering Mathematics : 43%
B. Chem: 75%
B. Tech: 100%
B. Pharm: 100%

13. Programme-wise Student Teacher Ratio

M.Sc in Engineering Mathematics: 7:1
B. Chem: 80:2 or 80:1
B. Tech: 140:2
B. Pharm: 30:1

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

Sanctioned: 1
Filled: 1
Actual: 2 (1 contractual)

15. Research thrust areas as recognized by major funding agencies

Fluid dynamics, Numerical Functional Analysis, Optimization, Mathematical Biology

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

No

17. Inter-institutional collaborative projects and associated grants received

- a) National collaboration

Indira Gandhi Centre for Atomic Research
Project Title: Numerical Simulation of Thermal Stratification in Molten Sodium Pool
(Completed)

- b) International collaboration

No

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

No

19. Research facility / centre with

- state recognition
- national recognition
- international recognition

No

20. Special research laboratories sponsored by / created by industry or corporate bodies : No

21. Publications:

- * Number of papers published in peer reviewed journals (national / international)
38

- * Monographs : 1

- * Chapters in Books : 2

- * Edited Books - No

- * Books with ISBN with details of publishers -

A Basic Course in Real Analysis with S. Kumaresan, Chapman and Hall/CRC ,
2014, ISBN No. 9781482216371

Calculus using Sage, jointly with Sang-Gu Lee, SKKU, Robert Beezer, published
by Kyungmoon Books, 2014, ISBN 978-89-6105-458-4

- * Number listed in International Database (For *e.g.* Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) - No

- * Citation Index – range / average - No

- * SNIP - No

- * SJR - No

- * Impact Factor – range / average - No

- * h-index – 2.5

22. Details of patents and income generated : No

23. Areas of consultancy and income generated : --

24. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

Dr. Ajit Kumar

Dr. Akshay Rane

Dr. Amiya Ranjan Bhowmick

25. Faculty serving in

- c) National committees b) International committees c) Editorial Boards d) any other (please specify)

Member of MTTS

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Faculty of the Mathematics Department are provided with all necessary help for attending national, international level Workshops and Training Programs. They are also involved in conducting national level programmes in engineering and applied mathematics.

27. Student projects

- a. percentage of students who have done in-house projects including inter-departmental projects : **100%**
b. percentage of students doing projects in collaboration with other universities
1. industry / institute : **0%**

28. Awards / recognitions received at the national and international level by

- c. Faculty
d. Doctoral / post doctoral fellows
e. Students

Nil

29. Seminars/ Conferences/Workshops organized and the source of funding (national i. international) with details of outstanding participants, if any.

MTTS Programme funded by National Board of Higher Mathematics

PTMT Programme funded by National Board of Higher Mathematics

Refresher Course funded by UGC and ICT Mumbai

30. Code of ethics for research followed by the departments

The Department follows the rules of ethics prepared by academic section of the University.

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Sc. in Engineering Mathematics	19	3	4		

32. Diversity of Students:

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students From universities outside the State	% of students from other countries
M.Sc. in Engineering Mathematics	0	100%	0%	0%

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise
 Department has recently started M. Sc. Course in Engineering Mathematics. There are no Students directly enrolled in the mathematics department except the research students undergoing their Ph. D. Degree in science. Uptil now no such students have attempted the above mention competitive examination.

34. Student progression

Student progression	Percentage against enrolled
UG to PG	Nil
PG to M.Phil.	0%
PG to Ph.D.	0%
Ph.D. to Post-Doctoral	0%
Employed	100%
<input type="checkbox"/> Campus selection	0%
<input type="checkbox"/> Other than campus recruitment	100%
Entrepreneurs	0%

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35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	0%
from other universities within the State	0%
from universities from other States	25%
from universities outside the country	0%

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period : 1

37. Present details of departmental infrastructural facilities with regard to

- a) Library : Very good
- b) Internet facilities for staff and students : Available for staffs and students
- c) Total number of class rooms : 1
- d) Class rooms with ICT facility : NA
- e) Students' laboratories : 1
- f) Research laboratories : --

38. List of doctoral, post-doctoral students and Research Associates

- d) from the host institution/university - 3
- e) from other institutions/universities - 0

39. Number of post graduate students getting financial assistance from the university : 1

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology

Recently the syllabus of various UG and PG programmes of the institute were revised for which a proper procedure of defining the content of the mathematical courses in this programme were decided taking inputs from the faculty of the parent department and feedback from the alumni.

41. Does the department obtain feedback from

- a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. There is a feedback mechanism in place by which students record their feedback highlighting the requirements in improvement of the pedagogy techniques of the teachers and the relevance of the syllabus content for their final degrees. This helps in changing the teaching strategies by the individual faculty and helps in changes in syllabus or curriculum.

- b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Managed by the institute administration and the results are uploaded on the intranet. The faculties can see the results and incorporate the necessary changes suggested through the results of the feedback.

- c. alumni and employers on the programmes offered and how does the department utilize the feedback?

The department gets in touch with the alumni for feedback.

42. List the distinguished alumni of the department - Nil

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

MTTS Programme

PTMT Programme

Industrial Visits by the students

Workshop on SAGE and Python

44. List the teaching methods adopted by the faculty for different programmes.

Chalk and Board

Visual presentation

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

Through regular internal evaluations by exams and seminar presentations.

46. Highlight the participation of students and faculty in extension activities.

Resource person for various academic programs, for example:

UGC Refresher course

National Workshops

Industrial visits

Workshop on CSIR-NET examination

47. Give details of “beyond syllabus scholarly activities” of the department.

Seminar presentations by M.Sc. students

Workshop on SAGE and different computer languages

Colloquium talks by eminent mathematicians including Padmashree Prof. M. S. Raghunathan.

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details. - No

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Conducting educational workshops and lecture series

Initiating interdisciplinary research activities with other departments and other institutes/universities

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Focused academic staffs

Strong research activities

Organizing educational workshops

Interactions with other mathematicians

Interdisciplinary research activities

Need to strengthen the department in number

Need to attract more PhD students

Strengthen the M.Sc program and develop new curricula

Popularize the M.Sc. program in India and abroad

51. Future plans of the department.

The Department of Mathematics, Institute of Chemical Technology, Mumbai aims to be an internationally leading center for mathematical sciences that will offer innovative educational and research programmes in mathematics and its applications in science and technology.

- a) Offer courses and programmes that will ensure that the students get practical knowledge in mathematics which will be relevant to the society
- b) Provide a modern educational environment for instruction and research
- c) Create an environment for learner to engage in solving real-world problems
- d) Contribute to the understanding of complex mathematical structures and their applications.

Oils, Oleochemicals and Surfactant Technology Department

After WW-II, the Department for Technology of Oils, Fats and Waxes was started, which was headed by Professor J.G.Kane, whose work on non-edible oils was exceptional. The Department has been in forefront for its quality education. Several of its alumni have been industrialists and reputed educationists.

The lipids are a class of biochemical compounds, many of which occur naturally in plants and animals. The lipids constitute a very large class of compounds, many of which play essential roles in organisms. Among the most important lipids are fats and oils, waxes, steroids, terpenes, fat-soluble vitamins, prostaglandins, phosphoglycerides, sphingolipids, and glycolipids. Phospholipids, for example, occur in all living organisms, where they are a major component of the membranes of most cells. The main use of fats commercially is in the production of soaps and other cleaning products. Oleochemicals are chemicals derived from biological oils or fats. The hydrolysis or alcoholysis of oils or fats form the basis of the oleochemical industry. The formation of basic oleochemical substances like fatty acids, fatty acid methyl esters (FAME), fatty alcohols, fatty amines and glycerols are by various chemical and enzymatic reactions. Intermediate chemical substances produced from these basic oleochemical substances include alcohol ethoxylates, alcohol sulfates, alcohol ether sulfates, quarterner ammonium substances, monoacylglycerols (MAG), diacylglycerols (DAG), structured triacylglycerols (TAG) and sugar esters. The importance of these chemicals is thus evident.

This Department has been pioneering in the field of Oil Technology. The curriculum has been designed to provide an in-depth knowledge of chemistry and technology of oils and fats, and their industrial applications. Career opportunities exist in oils mills and refineries, oleochemicals, soap and detergent manufacturing industries, surfactants and specialty chemical manufacture producing auxiliary chemicals, Paints. Cosmetics, Perfumery and raw materials used in the above industries. Several short and long term projects instituted by sponsoring bodies for process/product development have been supervised by the faculty as part of their routine research activity.

This Department offers 2 Ph.D. fellowships per year under NON-SAP status by UGC. It also participates in M. Tech. in Perfumery and Flavour Technology, Green Technology and Bio-Process Technology

- 1) **Year of establishment** : 1943
- 2) **Is the Department part of a School/Faculty of the university?** YES
- 3) **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)** :
 - a) B. Tech (Oils)
 - b) M. Tech (Oils)
 - c) Ph D (Oils)
- 4) **Interdisciplinary programmes and departments involved ?**
 - a) M. Tech. Green Technology
 - b) M. Tech. Perfumery
 - c) M. Tech . Bioprocess Technology
- 5) **Courses in collaboration with other universities, industries, foreign institutions, etc.**
Yes (Godrej industries)
- 6) **Details of programmes discontinued, if any, with reasons** : NA
- 7) **Examination System: Annual/Semester/Trimester/Choice Based Credit System**
Semester based evaluation pattern
- 8) **Participation of the department in the courses offered by other departments** : NA
- 9) **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	2	0	
Associate Professors	1	0	
Asst. Professors	2	2	Assistant professor Sr. Scale 02

- 10) **Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance** :

Sr.No	Name		Highest Qualification	Date of joining the present post	Date of joining the institute	Specialization
Department of Oils, Oleochemicals and Surfactants Technology						
1.	Prof. P. R. Vavia	Professor	Ph.D. (Tech)	01-12-1993	07-01-1988	Pharmaceutical Technology
2.	Dr. J. T. Waghmare	Assistant Professor	Ph.D.Tech	03-04-2003	03-04-2003	Oleochemicals and Surfactants Technology
3.	Dr. Amit P. Pratap	Assistant Professor	Ph.D.Tech	29-12-2003	29-12-2003	Oleochemicals and Surfactants Technology
4.	Dr. C. S. Madankar	Assistant Professor	Ph. D.	31-03-2015	31-03-2015	Oleochemicals and Surfactants Technology
5.	Dr. Parag Nemade	UGC Asst. Prof.	Ph.D.	01-Aug-13	01-Jan-11	Chemical Engineering
6.	Dr. D. V. Pinjari	DST INSPIRE Faculty Fellow	Ph.D. (Tech)	03-04-2013	03-04-2013	Chemical Engineering

11) List of senior Visiting Fellows, adjunct faculty, emeritus professors :

Sr. No.	Names Of Visiting Faculty
1	Dr. A. T. Mirajkar
2	Dr. A. V. Joshi
3	Dr. Adinath Mahadeo Ware
4	Dr. B. P. Khedkar
5	Dr. D. K. Deshpande
6	Dr. Kishor Ambawade
7	Dr. Nilesh Rupwate
8	Dr. Renuka Thergaonkar
9	Dr. Sanjog Surve

10	Dr. Sitaram Dixit
11	Dr. Smita Jadhav
12	Dr. Sushil Dubal
13	Mr. M. H. Navlur
14	Mr. Mangesh L. Mokashi
15	Mr. Vinay Kumar T. Singh
16	Mr. Vinay Kumar T. Singh
17	Mrs. Poonam Dhake
18	Prof. P. R. Kulkarni

12) **Percentage of classes taken by temporary faculty – programme-wise information:**
15-20%

13) **Programme-wise Student Teacher Ratio : 4:1**

14) **Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual:**

Sr. No.	Post	Sanctioned	Filled
1	Lab Assistant	3	1
2	Lab Attendent	3	3
3	Tutor	-	

15) **Research thrust areas as recognized by major funding agencies:**

- a. Surfactants
- b. Lubricants
- c. Nutraceuticals
- d. Oliochemicals and its Derivatives
- e. Essential Oils
- f. Biofuels
- g. Blending Technology

16) **Number of faculty with ongoing projects from a) national b) international funding agencies . Give the names of the funding agencies, project title and grants received project-wise. :**

Name of the Investigator	Title of the project and duration	Amount sanctioned	Funding Agency
--------------------------	-----------------------------------	-------------------	----------------

		(INR)	
Dr. Jyotsna Waghmare	Stabilization of omega-3 fatty acids in oil based products (Stabilization of omega-3 fatty acids in edible blends/ vanaspati/ margarine/ shortening or butter like products using natural anti oxidants Duration: 2012-15	15,00,000/-	Department of Food and Public Distribution, Govt. of India, New Delhi
	Essential oils from Champa Duration: 2014-15	2,50,000/-	Pitambari Products Pvt. Ltd., Navi Mumbai
	Alternative Fuels Duration: 2013-16	12,00,000/-	Department of Science and Technology (DST), New Delhi
	Study of lather of detergent formulation for laundry applications Duration: 2014-2016	13,00,000	HUL
Dr. Amit P. Pratap	Value Addition to Biodiesel via Biolubricants Duration: 2012-15	Rs. 40,33,000/-	Department of Science and Technology (DST), New Delhi

17) Inter-institutional collaborative projects and associated grants received –

- a) National collaboration b) International collaboration
NIL

18) Departmental projects funded by : DST; UGC,DBT , AICTE, ICT Golden Jubilee Endowment Fund

19) Research facility / centre with

❖ State recognition

❖ National recognition:

The teaching and research endeavours of the Department are continually supported by funding from programmes like DST – FIST and UGC SAP (DRS I and DRS II)

20) Special research laboratories sponsored by / created by industry or corporate bodies:

Godrej Laboratorie

21) Publications:

- **Number of papers published in peer reviewed journals (national / international) : 199**
- **Monographs : NIL**
- **Chapters in Books: 05**
- **Edited Books : NIL**
- **Books with ISBN with details of publishers**

Authors	Title	Editor/ Publisher / Place/ Year/ ISBN/ISSN numbers, etc.
Dr. Jyotsna Waghmare	Skin barrier: Chemistry of skin delivery systems	Ed: Johann Wiecher, Allured books, USA, 2008, ISBN 10: 1-932633-44-8 ISSN-13: 978-1-932633-44-3
	Formulating strategies in cosmetic science	Allured books, USA, 2009, ISBN: -10: 1-932633-529, ISBN-13: 978-1-932633-52-8
Dr. P. R. Nemade	Utilization of Industrial Wastes as Building Materials, R. S. Zambare, A. Dahake, D. D. Sarode, P. R. Nemade, N. V. Mukadam	Int. J. Global. Tech. Initiatives 2(1) 2013 F12-17.
Dr. D. V. Pinjari	D. V. Pinjari, P.R. Gogate, A.B. Pandit, Synthesis of Nanomaterials using Hydrodynamic Cavitation, Chapter in "Cavitation: A Novel Energy Efficient Technique for the Generation of Nanomaterials"	M. Sivakumar & M. Ashokkumar, Pan Stanford, Singapore, 2013 (ISBN-13: 978-9814411547).
	V. K. Saharan, D. V. Pinjari , P.R. Gogate, A.B. Pandit, Process Intensification using oxidation technologies at ambient conditions for wastewater treatment and recovery, Chapter in "Industrial Wastewater Treatment, Recycling and Reuse".	Vivek Ranade & Vinay Bhandari, Elsevier, UK, 2013 (In press).

- **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) -**
- **Citation Index – range / average : 1418**

- **SNIP** : -
- **SJR** : -
- **Impact Factor – range / average:** 0.3- 5.385
- **h-index** : 2-20

22) Details of patents and income generated : NIL

23) Areas of consultancy and income generated : Rs. 5086781

24) Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad : NIL

25) Faculty serving in

- a) **National committees** b) **International committees** c) **Editorial Boards** d) **any other (please specify)**

Sr. No.	Faculty Member	Affiliation to Professional Bodies
1.	Prof. P. R. Vavia	Life member, Indian Pharmaceutical Association
		Member, Association of Pharmacy Teachers of India
		Member, Royal Pharmaceutical Society of Great Britan
		Inspector appointed by Pharmacy Council of India for inspection of Institutions
		Inspector appointed by AICTE for inspection of Institutions
		Member, Editorial board of Indian Journal of Pharmaceutical Sciences
		Expert Member, DSIR for inspection of Industrial R & D Facility
		Member, International Advisory board Asia Oceanic Cyclodextrin League
		Member, Italian Cyclodextrin League
2.	Dr. Amit P. Pratap	Oil Technologists' Association of India
		Alumni Association of UDCT
		Indian Society for Surface Science and Technology

		(ISSST)
		Indian Association Nuclear Chemists' and Scientists (IANCAS)
		Chromatographic Society of India
3.	Dr. Jyotsna Waghmare	Oil Technologists' Association of India
		Association of Food Scientists and Technologists
		Indian Society for Surface Science and Technology (ISSST)
4	Dr. D. V. Pinjari	IChE

26) Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

- a) Teaching Learning Workshop – Convenor – Prof. S. D. Samant , March 2014
- b) Resource Generation Workshop organized by HBCSE in September 2013
- c) Capacity Building Training Workshop through TEQIP Workshop on NBA accreditation, VJTI, Mumbai

27) Student projects

- percentage of students who have done in-house projects including inter-departmental projects :100 %
- percentage of students doing projects in collaboration with other universities / industry / institute : NA

28) Awards / recognitions received at the national and international level by

- Faculty

Faculty Member	Major Awards
Prof. P. R. Vavia	Best Teacher's Award, University Institute of Chemical Technology at undergraduate level, 2010.
	Best Teacher's Award, Institute of Chemical Technology at

	undergraduate level, 2012.
	Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2014
	Prof. P. R. Vavia awarded VASVIK Award in the category of Biological Sciences & Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015
Dr. C.S. Madankar	S.R. Bhatnagar Memorial Research award, 2013 by the Oil Technologist Association of India for the research work carried out in the field of lubricants, petrochemicals and allied products.
	Canadian Commonwealth Scholarship by the Canadian Bureau for International Education (CBIE) on behalf of Foreign Affairs and International Trade Canada (DFAIT) in Department of Chemical Engineering, University of Saskatchewan, Canada for 6 months with Prof. A.K. Dalai, U of S, Canada, 2011-12.
Dr. P. R. Nemade	DAE-Young Scientist Research Award
	BIRAC and Bill and Melinda Gates Foundation's Re-Invent The Toilet Challenge
Dr. Amit P. Pratap	"RBGV Swaika Memorial Award" during the 68th Annual Convention of Oil Technologists' Association of India and International Conference on Emerging Trends in Oleochemicals and Lipids Expo-2013 national August 8-10, 2013 at CSIR-Indian Institute of Chemical Technology, Hyderabad
	Prof. R K Khanna Memorial Award" for the best research paper entitled " <i>Effect of Glycerol and Soybean Oil as a Carbon Source on the Production of Mannosylerythritol Lipids by Pseudozyma antarctica (ATCC 32657)</i> " published in Journal of Lipid Science and Technology (JLST), Vol. 43 No. 1, Jan-Mar 2011, 16-19 for the calendar year 2011.
	Praharaj Manoj Memorial Award" for securing First Rank from all the branches of M. Sc. (Tech), Semester I and Semester II examinations held in May 2000.
	National Open Merit Scholarship" for the academic year 1996 – 97 and 97 – 98 for securing Second Rank in the Merit List at B. Sc. (Chemistry) examination held in April 1996.

	Selected as 'Junior Research Fellow' under the scheme entitled 'Processing and Utilization of Gamma Irradiated Oilseeds' sponsored by Board of research in Nuclear Sciences (BRNS), Mumbai
Dr. D. V. Pinjari	Fulbright OLF Award 2015 by OIE and CIES (State Departments, US Federal Government, Washington, USA)
	Young Engineers Award 2014-2015 by The Institution of Engineers (India)
	Wipro Earthian Award 2013 by Wipro foundation, Banglore (India)
	Young Associate, Maharashtra Academy of Science (2013)
	M. P. Chary Memorial Award 2013 for research and technological contribution (below 35 years). The M P Chary Memorial Award was constituted by <u>Indian Institute of Chemical Engineers (IIChE), India</u>
	Dr. K. H. Gharda Best PhD Thesis Award 2013
	Ambuja Cement Best Thesis award
	Department of Science and Technology Inspire Faculty Award 2013-2018
	University Grant Commission, Government of India D S Kothari Postdoctoral Fellowship 2013-2016

- **Doctoral / post doctoral fellows : NA**
- **Students : NA**

29) Seminars/ Conferences/Workshops organized and the source of funding (national /international) with details of outstanding participants, if any.)

Sr.No.	Title	Date	Venu	Funding Source
1	ISDC-2011 International exhibition On Soaps, Detergents and Cosmetics	10th to 13th December- 2011	Nehru Centre Worli, Mumbai-400 018	Sponsored Funding And Registration Fee

2	67th Annual Convention of The Oil Technologists' Association of India and International Conference and Expo	23rd and 24th November-2012	ITC Maratha, Sahar Road, Mumbai – 400 099	Sponsored Funding And Registration Fee
3	3 Days Workshop "Latest Trends In Instrumental Analysis Of Oils, Oleo-Chemicals, Surfactants And Allied Products"	24th-26th October-2013	Institute of chemical Technology, Mumbai	Sponsored Funding And Registration Fee
4	One day conference on Current regulatory requirements of cosmetics	7th March 2014	Courtyard Marriot, Andheri, Mumbai.	Sponsored Funding And Registration Fee
5	One day seminar on "Transformative Technologies and Market Innovations in HPC industry" and	13th-14th January 2016	Nehru centre, Worli, Mumbai-400018	Sponsored Funding And Registration Fee
6	One day workshop on "Risks Mitigation in the Personal Care Industry"	15th January 2016	Nehru centre, Worli, Mumbai-400018	Sponsored Funding And Registration Fee

30) Code of ethics for research followed by the departments:

The Institute has a set Code of Conduct for research and the Department follows the same.

31) Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
Bachelor of Technology (16 seats)	-	11	5	100	100
M. Tech. (Full-time 2-years) (18 seats)	55	7	11	100	100
M. Tech. (Sponsored 3-years) (10 seats)	-	-	-	-	-
Ph.D. (Tech.) in Technology	15	1	2	-	-

32) Diversity of students :

Name of the	% of students	% of students	% of students	% of students
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Programme (refer to question no. 4)	from the same university	from other universities within the State	from universities outside the State	from other countries
Bachelor of Technology (16)	100	0	0	0
M. Tech. (Full- time 2-years) (18)	30	65	5	
M. Tech.(Sponsored 3- years) (10)	-	-	-	-
Ph.D. (Tech.) in Technology	50	50	0	0

33) How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Name of Examination	Number of Students Cleared
Number of students who passed GATE examination	4
Number of students who passed CSIR	1
Number of students who passed other competitive examination	-

34) Student progression :

Student progression	Percentage against enrolled
UG to PG	25
PG to M.Phil.	-
PG to Ph.D.	5-10%
Ph.D. to Post-Doctoral	-
Employed	
<input type="checkbox"/> Campus selection	60%
<input type="checkbox"/> Other than campus recruitment	20%
Entrepreneurs	-

35) Diversity of staff

Percentage of faculty Who Are graduates	
of the same university	100
from other universities within the State	-
from universities from other States	-
from universities outside the country	-

36) Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

37) Present details of departmental infrastructural facilities with regard to

- a) **Library** yes
- b) **Internet facilities for staff and students** : Yes
- c) **Total number of class rooms(in Oils Department)** :2
- d) **Class rooms with ICT facility** : -
- e) **Students' laboratories (BE)** : 2
- f) **Research laboratories** : 4

38) List of doctoral, post-doctoral students and Research Associates

- a) **from the host institution/university** : 07
- b) **from other institutions/universities** : 13

39) Number of post graduate students getting financial assistance from the university:

At present, the Institute (a deemed university) does not provide any financial assistance to the students

40) Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Yes. The Departmental committee made several deliberations. Experts from within the Institute and from other reputed Institutes were consulted. A syllabus committee comprising of faculty members of the Department and external experts was constituted

to frame the syllabus.

41) Does the department obtain feedback from

i) faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. The feedback from the faculty members is taken by the Head of the Department and discussed in the Department meetings. Suitable changes are made in the teaching and evaluation accordingly.

ii) students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Yes, the Head of the Department takes feedback from the MSc students at the end of each semester. Besides this, some of the faculty members also obtain feedback from the students for their individual courses.

iii) alumni and employers on the programmes offered and how does the department utilize the feedback?

Not formally. However, the Head of the Department and the faculty members have constant interaction with the alumni and their feedback is taken into account.

42) List the distinguished alumni of the department (maximum 10).

Sr.No.	Alumni	Designation
1	Dr. Rajeev Churi	Managing Director, Sarbi Group of Companies
2	Mr. P. D. Kamat	Managing Director, Fine Organics
3	Mr. K. G. Satoskar	Managing Director, Arofine Chemicals Ltd.
4	Dr. Suresh Ramamurthi	Vice President, New Business Development, ITC, Bangalore
5	Dr. B. R. Gaikwad	President – Special Projects, VVF Ltd., Mumbai
6	K. N. Kapadia	CEO, Desmet Ballestra, Bangalore
7	Dr. A. T. Mirajkar	Vice President, Unitop Chemicals Pvt. Ltd., Mumbai

8	Mr. Nitin Nabar	Chief Operating Officer (COO), Godrej Industries Ltd., Mumbai
9	Dr. S. Y. Mhaskar	Head-Technology, Marico Ltd.
10	Dr. Prasad Nabar	Vice President, Fine Organics Ltd., Mumbai

43) Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

- ❖ Endowment lectures (annually)
 - Spinco Biotech Ramanathan lectures
 - G. D. Gokhale Endowment lectures
 - Golden Jubilee Endowment lectures
 - CMP Endowment lectures
 - B. D. Tilak Visiting Fellowship
 - Dai-ichi Karkaria Visiting Fellowship
 - Dharamsi Morarji Visiting Fellowship

- ❖ Laboratory Safety Workshop

44) List the teaching methods adopted by the faculty for different programmes.

- Use of multimedia
- Self learning through assignments and seminars
- Innovative teaching methods such as POGIL – Process Oriented Guided Inquiry Learning

45) How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

1. We have a system of continuous assessment under which a series of tests, assignments, quizzes are arranged throughout the semester to monitor the progress of our students and teaching. There is also one formal mid-semester examination. The weightage of continuous assessment in the total marks is 20%, while that of the mid-semester exam is 30% and the end semester exam is 50%.
2. We ensure advice from external experts by appointing them as visiting faculty.
3. We regularly organize endowment lectures and lectures by experts
4. Students are encouraged to participate in co-curricular activities within and

outside the institute

5. Activities like Rasaynam and CONTECH are organized to boost student involvement

46) Highlight the participation of students and faculty in extension activities:

- a) Students of oil technology actively participate in VORTEX – a technical festival organized by ICT. They also take part in other inter-college events and competitions.
- b) Some of the events such as are also arranged with the collaborative efforts of students and staff members of this department

47) Give details of “beyond syllabus scholarly activities” of the department

The faculty members of the Department are actively involved in various research activities like guiding Ph.D. students, industrial consultancy, executing sponsored projects and writing books and research papers. In addition, they contribute to the activities of other Departments / Universities as members of Ph. D. thesis evaluation and syllabus review committees. Most of the faculty members of the Department have delivered invited lectures in conferences / seminars / workshops. They are regular resource persons for refresher courses conducted for college teachers.

48) State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Yes. NBA Accreditation has been received.

File No. 28-301-2010-NBA dated 21/10/2015

49) Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

The basic and applied knowledge generated through research activities is regularly published as journal articles, reviews and books. Some of the research outcome has also been patented. In addition, the members of the Department carry out industrial consultancy where they apply the knowledge to solve the real world problems faced by the industry.

50) Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

STRENGTHS:

- ❖ Substantial academic contribution by the Department towards conducting theory as well as practical courses for the under-graduate Programmes of all the three branches, viz., B. Chem. Engg., B. Tech., and B. Pharm. Sci.
- ❖ High diversity among the present faculty members regard to research interests and area of expertise.
- ❖ Numerous analytical facilities for common use such as Infrared and UV Vis spectrophotometers, Gas chromatographs, High Performance Liquid Chromatograph unit, Viscometer, ovens and
- ❖ UGC SAP and DST FIST sponsored research funding for the next five years

WEAKNESSES: .

- ❖ Few faculty positions are vacant for a long time.
- ❖ The laboratories are not fully modernized and a thorough revamping is essential.
- ❖ Secretarial assistance is not available. As a result, the faculty members spend lot of time on administrative and documentation work.

OPPORTUNITIES:

- ❖ The Department gets a good number of applications for Ph.D. admission. Thus, there is no dearth of research manpower and new research areas can be initiated and sustained.
- ❖ The vacant faculty positions can be filled with scientists/adjunct faculty on suitable terms and conditions.
- ❖ A network can be made of the research students who had passed out of the Department who are placed in various research/academic organizations. This will help in conducting research of academic, industrial and social relevance.
- ❖ The Department has the opportunity to identify promising under-graduate students and hence can carry out minor, exploratory research projects through them. This can be a co-curricular activity which will also help the under-graduate students in getting a good placement or scholarship.
- ❖ The Department can increase the intake of each. programme. In future, integrated programmes can be initiated.

51) Future plans of the department.

Research Plan:

- ❖ To expand the current research expertise by incorporating expertise from various contemporary areas of research such as nanoscience, bioorganic chemistry, materials chemistry, computational chemistry, theoretical chemistry
- ❖ To develop research facilities to meet international standards with respect to analytical facilities, lab facilities, etc
- ❖ To enrol quality students for PhD and train them rigorously through course work and research
- ❖ To undertake research problems of industrial relevance
- ❖ To introduce, develop and nurture the culture of commercialization of research and documenting the work as patents

Academic Plan:

- ❖ Develop the M.Sc programme further in terms of quality and make it on par with the international standards.
- ❖ Increase the intake of M. Sc. students
- ❖ Provide the students excellent laboratory, computational, research and instrumental facilities
- ❖ Make online resources available to the students
- ❖ Collaborate with reputed Universities and institutions to improve the academic standards
- ❖ Provide opportunities to the students to work in reputed institutes as interns

Polymer and Surface Engineering Technology Department

During the inception, year 1946, this division offered a B.Sc (Tech) course for two years in Technology of Plastics and Technology of Paints, Pigments and Varnishes. In 1952, along with other divisions three years B.Sc (Tech) program was introduced. From 1998, the three year B. Sc (Tech) course has been replaced by four year post H.S.C course. The intake strength was only four students per year in Polymer and surface engineering Technology branches. Later on, the strength was increased to 8 per year and now it is 16 per year in each of these two technology courses. In addition to under graduate program, the department has Master's and Doctoral Programs also. The department received a grand donation of Plastindia Foundation, Mumbai in 1997 to initiate the new program – three semesters M. Sc (Tech) in Plastics Processing. In the year 1999, the department received donation of modern equipments worth USD 100,000 from Gratag Macbeth of USA in association with Advanced Graphics Systems, India.

The department has received funds under FIST and DRS schemes. The department has fully refurbished laboratory and equipped with all state of the art instrument. The department the placement recorded for UG and PG are excellent and large numbers of students going for higher studies. The faculty members are having excellent interactions with industries and are involved in consultations and members of varies committees.

Departement work in the areas like Polymer Blends and Synthesis of Tailor-made Polymers by Living Radical Polymerization, Polyurethane Dispersion, Anticorrosive Coatings, Nano Particle Synthesis, Particulate Polymer Composites, Bionanocomposites, Biodegradable Polymers and Composites, Speciality Coatings, Nanocomposites, Biopolymer, Rheology of Polymers etc

The dept has very good testing facility to carry out research work. Major characterization equipments includes XRD, Leica Microscope, DSC, TGA, FTIR, Nano particle size analyzer, Contact Angle measuring system, , Zeta Potential meter, HPLC, Computer Colour Matching system, Tensile strength tester, BOD and COD analyser, Rheometer HDT/ Vicat Apparatus Optical Instruments Spectrophotometer Color Eye 7000 A Spectralight III XRD Water vapour and Gas vapour Permiability Surface Tensionmeter DMA etc Department also have Polymer processing Equipment like Single screw

extruder Twin screw extruder Two roll mill Injection molding machine Blown film extruder and many other small testing analytical and processing instruments.

There are total 6 faculty members who engaged in high quality fundamental as well as applied research and they have got over 500 publications in Indian and International journals. The number of publication over the last three years (2012-15) is 150. There are 9 permanent and 4 temporary non-teaching staff members in the dept. Department has 9 laboratories occupying 500 sq. m. floor area and 450 sq m classroom and seating area

The faculty of the Department has good interaction with the industry. A number of industries have been benefited by the technical advice given by the faculty. There have been a number of industrial and governmental research projects in which problems of mutual interest are investigated and the students as well as the Department have been benefitting by this interaction. Dept faculty has govt. projects from UGC,DST, AICTE and TEQIP in the last three years amounting to Rs. 300 lakhs in the last three years. They also have project work from the industry like Tata motors Supreme Petrochem of value over Rs 30 lakhs.

About 50% of the under graduate and post graduate student go abroad for higher studies. Some of the institutes where the students gets admissions are Akron, Texas, Colorado, Cornell, Carnegie Mellon University, Jeorgia Institute of Technology in the USA etc .We achieve 100% campus placement for UG and 80% for PG students. The companies that visit for campus interview are Asian Paints, DSM, Welspun, Saint Gobain, Hindustan Speciality Chemicals, Pidilite, Kansai Nerorac K Tech Dow Chemicals and many others. Salaries offered are in the range of 5 lakhs per annum.

Departmental Students also organize technical event every year called “Rangotsav” where paper presentation, quizzes and other events are held in the dept in which students from all over India participate and competes. Annual get together for alumni is also planned which is a cultural event. Department have 7 endowment where in people from industry share their experience with the students. Renowned Alumni of the Department Mr. A.S. Dani Mr. H.K. Momaya Mr. M.C. Choksi Mr. Ravi Raghavan Mr. S.C. Jain Mr. B.M. Thakkar and many more.

Our vision is Empowering skills and knowledge about latest Research in the field of Polymer and Surface Coating Technologies. And mission is to Pursue world class on

excellence in education and research in the areas of Polymer and Coating Technology for sustainable development of industries that require trouble shooting competencies in these core areas of knowledge

APC RANGOTSAV 2013

Lightning by Chief Guest



Inauguration Ceremony



Invited Lecture



Culture Night



Convener Talk



Rangotsav Team Members



APC RANGOTSAV 2014

Lightning by Chief Guest



Inauguration Ceremony



Invited Lecture



Culture Night



Reunion



Rangotsav Team Members



APC RANGOTSAV 2015

Lightning



Rangotsav Team Members



Inauguration Ceremony



Committee Members



Convener Talk



Invited Lecture





Short term technology intervention workshop for Plastics cluster at Dharavi Mumbai on value addition of Plastic recyclate via 3D plastics processing

SWACH MUMBAI ABHIYAAN



Place : Bandra ; Date : 28th Feb.

Team : ICT PSE Department / APRA / Kherwadi khatik samaj

1. Year of establishment :

The department of Polymer and Surface Engineering was established in 1946 and has undergone changes in its nomenclature. Earlier it was known as Paints, Pigments and Varnishes (PPV) Section.

The B.Sc. (Tech.) courses were converted into post-B.Sc. three-year courses in 1966 and finally further converted into B. Tech. programmes in 1988, which are post-HSSC (12th Grade).

Since 1961 the Department started M.Sc.(Tech.) in Chemical Technology which is currently M.(Tech.) in polymer engineering as well as Surface Coatings Technology.

2. Is the Department part of a School/Faculty of the university?

Deemed University under section-3 of UGC Act-1956 with Maharashtra Govt.'s Elite Status and Center of excellence, Matunga, Mumbai-400 019

3. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)

B.Tech (Polymer Engineering and Technology, Surface Coating Technology)

M.Tech (Polymer Engineering and Technology, Surface Coating Technology)

Ph.D (Polymer Engineering and Technology, Surface Coating Technology)

Integrated Masters in (Polymer Engineering and Technology, Surface Coating Technology)

Integrated Ph.D in (Polymer Engineering and Technology, Surface Coating Technology)

Ph.D (Science)

4. Interdisciplinary programmes and departments involved

Department of Mathematics, Department of Physics and General Engineering, Department of Chemical Engineering, Department of Chemistry

5. Courses in collaboration with other universities, industries, foreign institutions, etc.
Nil

6. Details of programmes discontinued, if any, with reasons : Nil

7. **Examination System: Semester**

	In-Semester evaluation		End-Semester-Exam	Components of continuous mode
	Continuous mode	Mid Semester-Exam		
Theory	30%	30%	40%	Quizzes, class tests (open or closed book), home assignments, group assignments, <i>viva-voce</i> assignments, discussions
Practical	50%	-	50%	Attendance, <i>viva -voce</i> , journal, assignments, project, experiments, tests

Grades:

The total marks (in-semester + end-semester) of a candidate in a subject head are converted into a letter grade, based on the relative (and some-times the absolute) performance of the student. For granting class a grade point of 6.0 and above will be considered equivalent to First class.

Letter Grade	AA	AB	BB	BC	CC	CD	DD	EE
Grade Point	10	9	8	7	6.5	6	5.5	5

Repeat End-Semester Examination

For those candidates who fail in a subject head or are eligible for appearing at the repeat examination, **Repeat End-Semester Examination** is conducted within one month from the declaration of the results of regular end-semester examination. The marks obtained by candidates in the in-semester examinations (continuous assessment and periodic test) will be carried forward in such cases.

Improvement of performance:

A candidate will be allowed to appear for the **entire examination** after the regular end-semester

examination as per the respective rules to improve the performance.

8. **Participation of the department in the courses offered by other departments : NIL**

9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professors	2	0	2
Associate Professors	3	2	-
Asst. Professors	3	3	-
Others (Endowment one for associate Prof.)	1	1	-

10. **Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D./ M.Phil. students guided for the last 4 years
Prof. R.N.Jagtap	Ph.D. Tech	Professor	Paint Technology	22	8
Prof. P. A. Mahanwar	Ph.D. Tech	Professor	Polymer Science and Technology	24	16
Dr. V. V. Shertukade	Ph.D. Tech	Associate Professor	Polymer Science and Technology	-	-
Dr. A. S. Sabnis	Ph.D. Tech	Assistant Professor	Paint Technology	7+ 2.5*	1
Dr. S. T. Mhaske	Ph. D Tech	Assistant Professor	Paints & Polymer Science & Technology	12	5
Mr. A. R. Rao	M. Tech	Assistant Professor	Polymer Science and Technology	12	0

*: industry experience

11. **List of senior Visiting Fellows, adjunct faculty, emeritus professors**

1. Prof.M. A. Shenoy

2. Prof. M. R. Sawant
3. Dr. Samui
4. Dr. Milind Deshpande
5. Dr. M.Tipana
6. Mr. S.P.Joshi
7. Mr. Mahesh Aaradhe

12. Percentage of classes taken by temporary faculty – programme-wise information

No temporary faculties

13. Programme-wise Student Teacher Ratio

Sr.No	Class	Students (considering ongoing courses for SY TY and final year of polymer as well as coating technology)	Teacher
1	B-Tech	96	8
2	M-Tech	15	6
3	Ph.D	7-8 (average)	5

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

No	Support staff (technical)	Actual	Sanctioned	Filled
1	Lab Assistant	3	3	3
2	Laboratory Technician	1	1	-
3	Instrument Mechanics	1	1	1
4	Laboratory Attendant	5	5	5

15. Research thrust areas as recognized by major funding agencies

Nanotechnology, green routes for polymer synthesis, polymer processing.

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

1	Sponsor	AICTE
	Title	Effect of Interfacial energy & contact angle on Blends & alloys of PC
	Duration	3 yrs
	Total amount	Rs.16 lakhs
	Principal Investigator	Dr. V.V. Shertukde
	Research Fellow	-
2	Sponsor	BRNS.
	Title	Cay Filled LLDPE Nanocomposites Film For Modified Atmospheric Packaging with Improved Barrier Properties in Food Application
	Duration	3 yrs
	Total amount	Rs.15 lakhs
	Principal Investigator	Dr. R. N. Jagtap
	Research Fellow	-
4	Sponsor	BRNS
	Title	Green approach for recycling of e-waste through radiation processing
	Duration	1 Year
	Total amount	Rs. 10,58,800
	Principle Investigator	Professor R. N. Jagtap
	Research Fellow	Anand Krishnan
	Total amount	Rs. 95,000/-

5	Sponsor	BRNS
	Title	High energy radiation assisted depolymerization of polyethylene terephthalate for coating applications
	Duration	3 years (2012-2015)
	Total amount	21,00,000/-
	Principal Investigator	Dr. Anagha Sabnis
	Research Fellows	Vandana Jamdar (Ph.D. Tech)
6	Sponsor	Indian Council of Agricultural Research (ICAR), Govt. of India
	Title	Synthesis and Characterization of Nano-Cellulose and its Application in Biodegradable Polymer Composites to Enhance Their Performance
	Duration	4 years (March 2008 to 2012)
	Total amount	Rs 105.00/- Lakhs
	Principal Investigator	Dr. Shashank T. Mhaske
7	Sponsor	Board of Research in Nuclear sciences (BRNS), DAE, Govt. of India
	Title	Development of volatile organic compound (VOC) free radiation indicator labels along with prototype product manufacturing
	Duration	3 years (March 2012 to 2015)
	Total amount	Rs 24.50/- Lakhs
	Principal Investigator	Dr. Shashank T. Mhaske
9	Sponsor	DST- TIFAC New Delhi (2011-15)
	Title	Survey of Medium, small and micro Enterprenurs in Plastics at Dharavi Cluster, Mumbai
	Duration	4 Year
	Total amount	Rs. 21,50,000:00
	Principle Investigator	Prof. P. A. Mahanwar
10	Sponsor	AICTE New Delhi(2013-16)
	Title	Development of Conducting Polymer nanofibers by Electrospinnig and Polymer Nano fiber composites for

		Fuel Cells
	Duration	3 Year
	Total amount	Rs. 9,90,000:00
	Principle Investigator	Prof. P. A. Mahanwar
11	Sponsor	BRNS(2014-17)
	Title	Development of Heat Shrinkable cable and sheets for electrical and electronic application
	Duration	3 Year
	Total amount	Rs. 35, 00, 000
	Principle Investigator	Prof. P. A. Mahanwar
12	Sponsor	DST/FIST(2007-11)
	Title	Infrastructure Development at department of Polymer and Surface Engineering
	Duration	3 Year
	Total amount	Rs. 45,00,000
	Principle Investigator	Prof. P. A. Mahanwar
13	Sponsor	DST/FIST(2013-15)
	Title	Infrastructure Development at department of Polymer and Surface Engineering
	Duration	2 Year
	Total amount	Rs. 1, 25,00,000
	Principle Investigator	Prof. P. A. Mahanwar
14	Sponsor	RGST(2015-2018)
	Title	Development of Controlled Release formulations of Agrochemicals
	Duration	3 Year
	Total amount	Rs. 53,00,000
	Principle Investigator	Prof. P. A. Mahanwar

17. Inter-institutional collaborative projects and associated grants received

a) National collaboration b) International collaboration

Nil

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

Please refer to point 16

19. Research facility / centre with : NIL

- State recognition
- National recognition :
- International recognition :

20. Special research laboratories sponsored by / created by industry or corporate bodies

Nil

21. Publications:

	Prof. R. N. Jagtap	Prof. P. A. Mahanwar	Dr. V. V. Shertukade	Dr. A. S. Sabnis	Dr. S. T. Mhaske	Mr. A. R. Rao
Number of papers published in peer reviewed journals (national / international)	33	79		29	52	-
Monographs:	-	-		-		-
Chapters in Books:						
Edited Books:						
Citation Index	161	634		111	388	-
Impact Factor	1.2-3.5	0.26-2.7		1.2-3.8	0.253-3.91	-
h Index	7	15		6	9	-

22. Details of patents and income generated:

No.	Inventors	Title	Country	Funding Agency
1.	R. N. Jagtap	Functionalized clay filled LLDPE Nanocomposite film with improved Barrier properties of food applications	India	BARC
2.	R. N. Jagtap	Heat Reflective Coatings	India	Ishan Industries Baroda
3.	Mhaske Shashank Tejrao Kadam Pravin Gopal Kelkar Sunder Tukaram Savvashe Prashant Bhairavnath	Microwave synthesis of polyamide hot melt adhesive. Patent No : 3305/MUM/2014	India	POLYFIBRE LIMITED.
4.	Mhaske Shashank Tejrao Kadam Pravin Gopal Vaidya Parth Nitin Savvashe Prashant Bhairavnath	Novel poly(ester-amide) hot melt adhesive using castor oil. Patent No : 128/MUM/2015	India	POLYFIBRE LIMITED.
5.	Mhaske Shashank Tejrao Kadam Pravin Gopal Vaidya Parth Nitin Savvashe Prashant Bhairavnath	Novel poly(ester-amide) hot melt adhesive using ricinoleic acid. Patent No : 127/MUM/2015	India	POLYFIBRE LIMITED.

6	Mahanwar Prakash Anna Praharaj Bhatnagar Manoj	Centrifugal and Electrocentrifugal Spinning Machine for Synthesis of Micro and Nano Fibers from Polymer Melts & Solutions Patent No : 3395 / MUM / 2015	India	No
7	Mahanwar Prakash Anna Bambole Vaishali Abhay	Synthesis of Polyether Sulfone and Mixture of SiO ₂ and Al ₂ O ₃ Nanocomposites” Indian - 95 / MUM / 2014	India	No
8	Mahanwar Prakash Anna Bambole Vaishali Abhay	Synthesis of Polyether ether ketone Carbon Nano Platelets Composites”, Indian – 96 / MUM / 2014	India	No
9	Mahanwar Prakash Anna Sawant Manohar Ramchandra	Microcapsule and Process for Production Thereof Indian – 2712 / MUM / 2014	India	No
10	Mahanwar Prakash Anna Bambole Vaishali Abhay	Nanocomposites Carbon & Nano – plated Chain with Polyetheretherketone (PEEK) Indian – 629 / MUM / 2012	India	No
11	Mahanwar Prakash Anna Bambole Vaishali Abhay	Nanotube Polymer Composition” Indian – 1110 / MUM / 2012	India	No

Income Generated:

23. Areas of consultancy and income generated :

Sr.No.	Industry Name	Area	Income Generated	Name of the Faculty

1	Super Urea Coat Ltd.	Process Development	1.2 lacs	Prof. R.N Jagtap
2	Silvolac Ind.	Process Development	1.2 lacs	Prof. R.N Jagtap
3	Jain Irrigation Ltd.	Process Development	1.2 lacs	Prof. R.N Jagtap
4	Crompton & Greaves	Expert Advise	1.2 lacs	Prof. R.N Jagtap
5	Board of Research in Nuclear Science.	Expert Advise	15 lacs	Prof. R.N Jagtap
6	Vinnati Organics Ltd	Expert Advise	1.2 lacs	Prof. R.N Jagtap
7	Technova Imaging Systems Ltd.	Expert Advise	2.4 lacs	Prof. R.N Jagtap
8	Ishaan Industries	Process Development	1.2 lacs	Prof. R.N Jagtap
1	BASF India Ltd	Expert advise	80000/-	Dr. A.S. Sabnis
2	Pidilite industries	Expert advise	1.5 lacs	Dr. A.S. Sabnis
3	Miscellaneous	Expert advise	2 lacs	Dr. A.S. Sabnis
4	Shell India Pvt. Ltd.	Development project	10 lacs	Dr. A.S. Sabnis
1.	Polyfibre Ltd.	Product Engineering	5,00,000/-	Dr. S.T.Mhaske
2.	Supreme	Product Engineering	1,00,000/-	Dr. S.T.Mhaske
3.	BASF	Product Engineering	3,00,000/-	Dr. S.T.Mhaske
4.	M/s Associated Chemicals, Mumbai.	Expert advise		Prof. P. A. Mahanwar
5.	M/s Shiva Chemical Pvt.	Expert advise		Prof. P. A.

	Ltd., Mumbai.			Mahanwar
6.	M/s Texcel Plastics Ltd., Mumbai	Expert advise		Prof. P. A. Mahanwar
7.	M/s Chembond Chemicals Ltd., Mumbai	Expert advise		Prof. P. A. Mahanwar
8	M/s Jagdamba Enterprises, Jodhpur.	Expert advise		Prof. P. A. Mahanwar
9	M/s Rayechem RPG. Ltd., Mumbai.	Expert advise		Prof. P. A. Mahanwar
10	M/s Jai Bharat Textiles., Mumbai	Expert advise		Prof. P. A. Mahanwar
11	M/s Gondallia Associates, Mumbai.	Expert advise		Prof. P. A. Mahanwar
12	M/s Ajay Industries Akola	Expert advise		Prof. P. A. Mahanwar
13	M/s D. G. False Flooring system Mumbai	Expert advise		Prof. P. A. Mahanwar
14	M/s Sun Petrochemicals Pvt. Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
15	M/s Shanoo Paints Pvt. Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
16	M/s Advance Paints Pvt. Ltd., Mumbai.	Expert advise		Prof. P. A. Mahanwar
17	M/s British Scaffolding International Ltd.. Mumbai.	Expert advise		Prof. P. A. Mahanwar
18	M/s Shushama &	Expert advise		Prof. P. A.

	Electricals, Mumbai.			Mahanwar
19	M/s Supreme Industries. Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
20	M/s Larsen & Tubro. Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
21	Al- Yamaha Paints Factory, Saudi Arebia	Expert advise		Prof. P. A. Mahanwar
22	M/s Shaha Plasti Coats. Mumbai.	Expert advise		Prof. P. A. Mahanwar
23	M/s. Varsha Coaters. Rajkot.	Expert advise		Prof. P. A. Mahanwar
24	M/s Jesons Industries. Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
25	M/s Clariant (India). Ltd. Mumbai.	Expert advise		Prof. P. A. Mahanwar
26	M/s Noble Chemicals, Germany	Expert advise		Prof. P. A. Mahanwar
27	M/s Asian Paints Ltd, Mumbai	Expert advise		Prof. P. A. Mahanwar
28	M/s Mumbai Port Trust	Expert advise		Prof. P. A. Mahanwar
29	M/s RCF, Mumbai and Thal,	Expert advise		Prof. P. A. Mahanwar
30	M/s Kansai Goodlass Nerolac, Mumbai	Expert advise		Prof. P. A. Mahanwar
31	M/s Finolex Industries Ltd, Ratnagiri	Expert advise		Prof. P. A. Mahanwar

32	M/s British Scalfholdings Pvt. Ltd.	Expert advise		Prof. P. A. Mahanwar
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24. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

Hesse Lignal	Germany	International	Dr. S.T.Mhaske
Firat Ltd.	Turkey	International	Dr. S.T.Mhaske
National Plastics	Dubai	International	Dr. S.T.Mhaske
Wayne	USA	International	Dr. S.T.Mhaske
Garware wall ropes	Pune	National	Dr. S.T.Mhaske
SupremePetrochemLtd.	Raigad	National	Dr. S.T.Mhaske
Jai Corp. Ltd.	Vapi	National	Dr. S.T.Mhaske
K. J. Sommaiya College of Engineering	Mumbai	National	Prof. P.A.Mahanwar
Saboo Siddiqui College of Engineering.	Mumbai	National	Prof. P.A.Mahanwar
Veermata Jijabai Technical Institute	Mumbai	National	Prof. P.A.Mahanwar
Garware Institute of Carrier Education & Development	Mumbai	National	Prof. P.A.Mahanwar

25. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other (please specify)

Sr. No.		Name of the faculty
1.	Vice Chairmen, Indian Plastics Institute, Mumbai Chapter.	Dr. S.T.Mhaske
2.	Secretary, The Color	Dr. S.T.Mhaske

	Society, India	
3.	Governing Member, The Society for Polymer Science, India	Dr. S.T.Mhaske
4.	Hon. President, Color Society, Mumbai.	Prof. P.A.Mahanwar
5.	Member Board of Governors, UDCT Alumni Association, Mumbai.	Prof. P.A.Mahanwar
6.	Member, Technical Advisory Committee Ministry of Science & Technology, Government of India, New Delhi	Prof. P.A.Mahanwar
7.	Course Co-ordinator DPAT, Garware Institute University of Mumbai	Prof. P.A.Mahanwar
8.	Permenant Invitee: Indian Small Scale Paint Association (ISSPA)Indian Resin Manufacturers Association (IRMA)	Prof. P.A.Mahanwar
9.	All India Printing Ink Manufacturer's Association (AIPIMA)	Prof. P.A.Mahanwar

10.	All India Plastics Manufacturer's Association (AIPMA)	Prof. P.A.Mahanwar
11.	Hon. President: Indian Paint and Coating Association (Western Region)	Prof. P.A.Mahanwar
12.	Life Member: Indian Plastics Institute	Prof. P.A.Mahanwar
13.	Member Secretary: All Plastics Recycler's Association (APRA)	Prof. P.A.Mahanwar
14.	Life Member: Society of Polymers	Prof. P.A.Mahanwar
15.	Life member: Society of Plastics Engineers	Prof. P.A.Mahanwar
16.	Member: Bureau of Indian Standards CHD20	Prof. P.A.Mahanwar
17.	Member, Board of Governor's, UDCT Alumni Association	Prof. P.A.Mahanwar

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).

Name of Faculty	Training Courses	Duration	Sponsored By
Dr. Anagha Sabnis	Faculty development programme	7 Days	TEQIP
	Computational method of analysis	5 Days	TEQIP

27. Student projects

- a. percentage of students who have done in-house projects including inter-departmental projects: **100%**
- b) percentage of students doing projects in collaboration with other universities industry / institute : **Nil**

28. Awards / recognitions received at the national and international level by

/ Faculty

Sr. No.	Award	Name of faculty
1.	3 rd National Award for Technology Innovation in "Green Polymeric Materials & Products" By Dept. of Chemicals and petrochemicals, Ministry of Chemicals and fertilizers. Govt. of India.	Dr. S.T.Mhaske
2.	Young Associate of Maharashtra Academy of Sciences. Govt. of Maharashtra	Dr. S.T.Mhaske
3.	Secretary, IPI, Mumbai	Dr. S.T.Mhaske
4.	Received award of Fellow of Maharashtra Academy of Science, Pune, 2015.	Prof. P.A. Mahanwar,

/ Doctoral / post doctoral fellows:

Gunawant Lokhande: Best Research Paper(1st prize) in APC-Rangotsav2015, National Conference, ICT Polymer and Surface Engineering

Dinesh Balgude, Kunal Wazarkar, Ajay Rane

1st Prize in Asian Paints Paper Contest-2013

Dinesh Balgude, Rohit Pathak, Amol Hajare

3rd Prize in Asian Paints Paper Contest-2013

Mukesh Kathalewar and Nikita Mhadeshwar

Best Poster in MACRO-2015 held at Kolkata between 23-26 January 2015

Kunal Wazarkar and Nikita Mhadeshwar

2nd Prize in Asian Paints Paper Contest-2014

Students :□

29. Seminars/ Conferences/Workshops organized and the source of funding (national international) with details of outstanding participants, if any.

Sr. No.	Title of Workshop/Seminar/ Conference	Speaker	Date of Event
1.	Seminar on “Experiencing Breakthroughs in Separation & Detection Techniques” by Agilent	From Agilent	23 rd June, 2015
2.	DST – TIFAC: MSME, ICT and APRA workshop on “3D Printing and its Applications”	Mr. Siddhant Pai, Prototype Printing, Pune	25 th February, 2015
3.	ICT – IPI One Day workshop on “Advances in Analytical Techniques for Plastics, Polymer, Composites & Packaging Industries”	Dr. Swaminathan Sivaram, NCL - CSIR	10 th April, 2015
4.	Advances in Polymers and Coatings: Rangotsav 2015	Plenary Lectures, Paper / Poster Presentations	30 th – 31 st January, 2015
5.	DST – TIFAC: MSME, ICT and APRA seminar on “Health, Safety, Cleanliness and Hygiene at Workplace”	Several Invited Speakers including Dr. Anil Kakodkar	15 th – 16 th December, 2014
6.	Golden Jubilee Visiting Fellowship Lecture on “Photovoltaics Education & Research at UNSW and ACAP / AUSIAPV”	Dr. Richard Paul Corkish, University of New South Wales, Australia	7 th August, 2014
7.	Seminar on “Nanotechnology in Australia”	Prof. Gunther Andersson, Flinders University, Australia	26 th March, 2014
8.	Advances in Polymers and Coatings: Rangotsav 2014	Plenary Lectures, Paper / Poster Presentations	17 th – 18 th January, 2014
9.	UDCT Diamond Jubilee Visiting Fellowship in Polymer Science & Technology	Dr. Lalit Varshney, Head – RTDS, BARC	7 th September, 2013
10.	Tipco - UDCT Diamond Jubilee Visiting	Dr. Suryasarthi Bose,	5 th – 6 th

	Fellowship in Thermosets & Composites	IISc Bengaluru	September, 2013
11.	Synpol – ICT Diamond Jubilee Visiting Fellowship in Science & Technology of Pigments Endowment	Mr. Amit S. Ambelal	31 st August, 2013
12.	Advances in Polymers and Coatings: Rangotsav 2013	Plenary Lectures, Paper / Poster Presentations	15 th – 16 th February, 2013
13.	Seminar on “Current Research Trends in Polymer Science”	Dr. George Bechtold, DFG, Germany	1 st December, 2012

30. Code of ethics for research followed by the departments:

- (a) Plagiarism is avoided using web based tools
- (b) Honesty, team work is promoted
- (c) Avoid results manipulation

Student profile programme-wise:

Name of the Programme (B.Tech)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
2015-16	Admissions for the UG course is conducted through common admission process of DTE and this data is obtained from DTE	23	11	Pursuing First Year	
2014-15		18	11	Pursuing Second Year	
2013-14		24	6	Pursuing Third Year	
2012-13		26	7	Pursuing Final Year	
2011-12		25	6	100	100

M.Tech

Name of the Programme (M.Tech)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
2014-16	35	14	8	Pursuing Second Year	
2013-15	30	16	5	100	100
2012-14	40	21	6	100	100

2011-13	31	14	9	100	100
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31. Student profile programme-wise:

Applicable for PG

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
2015-17	27.27	50	22.72	-
2013-15	28.57	71.42	-	-
2012-14	18.51	81.48	-	-
2011-13	26.08	73.91	-	-

32. Diversity of students: Not applicable for UG

Applicable for PG

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
2015-17	27.27	50	22.72	-
2013-15	28.57	71.42	-	-
2012-14	18.51	81.48	-	-
2011-13	26.08	73.91	-	-

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

GATE Qualified Student Last 4 Years : 20

34. Student progression

Student progression	Percentage against enrolled
----------------------------	------------------------------------

UG to PG	32
PG to M.Phil.	00
PG to Ph.D.	40
Ph.D. to Post-Doctoral	00
Employed	
<input type="checkbox"/> Campus selection	75
<input type="checkbox"/> Other than campus recruitment	25
Entrepreneurs	2

35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	85
from other universities within the State	15
from universities from other States	Nil
from universities outside the country	Nil

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period : Nil

37. Present details of departmental infrastructural facilities with regard to

- a) **Library** : common facility for entire Institute
- b) **Internet facilities for staff and students** : All faculties as well as students have the facility for Internet access.
- c) **Total number of class rooms** : details as below
- d) **Class rooms with ICT facility** : 2 nos
- e) **Students' laboratories** : details as below
- f) **Research laboratories**: details as below

Sr. NO	Available floor area	CAPACITY
1	21 * 19.5 Feet	30
2	21 * 19.5 Feet	30
3	33 * 21 Feet	60

Sr.NO	Available floor area	LAB
1	28.5 * 20.5 Feet	Characterisation Lab
2	41 * 16 Feet	Instrument Lab

Laboratory Details

Sr. No.	Available floor area (sq.m)	Name of the Lab
1.	39.06	A-164
2.	37.18	A-164 Colour Lab
3.	90.31	A-163
4.	102.81	A-169
5.	50.62	A-171
6.	148.83	A-134
7.	45.54	Room No.2
8.	127.71	
9.	44.13	Room No.3
10.	16.03	Room No.2

7,8,9,10 Labs Polymer Research Center, Building

38. List of doctoral, post-doctoral students and Research Associates

Faculty	Host University	Other universities

Prof. R. N. Jagtap	Nakula S. Bhutad	Gunwant Lokhande
		Sachin Chambhare
		Poonam Saindane
		Santosh Wagh
Prof. P. A. Mahanwar	Chandan Fuke	Sunder Kelkar
	Khushi Gorasia	Snehal Yedurkar
	Pravin Gaikawad	Priyanka Oberoi
	Nikesh Samarth	Bhuvanesh Sharma
	Manoj Bhatnagar	Savita Bansode
Dr. A. S. Sabnis	Mukesh Kathalewar	
	Dinesh Balgude	
	Vandana Jamdar	
	Kunal Wazarkar	
Dr. S. T. Mhaske	Aarti More	Vijay Jamnik
	Manoj Mali	
	Nidhi Shah	Ajit Patil
	Ganesh Phalak	Sumit Lal
	Deepak Patil	
	Sumit Tated	
Dr. V. V. Shertukade	Chaitanya Mundhe	Pramod Nikam
	Ulka Rane	Prarthana Dhanvijay
Mr. A. R. Rao	-	-

39. Number of post graduate students getting financial assistance from the university.

Nil

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

No

41. Does the department obtain feedback from

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes and it is recorded in MIS system

b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? -

c. alumni and employers on the programmes offered and how does the department utilize the feedback?

Feedback forms are stored in files of Department office

42. List the distinguished alumni of the department

Sr. No.	Name & Brief Data	Business
1	Mr. Ravi K. Marphatia – B.Sc.(Tech), PPV., 1949, Consultant to many industries & Visiting Professor at UICT for Surface Coatings	Consultant
2	Mr. B.M.Thakkar - B.Sc.(Tech), PPV, 1944 Producer of raw materials for thermosetting Resins and Moulding compounds	Tipco Industries Ltd.
3	Mr. B.S. Rajpurohit - B.Sc. Tech), Plastics , 1960 Producer of Equipment in Polymers and plastics such as PVF, PP, PVDF and FRP.	Chemical Process Equipments Ltd.
4	Mr. J.R. Shah	M.D. Jayvee Organics Mumbai
5	Mr. Ashwin S. Dani	M.D. Asian Paints
6	Dr. Y.B. Vasudev	Ex. Senior V.P. (Tech) Reliance Industries Ltd
7	Mr. J.M. Nadkarni	Ex. M.D. Bombay Paints
8	Mr. M.C. Choksi	Ex. M.D. RPL
9	Mr. A.E. Ladhabhoy	Ex. Senior V.P. Reliance Industries Ltd.
10	Mr. N.K. Narkhede	Ex. M.D. Narchem Industry

43. Give details of student enrichment programmes (special lectures / workshops /

seminar) involving external experts.

Sr. No.	Title of Workshop/Seminar/ Conference	Speaker	Date of Event
1.	Seminar on “Experiencing Breakthroughs in Separation & Detection Techniques” by Agilent	From Agilent	23 rd June, 2015
2.	DST – TIFAC: MSME, ICT and APRA workshop on “3D Printing and its Applications”	Mr. Siddhanth Pai, Prototype Printing, Pune	25 th February, 2015
3.	ICT – IPI One Day workshop on “Advances in Analytical Techniques for Plastics, Polymer, Composites & Packaging Industries”	Dr. Swaminathan Sivaram, NCL - CSIR	10 th April, 2015
4.	Advances in Polymers and Coatings: Rangotsav 2015	Plenary Lectures, Paper / Poster Presentations	30 th – 31 st January, 2015
5.	DST – TIFAC: MSME, ICT and APRA seminar on “Health, Safety, Cleanliness and Hygiene at Workplace”	Several Invited Speakers including Dr. Anil Kakodkar	15 th – 16 th December, 2014
6.	Golden Jubilee Visiting Fellowship Lecture on “Photovoltaics Education & Research at UNSW and ACAP / AUSIAPV”	Dr. Richard Paul Corkish, University of New South Wales, Australia	7 th August, 2014
7.	Seminar on “Nanotechnology in Australia”	Prof. Gunther Andersson, Flinders University, Australia	26 th March, 2014
8.	Advances in Polymers and Coatings: Rangotsav 2014	Plenary Lectures, Paper / Poster Presentations	17 th – 18 th January, 2014
9.	UDCT Diamond Jubilee Visiting Fellowship in Polymer Science & Technology	Dr. Lalit Varshney, Head – RTDS, BARC	7 th September, 2013
10.	Tipco - UDCT Diamond Jubilee Visiting Fellowship in Thermosets & Composites	Dr. Suryasarthi Bose, IISc Bengaluru	5 th – 6 th September, 2013
11.	Synpol – ICT Diamond Jubilee Visiting Fellowship in Science & Technology of Pigments Endowment	Mr. Amit S. Ambelal	31 st August, 2013
12.	Advances in Polymers and Coatings: Rangotsav 2013	Plenary Lectures, Paper / Poster Presentations	15 th – 16 th February, 2013
13.	Seminar on “Current Research Trends in Polymer Science”	Dr. George Bechtold, DFG, Germany	1 st December, 2012

44. List the teaching methods adopted by the faculty for different programmes.

Industry visits are arranged for better understanding of the subject. Powerpoint presentations including relevant videos from internet are made available for students.

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

Regular feedbacks from students, employees as well as alumni are obtained and accordingly course content is modified.

Also, the methodology adopted in “continuous assessment” help in generating a bridge between different courses.

46. Highlight the participation of students and faculty in extension activities.

Guest lectures from industry people are arranged to let the students know current research and technology going on about the concerned topic. Students are allowed to interact and ask questions to them. Along with the theoretical knowledge, regular In-plant visits are arranged by the department to well known industries to give in depth knowledge about the subject.

47. Give details of “beyond syllabus scholarly activities” of the department.

Technical conference “Rangtsav” is arranged annually, wherein undergraduates, post graduates and doctoral fellows from host as well as other industries are encouraged to present their research and/or review articles.

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Nation Board of Accreditation for Master Course B.Tech (Polymer Engineering and Technology, Surface Coating Technology)

Nation Board of Accreditation for Master Course M.Tech (Polymer Engineering and Technology, Surface Coating Technology)

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

Department of PSE is actively engaged in basic and applied research. The department is rated as the best Polymer engineering department in India in terms of quantity and quality of research. A large amount of funding generated through research projects and

new projects approved by industries and government agencies and industrial consultancy. Faculty members are actively engaged in consultation activity and are helping industries to improve the productivity as well as bring down the cost of production.

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strength

Flexible structure

Faculty take part in administrative affairs

Good interpersonal relationships

Teaching (both UG and PG) and research programmes exist in a large variety of frontier as well as unique areas.

A large no. of high monetary value sponsored research projects.

A large no. consultancy projects

State of the art laboratories

Weaknesses

Limited campus space

Limited hostel facilities

No specific contact hours for PG students. Hours may be inadequate in comparison with other institutions in the country.

Limited number of faculty and no recruitment in last ten years.

Opportunities

Refresher courses and Continuing Education Programs for industry personnel

Revision of B.Tech. / M. Tech. Syllabi for better recognition worldwide (GPA system, continuous evaluation, etc.)

Web based teaching programs / distance education programs can be started

Collaboration with leading Universities at International level

Infrastructure needs to be upgraded

Challenges

Competition from indian institutes and universities

51. Future plans of the department.

Increase in the number of research

Centre for Eco-friendly Plastic Processing and Recycling : Professor P.A. Mahanwar /
Dr. S. T. Mhaske

More linkage with the universities within and abroad will be established so also with the industry. This is expected to reflect in better exposure to the students and also implementation of innovative research activities by cross cultivation.

Pharmaceutical Sciences and Technology Department

The Department of Pharmaceutical Sciences and Technology (DPST) was established in the year 1943, with the initiation of the B.Sc. (Tech) course in Pharmaceuticals and Fine Chemicals, a two year course, followed by the Bachelor of Pharmacy (B.Pharm) a three year course, starting in in 1958. Subsequently the Masters courses in both streams and Doctoral courses commenced. Today DPST offers the B.Tech (Pharmaceutical Chemistry and Technology) and B.Pharm, both four year courses, M.Tech in Pharmaceutical Technology and M.Pharm in three branches; Pharmaceutics, Pharmaceutical Chemistry and Medicinal Natural Products. The Department also supports the M.Tech courses of ICT in Bioprocess Technology, Green Technology and Perfumery. Ph.D(Tech) programs are offered in Pharmaceutical Technology, Pharmaceutics, Pharmaceutical Chemistry, Pharmacology and Pharmacognosy while PhD programmes are offered in Biotechnology and Chemistry.

The B. Tech. course which deals with the technology of manufacture of drugs and pharmaceuticals, has all the ingredients for a solid foundation in basic sciences, mathematics, computation and chemical engineering. Basic science subjects like chemistry, mathematics and physics are dealt with in depth, while students are introduced to subjects of biochemistry, microbiology and pharmacology. Strong background knowledge of chemical engineering including chemical reaction engineering, unit operations, separation processes, instrumentation and process control, and stoichiometry is imparted to synergise with the major focus, which is on manufacturing process technology and chemistry of intermediates and fine chemicals, active pharmaceutical ingredients (API), natural products, and pharmaceutical formulation development.

The goal of the B.Pharm course, the first course in the state of Maharashtra, is to enable an understanding of the science of drugs and drug actions. The course involves a detailed study of Pharmaceutics, Pharmaceutical and Medicinal chemistry, Pharmacology, Pharmaceutical Analysis and Pharmacognosy. The course is supported with in depth courses in basic sciences namely, organic chemistry, inorganic chemistry, physical chemistry, biochemistry, microbiology, maths and other relevant subjects like biotechnology, forensic pharmacy, management. The focus is on development of an expertise in the chemistry of drugs, drug effects, dosage regimen, drug toxicity and

interactions with adequate knowledge of the synthesis of drugs, principles of drug formulation design and evaluation and regulatory requirements.

The vision of DPST is to be a globally recognized premier educational and research centre with world class facilities, adopting international best practices, focused on the integration of science and technology in the areas of Drug Discovery, Drug Delivery, Organic Process Research and Herbal Healthcare Products. In keeping with the vision the **mission** of the department is to achieve the best in pedagogy and research, through creation of a dedicated team of faculty and state of art research facility, to develop skilled manpower and innovative cost effective technology to support national healthcare programmes.

Currently the student strength of DPST is 190 undergraduates, 43 Masters students and 138 PhD students. The thrust areas of research include Pharmaceutical and Medicinal Chemistry, Drug Delivery Technology, Pharmacology and Pharmacognosy. DPST has received recognition as a Centre of Advanced Studies in Pharmaceutical Science and Technology, from the UGC and support under the DST FIST programme. Faculty are involved actively in research and have attracted number of projects from Government of India and the industry both national and international. Over the past five years, total grants of more than Rs. 17 crores have been received. DPST has over the years built up infrastructure for teaching and research and has modern facilities and sophisticated equipment. In the past five years DPST has over 350 Publications in peer reviewed high impact factor journals, 15 patents filed, 23 monographs on herbal medicines and 21 books and book chapters.

Our distinguished alumni include Dr. John Kapoor, Dr. A.V.Rama Rao, Dr. Shirish Modi, Dr. K. Anji Reddy, Prof. M.R.Baichwal, Dr. R.P.Iyer, Dr. Dhiren Thakker and Nitin Deshmukh amongst others.

Several Symposia, seminars, workshops and endowment lectures are regularly organised by the department. A few of the events organised in the last few years are mentioned below:

**International Symposium on Drug Discovery in Infectious Diseases and Cancer (DDIDC)
held on 16th-17th Jan, 2013 organized by Dept of Pharm Sci and Tech**





International workshop on Research writing Skills “Publish or Perish” held on 12th-13th Nov, 2013 organized by Dept of Pharm Sci and Tech





Prof. M.R. Baichwal Endowment Lecture held on 23rd Oct, 2013 organized by Dept of Pharm Sci and Tech

Dr. Amit Misra, CSIR Lucknow



Prof. S.K. Pradhan Endowment Lecture held on 28th Jan, 2014 organized by Dept of Pharm Sci and Tech

Speaker Dr. G. Mugesh with guests and faculty



Prof. R.S Baichwal Seminar held on 5th March, 2014 organized by Dept of Pharm Sci and Tech

Speakers and Faculty





ICT UKIERI Seminar on Green Processing Technologies for Poorly Soluble Drugs





**Themis Chemicals visiting Fellowship endowment lecture held on 11th Feb, 2014
organized by Dept of Pharm Sci and Tech**



**Cipla Endowment Lecture held on July 24, 2014 organized by Dept of Pharm Sci and Tech
Dr. Sanjib Bhakta with Prof. M.S. Degani**



Prof M.R. Baichwal Endowment Lecture held on February 23, 2015 organized by Dept of Pharm Sci and Tech

Prof Bhupinder Singh Bhoop with Prof. P.V.Devarajan, Head, Dept of Pharm Sci and Tech



**Professor S. K. Pradhan Endowment Lecture held on February 23, 2015 organized by
Dept of Pharm Sci and Tech**

Dr. Jyoti Chattopadhyaya with audience



**TEQIP workshop on Intellectual Property Rights held on Feb 4, 2015 organized by Dept
of Pharm Sci and Tech**



1. **Year of establishment:** 1943
2. **Is the Department part of a School/Faculty of the university?** Yes
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)**
B.Pharm, B.Tech (Pharma), M.Pharm (Pharmaceutics, Pharmaceutical Chemistry, Medicinal Natural Products), M. Tech (Pharma), PhD (Tech), Integrated PhD
4. **Interdisciplinary programmes and departments involved:** Nil
5. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** Nil
6. **Details of programmes discontinued, if any, with reasons:** Nil
7. **Examination System:** Semester
8. **Participation of the department in the courses offered by other departments:**
M. Tech (Green Tech), M. Tech (Bioprocess Technology) and M. Tech (Perfumery)
9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (Including CAS and MPS)
Professors	3	1	7
Associate Professors	6	4	2
Asst. Professors	7	7	3
Others	1	-	1

10. **Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialization	Number of years of Experience (Years)	Number of PhD students guided for the last 4 years	
					Completed	Ongoing
K. G. Akamanchi	B.Sc., B. Sc. (Tech.), Ph.D. (Tech.)	Professor of Pharmaceutical Technology	Pharmaceutical Chemistry	31	12	10

Purnima D. Amin	B. Pharm., M. Pharm., Ph.D. Tech	Professor in Pharmacy	Pharmaceutics	27	6	11
Ganesh U. Chaturbhuj	PhD (Tech)	Asst. Professor in Pharmaceutical Chemistry	Pharmaceutical Chemistry	13	0	6
Hemchandra K. Chaudhari	PhD (Tech)	Asst. Professor in Pharmacy	Pharmaceutical Chemistry	2.5	0	0
Mariam S. Degani	B.Pharm, M.Pharm, PhD (Tech)	HOD of Pharmaceutical Science and Technology; Professor in Pharmaceutical Chemistry	Pharmaceutical Chemistry	30	3	17
Padma V. Devarajan	B.Pharm, M.Pharm, PhD (Tech)	Professor of Pharmacy	Pharmaceutics	29	11	19
Prajakta Dandekar Jain	Ph. D. (Tech.) in Bioprocess Technology	UGC Assistant Professor in Engineering Sciences	Pharmaceutical Biotechnology	~4	-	5
Archana Ramesh Juvekar	B.Pharm. M.Pharm. Ph. D (Tech.)	Professor in Pharmacology and Physiology	Pharmacology	29	04	10
K.S.Laddha	PhD Tech	Professor	Pharmacognosy and Phytochemistry	26	5	11
Vandana B. Patravale	Ph.D. (Tech.)	Professor of Pharmaceutics	Pharmaceutics	25	10	21
Sadhana Sathaye	PhD Tech	Associate Professor in Pharmacy	Pharmacology	24	03	13

Vikas N. Telvekar	B.Sc, B.Sc (Tech), M.Sc (Tech) PhD (Tech)	Assistant Professor in Pharmaceutical Chemistry	Pharmaceutical Technology	13	8	8
Pradeep Ratilal Vavia	B.Pharm. M.Pharm. Ph. D (Tech.)	Professor in Pharmaceutics, Academic Dean, I/c Head, Department of oils, Oleochemicals and Surfactants Technology	Advance Pharmaceutics	22	12	16

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Senior Visiting Fellows:

- Professor Donald Abraham
- Professor Theresa M. Allen
- Dr A. H. Bandivdekar
- Dr. N. H. Balasinor
- Professor Bhupinder Singh Bhoop
- Dr. Jyoti Chattopadhyaya
- Mr. Mahendra B Chaudhari
- Mr. Bidhan Dasgupta
- Dr. Pankaj B. Desai
- Dr. Vilas Dhanukar
- Mr. Sundeep Dugar
- Dr. Susheel Durani
- Dr. Krishna N. Ganesh
- Prof (Dr). Kanjaksha Ghosh
- Dr. Sudipta Maiti
- Professor Amit Misra
- Professor Goverdhan Mehta

- Dr. Kasim Mookhtiar
- Dr. G. Mugesh
- Dr. Kuppuswamy Nagarajan
- Prof. Anant Paradkar
- Dr. M.G.R. Rajan
- Professor Dr. P. S. Ramani
- Dr. B. S. Shankarnarayna Rao
- Dr. Rajiv Sarin
- Dr. Shobhona Sharma
- Professor Dhiren R Thakker
- Professor Dr. Ganesh Thakur
- Professor P. Thyagarajan
- Dr. Lohit Tutupalli
- Dr. Vijay Walame
- Prof. M.R.Yadav

Adjunct Faculty:

- Dr. Noel D'Souza
- Dr. Bansi Lal

Emeritus Professors: Nil

12. Percentage of classes taken by temporary faculty – programme-wise information:
NA

13. Programme-wise Student Teacher Ratio:

B.Pharm: 11.89

B.Tech: 2.50

M.Pharm: 4.64

M.Tech (Pharma): 1.45

PhD (Tech): 10.76

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual:

Sanctioned: 15, Filled: 13, Actual: 16 (13+3 Temporary)

15. Research thrust areas as recognized by major funding agencies:

UGC CAS-I:

Molecular Drug Design

Synthesis of Drugs by Novel methods

Design and Development of novel drug delivery systems

UGC CAS-II:

Nano Drug Delivery systems

Pharmacological and Toxicological screening models

CAMM (Computer Aided Molecular Modelling) based drug design and Process Chemistry

DST FIST:

Drug Discovery and Development

Drug Delivery Systems

Pharmaceutical and Phytochemical investigations of drugs and natural products

- 16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.**

Number of faculty involved: 12

Funding Agency	Project Title	Total amount (Rs.)	National/International
AICTE	Extraction of phytochemicals by using green technology	25,00,000	National
AICTE	Process Engineering For Fabrication of Micro/ Nano Particles	18,00,000	National
AICTE Research Promotion Scheme	Design, synthesis and evaluation of peripherally restricted cannabinoid receptor 2 selective agonist for treatment of neuropathic pain	16,00,000	National

<u>All India Council for Technical Education (RPS)</u>	Isolation standardization and pharmacokinetic profiling of herbal drug	22,66,667	National
BRNS	Design, synthesis & evaluation of 18F ligands for diagnosis of Alzheimer's disease	18,72,265	National
Central Council for Research in Ayurveda & Siddha, Department of AYUSH	Studies on purification & detox-ification (Sodhana prakriya) of toxic Ayurvedic medicinal plants	5,91,000	National
Central Council for Research in Ayurvedic Sciences (CCRAS)	Safety/Toxicity Study of Classical Ayurvedic Formulations	16,40,000	National
DAE-BRNS	CD44 Targeted Hyaluronic acid- siRNA Bearing COS Nanoplexes	16,95, 000	National
DBT	Nanotherapeutics with Lipidic nanoparticles for the treatment of malaria	1,07,90,000	National
DBT	Extraction and isolation of seabuckthorn actives for developing nanocarrier based cosmeceuticals	58,34,000	National
DBT	NANOCOS™: -COS-siRNA nanoplexes for inhibiting intracellular mycobacterial	19, 99, 000	National
DBT	Synthesis and Cellular evaluation of Novel Palladacycle complexes for breast cancer	24,81, 000	National

DBT	Development and Evaluation of Fixed Dose Combination for Tuberculosis By using Hot Melt Extrusion technology	45,00,000	National
DBT-ICMR	Rectal microbicidal nanotherapeutics for HIV/ AIDS	65,42,400	National
Department of Biotechnology	Development and evaluation of Fixed Dose Combination (FDCs) for Tuberculosis using Hot Melt Extrusion Technology	45,78,000	National
Department of Biotechnology	Custom deigned efficient safe intracellular targeted nanoparticulate veterinary drug delivery system	63,61,000	National
Department of Biotechnology	Targeted Nanoparticulate Drug Delivery System of Doxorubicin for hepatic cancer using asialoglycoprotein receptor mediated approach	48, 82, 000	National
Department of Biotechnology (DBT)	Early Translational Study Of Orally Administered Nanoparticulate Carriers For Pulmonary Targeting Of Anti-Tubercular Drug Combinations	1,01,49000	National
Department of Science Technology	Evaluation of anti-epileptic activity of medicinal plants in animal models of epilepsy	30, 11, 782	National
DST	Therapeutic approaches using controlled transdermal delivery to treat neurodegenerative diseases in aging populations	26,62,800	National
DST (Ramanujan fellowship)	Knocking down pathways responsible for intra-macrophage survival of	25,00, 000	National

	Mycobacterium tuberculosis: RNAi-Nano approach		
ICMR	Nanotechnology-based diagnostic module for detection of brucellosis	18,44,524	National
ICMR	Evaluation of Targeted Nanoparticulate Drug Delivery System in Clinical Cases of Tuberculosis in Non-Human Primates	12,27,000	National
ICMR	Preclinical testing for safety of synthetic peptide 1 of 80 kDA HAS for development of anti-fertility vaccine	12,00,000	National
Indian Council of Medical Research	Quality Standards of Indian Medicinal plants & Preparation of Monographs thereon	25,60,572	National
Indian Council of Medical Research	Quality Standards of Indian Medicinal plants and Preparation of Monographs thereon	31,51,539	National
Indian Council of Medical Research (Department of Health Research)	Development of Nasal Drug Delivery System of Antiepileptic Drugs for Emergency Therapy	10,08,724	National
Rajiv Gandhi Science and Technology Commission	Developing technology for extraction and isolation of Anti-Arthritic drugs from plants indigenous to Maharashtra.	55,16,999	National
Rajiv Gandhi Science and Technology Commission (RGSTC), Govt. of Maharashtra,	3D cell culture Technology for Developing Affordable Bioengineered Skin for Burn Patients	85,10,000	National

Rajiv Gandhi Science and Technology Commission	Extraction of Volatile oil from Orange Peels, Separation of Limonene from it and its Industrial Applications	19,49,250	National
RGNF	Novel lipidic drug delivery system by HME	12,85,000	National
Science & Engineering Research Board (SERB), Govt. of India	Design and Synthesis of Novel Antimycobacterial Agents	18,68,000	National
Science & Engineering Research Board (SERB), Govt. of India	Design, Synthesis and Evaluation of Novel Hypoglycemic Agents	12,00,000	National
SERB, DST	Ramanujan Fellowship	73,00,000	National
TEQIP	Microwave assisted Halogenation reactions using flow reactor	27,00,000	National
UGC	Continuous process for the production of solid lipid nanoparticles (SLN) as drug-carrier systems via hot-melt extrusion (HME)	7,00,000	National
UGC (Startup Research grant)	Exploring biodegradable polymer combination for developing nanoparticles for delivering therapeutic nucleic acids	6,00,000	National
UGC Major research Project	Design, Synthesis and Biological Evaluation of 2-Phenyl-4,5-(substituted)thiophene-3-carboxylic acid derivatives as Anti-inflammatory agents	7,52,000	National
UGC-MRP	Design and synthesis of novel arylquinoline	19,96,000	National

	analogues as potential anti-tuberculosis agents		
UKIERI (UK-India Education and Research Initiative) funded by British council	Hot melt extrusion assisted solid dispersions for oral bioenhancement of poorly bioavailable drugs under collaborative project 'process analytics enabled green technologies for processing of poorly soluble drugs'	40,00,000	International
University Grants Commission	Design and Synthesis of Anti-diabetic agents	12,40,000	National
University Grants Commission	Design, synthesis & biological evaluation of 2-pheny-4, 5- (substituted) 3-carboxylic acid derivatives as anti-inflammatory agents	7,52,500	National
	Total	11,50,49,240	

**17. Inter-institutional collaborative projects and associated grants received
National Collaborations**

Project Title	Name of the collaborating Institute	Grant Received	Funding agency
Design, synthesis & evaluation of 18F ligands for diagnosis of Alzheimer's disease	BARC	18,72,265	BRNS
Development and evaluation of fixed dose combinations (FDC's) for tuberculosis using Hot Melt Extrusion Technology (HME)	ICT-ICT	45,78,000	DBT
Synthesis and Cellular evaluation of Novel Palladacycle complexes for breast cancer	Dept. of Chemistry, ICT	24,81,000	Department of Biotechnology

Custom design efficient safe intracellular targeted nanoparticulate veterinary drug delivery system	BVC, NIRRH	63,60,000	Department of Biotechnology
NANOCOS [™] : -COS-siRNA nanoplexes for inhibiting intracellular mycobacteria	The Foundation for Medical Research, Mumbai	19,99,000	Department of Biotechnology
Early Translational Study Of Orally Administered Nanoparticulate Carriers For Pulmonary Targeting Of Anti-Tubercular Drug Combinations	National JALMA Institute of Leprosy & Other Mycobacterial Diseases, Agra	1,01,49,000	Department of Biotechnology (DBT)
Rectal Microbicidal Nanotherapeutics for HIV/ AIDS	National Institute for Research in Reproductive Health, Mumbai	65,42,400	Department of Biotechnology (DBT)- Indian Council of Medical Research (ICMR)
Development and evaluation of siRNA loaded nanomedicine in computational and cellular Models	IIT-Bombay, National Institute of Research in Reproductive Health (Mumbai)	2,82,32,000	Department of Science and Technology
Evaluation of antiepileptic activity of plants in animal model of epilepsy	NIMHANS-ICT	34,61,000	DST
Evaluation of Targeted Nanoparticulate Drug Delivery System in Clinical Cases of Tuberculosis in Non-Human Primates	BVC, NIRRH	12,27,000	ICMR
Preclinical testing for safety of synthetic peptide 1 of 80 kDA HAS for development of anti-fertility vaccine	NIRRH, National Institute of Nutrition Hyderabad	12,00,000	ICMR

Nanotechnology-based Diagnostic Module for Detection of Brucellosis	Bombay Veterinary College, Mumbai	18,44,524	Indian Council of Medical Research (ICMR)
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International Collaborations

Project Title	Name of the collaborating Institute	Grant Received	Funding agency
Antitumor and anti-metastatic potential of Indian spices	University of Delaware (DE), USA	\$15600	University of Delaware (DE), USA
Investigation of biologically active molecules as novel therapeutic strategies in Parkinson's disease	King's College London Wolfson Centre for Age-Related Disease Department of Neurodegeneration, Wolfson Wing, Hodgkin Building London, U.K.	£13800	Newton Bhabha (DST inspire)
Screening of new therapeutic entities in Alzheimer's disease	King's College London Wolfson Centre for Age-Related Disease Department of Neurodegeneration, Wolfson Wing, Hodgkin Building London, U.K.	£13800	Newton Bhabha (DST inspire)
Process analytics enabled green technologies for processing of poorly soluble drugs	University of Bradford, UK	£40,000	UKIERI (UK-India Education and Research Initiative) funded by British council
Therapeutic approaches using controlled transdermal delivery to treat neurodegenerative diseases in aging populations	University of Geneva, Switzerland	Rs. 26,62,800	Department of Science and Technology (DST)
Artificial sensory systems for optimising palatability of paediatric pharmaceutical formulations	St. Petersburg ITMO University, Russia	Rs.25,27,000	DST and Russian Foundation for basic research

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

DST-FIST: Rs. 1.5 Crore

UGC CAS-I: Rs. 1.5 Crore

UGC CAS-II: Rs. 2, 62, 50, 000

AICTE MODROB: Rs. 30 lakhs

Total: Rs. 5, 92, 50,000

19. Research facility/centre with state, national or international recognition : NA

20. Special research laboratories sponsored by / created by industry or corporate bodies

Nano Drug Delivery and Drug Discovery Laboratory supported by J.B.Chemicals and Pharmaceuticals Ltd., Worli, Mumbai 400018

21. Publications:

- Number of papers published in peer reviewed journals (national / international): **372**
- Monographs: **23**
- Number of books, chapters, edited books: **21**

22. Details of patents and income generated

Patent filed/granted	
Title	Patent number
Pharmaceutical Compositions for Colloidal Drug Delivery	PCT/IN2011/000730
Bio adhesive barrier film and spontaneous plug forming teat dips	1998/MUM/2012
Nanocarriers for targeted delivery of active agents	2166/MUM/2012
Method of manufacturing concentrated silver Nano powder	2797/MUM/2014
Methods for preparation of water-soluble and water-insoluble derivatives of saccharides and alkali, alkaline earth, transition and nobel metals	2594/MUM/2014
Pharmaceutical composition for bioenhancement of active agents	1108/MUM/2012
Pharmaceutical composition for transdermal application	1218/MUM/2012
Pharmaceutical composition for combined immunization and	2266/MUM/2012

therapy against macrophage host related infections	
Non-invasive vaccine delivery system for immunization against brucellosis using green technology	2920/MUM/2013
Design Patent: Inhaler - Design No. - 261054	Certificate No: 37238
Point-of-care diagnostic test for rapid detection of brucellosis	3183/MUM/2013
Nanodrug delivery based on combination therapy for treating parasite infections	3567/MUM/2013
Highly porous dosage forms	887/MUM/2014
Novel lipid based carrier	2881/MUM/2015
Novel targeted lipid bioconjugates and delivery system thereof	2822/MUM/2015

23. Areas of consultancy and income generated Industry sponsored R & D projects:

Funding Agency	Amount (Rs.)
NeuroSci, Inc, Ohio, USA (2008-2013)	1,770,000/-
Phoenix Pharmaceuticals LLC, USA	8,958,000/-
Mahaan Proteins Ltd. India (2011-2012)	100,000/-
Pfizer Pharmaceuticals, USA (2011-2012)	250,000/-
Abbott Healthcare (2013-2014)	205,000/-
Zim Laboratories	2,400,000/-
Nippon Synthetic Chemicals Pvt. Ltd.	730,000/-
Cyril Healthcare Pvt. Ltd.	200,000/-
Uni Sankyo Pvt. Ltd.	3,600,000/-
Lubrizol Advanced Materials Pvt. Ltd.	300,000/-
Lotus Surgical Pvt. Ltd.	1,708,000/-
Nippon Synthetic Chemicals Pvt. Ltd.	730,000/-
Sanzyme Pvt. Ltd	1,800,000/-
Glenmark Pvt. Ltd., Mumbai	482,563/-

Omniactive Health Technologies	636,378
Alkem Pharmaceutical Pvt. Ltd	1,000,000/-
Sahajanand Medical Technologies Pvt. Ltd	1,700,000/-
Grand Challenges Explorations Grants Round 11, Bill & Melinda Gates Foundation	~ 6,000,000/-
Emami Ltd.	1,000,000/-
Quantimmune solutions Pvt. Ltd.	400,000/-
Perrigo API India India Pvt. Ltd.	250,000/-
ASG Biochem Pvt. Ltd.	100,000
FDC Ltd.	250,000/-
Bajaj Healthcare Ltd(private)	186,000/-
Scope Excipients Ltd	150,000/-
Mascot Universal	100,000/-
Evonik Industries Ltd	413,300/-
P T Pharmacon	156,000/-
Arihant Trading Co. Ltd	150,000/-
Bajaj Healthcare Ltd(private)	300,000/
VVF Ltd	379,000/-
Merck Ltd	1,200,000/-
M/s. Total Herb Solutions P. Ltd	50,000/-
Spring Bank Pharma, MA, USA	350,000/-
Total Income Generated	3,80,04,241/-

Consultancy:

Funding Agency	Amount (Rs.)
Phoenix Pharmaceuticals LLC, USA	2,460,000/-
Pfizer Pharmaceuticals, USA	750,000/-

Mahaan Proteins Ltd	50,000/-
Abbott Healthcare (2013-2014)	750,000/-
Emcure Pharmaceuticals Pvt Ltd	650,000/-
Zim Laboratories	167,000/-
M/S. Bajaj Health Care Pvt. Ltd.	3,300,000/-
CadilaPharma Pvt. Ltd., Ahmedabad, India	2,000,000/-
Sahajananad Medical Technologies Pvt. Ltd., Baroda, India	2,980,000/-
CavinKare Pvt. Ltd., Mumbai, India	500,000/-
Rubicon	300,000/-
Evonik Industries Ltd	210,000/-
Scope Excipients Ltd	50,000/-
Mascot Universal	50,000/-
P T Pharmacon	100,000/-
Bajaj Healthcare Ltd(private)	250,000/-
Arihant Trading Co. Ltd	50,000/-
VVF Ltd	150,000/-
Merck Ltd	350,000/-
Total Income Generated	15,11,7000/-

24. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

- Dr. G.U.Chaturbhuj: October 2013-September 2014 as UGC Raman Post-Doctoral Fellow, On Indo-US Obama Singh Knowledge Initiative 2012
- Dr. V.N.Telvekar: 2010-11, Post-Doctoral fellow, St. Johns University, USA

25. Faculty serving in National Committees

Faculty Name	Committee	Designation
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Prof. A.R. Juvekar	Pharmacy Council of India	Inspector
Prof. P.R. Vavia	Pharmacy Council of India	Inspector (for Inspection of Institutions)
Prof. P.R. Vavia	AICTE	Inspector (for Inspection of Institutions)
Prof. P.R. Vavia	DSIR	Expert Member (for inspection of industrial R & D facility)
Prof. V.B.Patravale	Association of Pharmaceutical Teachers of India – Women Forum	Convener
Prof. V.B.Patravale	Controlled Release Society Inc – Indian Chapter	Chairperson-Scientific Committee Vice-President
Prof. P.V. Devarajan	LIC for affiliation of Pharmacy Colleges, University of Mumbai	Chairman
Prof. P.V. Devarajan	Drug Information Association, India	Member Advisory Council
Prof. P.V. Devarajan	DBT –SBIRI project	Expert Committee Member
Prof. P.V. Devarajan	DST Women Scientist Scheme (WOS-A)	Member- Subject Expert Committee (SEC)-Chemical Sciences
Prof. P.V. Devarajan	Drug Information Association, India	Member Advisory Council

International Committees

Faculty Name	Committee	Designation
Prof. P.R. Vavia	Asian Oceanic Cyclodextrin League	Member, International Advisory board
Prof. P.R. Vavia	Royal Pharmaceutical Society of Great Britain	Member, (Hon. Membership)

Prof. P.V. Devarajan	Controlled Release Society (CRS), Inc, USA	Board Member
Prof. P.V. Devarajan	CRS- Young Scientist Mentor Protégé committee	Chair
Prof. P.V. Devarajan	Controlled Release Society, USA	Member Board of Scientific Advisors
Prof. P.V. Devarajan	Controlled Release Society, USA	Member Outstanding Research Paper Committee DDTR Journal
Prof. P.V. Devarajan	Controlled Release Society, USA	Cochair Outstanding Research Paper Committee DDTR Journal

Editorial Boards

Faculty Name	Committee	Designation
Prof. K.G. Akamanchi	Indian drugs	Member of Editorial Board
Prof. K.G. Akamanchi	Indian Journal of Pharmaceutical Sciences	Member of Editorial Board
Prof. V.B.Patravale	Journal of Nanoscience and nanotechnology	Associate editor
Prof. V.B.Patravale	International Journal of Pharma Bioscience and Technology	Editor
Prof. V.B.Patravale	Bombay Technologist, in-house Journal of Institute of Chemical Technology	Editor
Prof. V.B.Patravale	CRS Newsletter	Editor
Prof. P.V. Devarajan	Bionano Frontiers	Editorial Board Member
Prof. P.V. Devarajan	Indian Drugs	Editorial Board Member
Prof. P.V. Devarajan	Indian Journal of Pharmaceutical Sciences	Editorial Board Member

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs). Nil

27. Student projects

- Percentage of students who have done in-house projects including inter-departmental projects:
UG: 100%, Masters: 100%, PhD: 64.9%
- Percentage of students doing projects in collaboration with other universities industry / institute: **35.08%**

28. Awards / recognitions received at the national and international level by Faculty

Faculty	Award	Year
Prof. K. G. Akamanchi	UGC-Visiting Fellow - Sardar Patel University, Vallabh Vidyanagar, Gujarat.	2013
Prof. K. G. Akamanchi	Appointed as Independent Director on the Board of Aarti Drugs Ltd.	2013
Prof. P. D. Amin	Indian Women Scientist in Chemical Industry News, 2011	2011
Prof. P. D. Amin	Fellow of Maharashtra Academy of Science.	2014
Prof. G. U. Chaturbhuj	UGC Raman Fellowship- for Post-Doctoral Research from Northeastern University, Boston, USA.	2013
Prof. M. S. Degani	Felicitated by Indian Chemical Council as Woman Scientist in March 2012	2012
Prof. M. S. Degani	Fellow of Maharashtra Academy of Sciences, 2012	2012
Prof. P.V. Devarajan	AAiPS Distinguished Educator and Researcher Award	2011
Prof. P.V. Devarajan	Industrial Research Award for Women Scientists	2011
Prof. P.V. Devarajan	Professor C. J. Shishoo Award. Research in Pharmaceutical Sciences, conferred by the Association of Pharmaceutical Teachers of India, 2013	2013
Prof. P.D. Jain	Ramanujan Fellowship from DST, Govt. of India	2011
Prof. P.D. Jain	Young Associate of Maharashtra Academy of Sciences for the contribution in Engineering and Technology, 2012 DAE Young Scientist Research Award, Department of Atomic Energy, Govt. of India, 2012 BioCARE Research Award for Women Scientist,	2012

	DBT, 2013	
Prof. A. R. Juvekar	Awarded Milstein award 2014 from International Cytokine and Interferon Society (ICIS), Bethesda, USA	2014
Prof. V. B. Patravale	Fellow of Maharashtra Academy of Sciences award (2011)	2011
Prof. V. B. Patravale	BVDUPCP- Pharmacy Teacher of the year Award 2012	2012
Prof. V. B. Patravale	Grant Awardee – ‘Nanovaccine for Brucellosis using Green Technology’; Grand Challenges Explorations Grants Round 11, Bill & Melinda Gates Foundation, (2013)	2013
Prof. V. B. Patravale	Dr. P. D. Patil Best Pharmaceutical Scientist of the year Award – 2014	2014
Prof. V. B. Patravale	Association of Pharmaceutical Teachers of India (APTI), Maharashtra State (2014)	2014
Prof. V. B. Patravale	Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK)	2014
Prof. V. B. Patravale	Apex Committee’s Smt. ChandabenMohanbhai Patel Industrial Research Award for Women Scientists – 2013 (2015)	2013
Prof. V. N. Telvekar	The “Better Opportunities for Young Scientists in Chosen Areas of Science & Technology (BOYSCAST)” fellowship	2014
Prof. P. R. Vavia	VASVIK Award in the category of Biological Sciences & Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015	2014

Doctoral Students

1. Second prize for oral presentation in preclinical section for presentation entitled “Role of Carbohydrate based Ligands on the cytotoxicity and cell uptake of Doxorubicin nanoformulations”, Sandhya Pranatharthiharan, Mitesh D. Patel, Prof. Padma V.

- Devarajan at 6th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 21st -22nd April, 2013, Mumbai.
2. Second prize for poster presentation in preclinical section for presentation entitled “PES Lopinavir nanoparticles: A promising approach to target multiple HIV reservoirs”, Bhagyashree Dalvi, Derajram Benival and Prof. Padma V. Devarajan at 6th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 21st -22nd April, 2013, Mumbai.
 3. Second prize for poster presentation in preclinical section for presentation entitled “Genotoxicity and Mutagenicity evaluation of Buparvaquone Solid Lipid Nanoparticles”, Maheshkumar Soni, Shelkar Nilakash, Bhagat Sharad, Gaikwad Rajiv, Samad Abdul, Prof. Padma V. Devarajan, Vanage Geeta at 6th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 21st - 22nd April, 2013, Mumbai.
 4. Second prize for poster presentation in first International Conference, Disso India 2013 for poster entitled “Modified USP Dissolution Apparatus II for Dissolution Testing of Buccal Tablets of Rivastigmine Hydrogen Tartrate” Vilas Malode, Prof. Padma V. Devarajan at the Lalit, 3-4 May 2013, Mumbai.
 5. Second prize for poster - Chawla S.; Devarajan P.V. Nano diagnostic approach for blood group detection in 7th International Conference organized by South Asian Chapter of American College of Clinical Pharmacology on “Clinical Pharmacology-Translational Research: Patient to Public Health”, 17-20 April 2014, held at Nehru Centre, Worli, Mumbai.
 6. Consolation prize for poster - Sandhya Pranatharthi Haran; Padma V. Devarajan, ‘Carbohydrate anchored stealth doxorubicin nanoformulations with improved efficacy in fibrosarcoma mouse model’ in Indo-US Workshop on nanoengineering in medicine, Dec 17-19, 2014 at AIIMS, Delhi.
 7. Dr. R. S. Satoskar Award for second prize for poster in preclinical section - Prashant Mande, Sagar Bachhav, Padma V. Devarajan, ‘Curcumin ESA-SMEDDS – Bioenhanced response in CFA-induced arthritis’ 8th International Conference organized by South Asian Chapter of American College of Clinical Pharmacology on “Clinical Pharmacology-Translational Research: Patient to Public Health”, 24-25 April 2014, held at Nehru Centre, Worli, Mumbai.

8. S.S. Chawla, A.C. Gorakhshakar, K.Ghosh, P.V.Devarajan; Best international poster award for ‘Development of surface anchored silver nanoparticles: A Novel and easy blood detection system based on nanotechnology, Biomaterials International, Taiwan, June 2015.
9. Dr. R. S. Satoskar Award of second prize for poster in preclinical section for poster titled ‘Curcumin ESA-SMEDDS- Bioenhanced response in CFA-induced arthritis’ presented by Prashant Mande*, Sagar Bachhav, Padma V. Devarajan at 8th International Conference on “Clinical Pharmacology-Translational Research: Patient to Public Health” organized by South Asian Chapter of American College of Clinical Pharmacology, held at Nehru Centre, Worli, Mumbai, 24-25 April 2015.
10. Best International Poster Award for poster titled ‘Development of surface anchored silver nanoparticles: A Novel and easy blood detection system based on nanotechnology’ presented by S.S. Chawla*, A.C. Gorakhshakar, K. Ghosh, P.V. Devarajan at Biomaterials International organized by Chang Gung University, held at Chang Gung University, Taiwan, 1-5 June 2015
11. Ketan Mahajan, Preeti Wavikar, Nilesh Dhakar, Alok Shukla; Won 2nd Prize in BEST ABLE 2015 (Biotechnology Entrepreneurship Student Teams) sponsored by The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India and managed and administered by Association of Biotechnology Led Enterprises, ABLE – India, Bangalore, India, November 2015
12. Ketan Mahajan, Won 1st prize (member of winner team) in Novartis Biotechnology Leadership Camp (Novartis BioCamp 2015) organized by Novartis, India, July 2015
13. Nitin Jadhav, Nisha Yadav, Mrunal Patil, Mahendra Prajapati, Avinash Chaudhary; Won First prize in INDIA BIO 2015, organized by the Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka, Vision Group on Biotechnology, MM Activ Sci-Tech Communications (KITBT)- India, Bangalore, February 2015
14. Nitin Jadhav, Nisha Yadav, Mrunal Patil, Mahendra Prajapati, Avinash Chaudhary; Awarded the title of “Unique Idea” by Indian Institute of Technology, Gandhinagar, November 2014
15. Nitin Jadhav, Nisha Yadav, Mrunal Patil, Mahendra Prajapati, Avinash Chaudhary; Won 2nd prize in BEST ABLE 2014 (Biotechnology Entrepreneurship Student Teams) sponsored by The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India and managed and administered by Association of Biotechnology Led Enterprises, ABLE – India, Bangalore, India, October 2014

16. Ketan Mahajan, Selected as participant among (30 research students worldwide) for Merck Sereno Innovation Cup 2014 to present Novel Research Business Plan organised by Merck Sereno Inc., Darmstadt, Germany, July 2014
17. Ketan Patel, Mayank Patel, Jasmin Monpara, Subhash Ingle, Dhawal Chobisa; Won 3rd Prize in BEST ABLE 2013 (Biotechnology Entrepreneurship Student Teams) sponsored by The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India and managed and administered by Association of Biotechnology Led Enterprises, ABLE – India, Bangalore, India, November 2013
18. Sharad Darandale, Won 3rd Prize in Novartis Biotechnology Leadership Camp (Novartis BioCamp 2013) organized by Novartis, India, July 2015
19. Dishan Shan and Sharad Chormale, Won National Pharmacy Quiz Competition 64th Indian Pharmaceutical Congress, Chennai, December 2012
20. Sharad Darandale, Winner of Johnson and Johnson Innovation Cup, organised by Johnson and Johnson Healthcare Pvt. Ltd, Mumbai, India, 2013
21. Smita Pawar, Winner of Johnson and Johnson Innovation Cup, organised by Johnson and Johnson Healthcare Pvt. Ltd, Mumbai, India, 2013
22. Mayank Patel, Selected as ESONN CEFIPRA Fellow (European School on Nanosciences and Nanotechnologies), Grenoble, France, September 2015
23. Lalit Vora, Received Amgen Research Student Travel Award from AAPS National Biotechnology Conference, San Francisco, USA, June 2015
24. Mayank Patel, Awarded Newton-Bhabha PhD Placement Programme Fellowship by Ministry of Science and Technology, India and British Council, October 2015
25. Ketan Patel, Selected by BASF for attending BASF Pharma days - 2012 at Heidelberg, Germany, 2012
26. Atul Raut, Won Best Poster Award 66th Indian Pharmaceutical Congress, Hyderabad, January 2014
27. Preeti Wavikar, Best Oral Presentation Award in International Symposium on New Perspectives in Modern Biotechnology, Puducherry, India, 2015
28. Jamiluddin Fakhruddin, Won Best Poster Award 65th Indian Pharmaceutical Congress, Delhi, India, December 2013
29. Nitin Jadhav, Won Best Poster Award 64th Indian Pharmaceutical Congress, Chennai, India, December 2012
30. Ketan Patel, Won Best Oral Presentation Award, 64th Indian Pharmaceutical Congress, Chennai, India, December 2012

31. Ketan Patel, Won Best Oral Presentation Award, South Asian chapter of American College of Clinical Pharmacology (ACCP), Mumbai, India 2013
32. Best poster Award at the ICMR sponsored 'National conference on Nanotechnology in drug delivery research: Innovations, challenges and opportunities' for poster entitled "Generic Oral Aprepitant nanoformulation: A Patent Non-Infringing Approach" at NMIMS, Mumbai, India, October, 2015 (Bhise K.)
33. Best Poster Award at the "2nd International Conference on Nanotechnology Based Formulations- NanoPharmaceuticals" for poster entitled "Artemether-Lumefantrine loaded Nanostructured Lipid Carriers (NLC) for treatment of cerebral malaria" organized by Select Biosciences India Private Limited held at Hyderabad, India, September 2015 (Prabhu P.)
34. OMICS International Best young researcher award - 2015 for presenting speech entitled "Targeted micelles of curcumin: Strategy for enhanced brain uptake" in 4th International conference and exhibition on 'Neurology and Therapeutics' Rome, Italy, July 2015 (Desai P.)
35. Third Prize for oral Presentation in "Preclinical Category" for work on " Nanostructured Lipid Carriers (NLC) of Artemether-Lumefantrine combination for oral malaria therapy" at the Eighth International Annual Conference on "Translational Clinical Pharmacology Research in Drug Development" organised by South Asian Chapter of American College of Clinical Pharmacology held at Nehru Auditorium, Worli, Mumbai, India, April 2015 (Prabhu P.)
36. The Budding QbD Scientist Award - 2015 for the paper entitled, "QbD Based Development of Fenofibrate Nanosuspension: A Non-Infringing Approach" at the QbD in Pharma Development World Congress 2015, Chandigarh, India, April 2015 (Mirani A, Gite S.)
37. Ranbaxy Science Scholar Award - 2014 in the field of Pharmaceutical Sciences, Ranbaxy Science Foundation, India, March 2015 (Desai P.)
38. First prize for oral presentation and poster entitled, "Multifunctional nanocomposites of curcumin for neurodegenerative disorders" at Forteenth International Symposium on Advances In Technology And Business Potential of New Drug Delivery Systems, Mumbai, India, February 2015 (Desai P.)
39. Young Innovator in Bioprocessing Award (2nd Place) for research work entitled, "Bioenhanced ellagic acid solid solution: a systematic green approach" at Bioprocessing India 2014 conference, Mumbai, India, December 2014 (Desai P.)

40. Excellent poster award for topic entitled, “ Pharmaceutical Co-Crystal Of Atovaquone: A Systemic Approach Towards Solubility Enhancement” at 5th Indo-Japanese International Joint Symposium on Overcoming Intractable Infectious Diseases Prevalent in Asian Countries, Tokyo, Japan September 2014 (Desai P.)
41. Excellent poster award for topic entitled, “ Evaluation Of Punicalin And Punicalagin As GP 120-CD4 Binding Inhibitor: In Silico & In Vitro Screening” at 5th Indo-Japanese International Joint Symposium on Overcoming Intractable Infectious Diseases Prevalent in Asian Countries, Tokyo, Japan September 2014 (Mirani A.)
42. Excellent poster award for topic entitled, “Comparison of Phytopolyphenols as gp120-CD4 Binding Inhibitor: In Silico & In Vitro Screening” at 5th Indo-Japanese International Joint Symposium on Overcoming Intractable Infectious Diseases Prevalent in Asian Countries, Tokyo, Japan September 2014 (Gite S.)
43. First prize for poster entitled, “Green approach towards bioenhanced curcumin: process analytical technology (PAT) enabled scale up studies of curcumin solid solution using hot melt extrusion” at 1st International Conference on Industrial Pharmacy (ICIP) 2014, Kuantan, Malaysia, August 2014 (Desai P.)
44. Selected in top 6 research students amongst the entries from all over the world for Merck Serono Innovation Cup 2014, Darmstadt, Germany, July 2014 (Desai P.)
45. Agrawal A. has received the prestigious “Prime Minister’s Fellowship” for doctoral Research. This is a joint initiative of CII, Science & Engineering Research Board (SERB) and Sahajanand Medical Technologies Pvt. Ltd. as an Industry partner.
46. First prize for poster entitled, “SANS investigation of a micellar drug delivery system formed by a novel antioxidant- lipid bioconjugate” at Conference on Neutron Scattering 2014", Pune, India, February 2014 (Desai P.)
47. First prize for poster entitled, “In vivo investigation of anticancer activity and treatment associated toxicity of tamoxifen-loaded cationic lipomer” at 65th Indian Pharmaceutical Congress, Delhi, India, December 2013 (Desai P.)
48. Veneto Nanotech Prize (Winner of the second edition of the Cadini Prize) 2013 for the poster entitled "Influence of Newly Synthesized Mono-Guanidine Heterolipid based Cationic Nanocarriers in Treatment of Melanoma Tumor in C57BL/6 mice" at the NanotechItaly 2013, Italy, November 2013. (Prabhu R).
49. Selected amongst top 20 teams across India for BEST ABLE 2013 (Biotechnology Entrepreneurship Student Teams) sponsored by The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India and managed and administered

- by Association of Biotechnology Led Enterprises, ABLE – India, Bangalore, India, October 2012 (Desai P., Vyas S., Jain S., Bhuptani R., Mirani A.)
50. Best Poster Award for poster entitled, “Super Critical extraction method optimization of Seabuckthorn (SBT) berry oil B.O: Exploiting its role in anti-ageing” at The Omics group of conference, Hyderabad, India, September 2013 (Mirani A).
51. First prize for poster (Drug Delivery System Section) entitled, “Impact of drug loading on the anti Parkinsonism effects of lipid formulation of curcumin” at The South Asian Chapter of American College of Clinical Pharmacology: 6th International Conference on Innovation in 21st Century: Clinical Pharmacology in Current and Future environment, Mumbai, India, April 2013 (Fernandes C.)
52. Second prize for poster (Drug Delivery System Section- shared) entitled, “Bio-enhanced Atovaquone: Comparison of solid dispersion and nanosuspension” at The South Asian Chapter of American College of Clinical Pharmacology: 6th International Conference on Innovation in 21st Century: Clinical Pharmacology in Current and Future environment, Mumbai, India, April 2013 (Mirani A.)
53. Second prize for poster (Drug Delivery System Section- shared) entitled, “Solid lipid nanoparticles of Arteether/Ellagic acid: A novel combination therapy for treatment of malaria” at The South Asian Chapter of American College of Clinical Pharmacology: 6th International Conference on Innovation in 21st Century: Clinical Pharmacology in Current and Future environment, Mumbai, India, April 2013 (Kadwadkar N.)
54. Second prize for poster (Preclinical Section- shared) entitled, “Selective Uptake of Nanostructured Lipid Carriers by Malaria Infected Red Blood Cells” at The South Asian Chapter of American College of Clinical Pharmacology: 6th International Conference on Innovation in 21st Century: Clinical Pharmacology in Current and Future environment, Mumbai, India, April 2013 (Jain S.)
55. Prize for poster entitled, “Curcumin-Celecoxib Dual Drug Loaded Ph-Sensitive Nanoparticulate Combination Therapy: A Novel Approach For The Treatment Of Inflammatory Bowel Disease” at Thirteenth International Symposium on Advances In Technology And Business Potential of New Drug Delivery Systems, Mumbai, India, January 2013 (Dalapathi G.)
56. First prize for poster entitled, “Discrepancy in therapeutic efficacy of nanoformulation against different breast cancer cell lines” at International Symposium On Drug Discovery For Infectious Diseases And Cancer, Mumbai, India, January 2013 (Shete H.)

57. Selected amongst top 20 teams across India for BEST ABLE 2013 (Biotechnology Entrepreneurship Student Teams) sponsored by The Department of Biotechnology (DBT), Ministry of Science and Technology, Government of India and managed and administered by Association of Biotechnology Led Enterprises, ABLE – India, Bangalore, India, October 2012 (Desai P., Fernandes C., Vyas S.)
58. First prize for poster entitled, “Bioenhancement of Curcumin Using Hot Melt Extrusion Technology: Formulation Development, In Vitro Characterization And In Vivo Pharmacokinetic Studies” and thus opportunity for podium presentation at Drug Delivery India 2012 - Innovations In Pharmaceutical & Manufacturing Sciences, Hyderabad, India, February 2012 (Desai P.)
59. First prize for poster entitled “Development of mathematical model to predict release of poorly water soluble drug from tamarind seed polysaccharide matrices” at Twelfth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, February 2012 (Patale R., Desai P.)
60. Award for poster entitled “Engineering Nanostructured Lipid Carriers Of Genistein: Statistical Optimization” at Twelfth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, February 2012(Pai A., Swami M.)
61. Award for poster entitled “New Uses For Old Drugs: Clotrimazole Oral Nanoemulsion For Malaria” at Twelfth International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems, Mumbai, India, February 2012 (Borhade V., Shete H.)
62. First prize for poster entitled “Freeze Drying : Exploring Potential In Development Of Orodispersible Tablets Of Sumatriptan Succinate” at 63rd Indian Pharmaceutical Congress, Bangaluru, India, December 2011 (Pandharipande P., Dalapathi G., Desai P.)
63. Award for poster entitled, “Atovaquone Nanosuspension For Intravenous Delivery: Toxicity Assessment, Pharmacokinetics, Tissuedistribution And In Vivo Antimalarial Efficacy Studies” at INDO-US Joint Symposium on Nanomedicine: Prospects and Challenges, Mumbai, India, November 2011 (Borhade V. Shete H.)
64. Gandhian Young Technological Innovation Award/Appreciation 2015' based on work related to the development of 'Rapid Non-invasive diagnostics kits for diabetic patients', 2015; Research student awarded at Rashtrapati Bhavan by Honourable Dr. Raghunath Mashelkar on 7th March, 2015.

65. Received 3rd Prize for 7th edition of BEST-India (Biotechnology Entrepreneurship Student Teams) based on work related to the development of “Pyrogen Detection Kit” on 3rd November, 2015.
66. Awarded Best oral presentation award in preclinical section for presentation entitled “*Couroupita guianensis* extract dampens postprandial glucose excursion in diabetic rats by inhibiting α -glucosidase and α -amylase enzyme activity” at 6th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 21st - 22nd April 2013, Mumbai.
67. Awarded Best poster award in preclinical section for presentation entitled “Antiepileptic efficacy of Luteolin: Assessment in animal models of Epilepsy” at 6th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 21st - 22nd April 2013, Mumbai.
68. Awarded Best poster award in preclinical section for presentation entitled “Evaluation of lipase inhibitory activity of various Orlistat formulations and excipients” at 65th Indian Pharmaceutical congress, 20-22nd December 2013, Delhi.
69. Bagged second prize for oral presentation award in preclinical section for presentation entitled “Bioactive fraction of *Saraca indica* prevents cataract development and progression in Streptozotocin-induced diabetic rats” at 7th International annual conference South Asian Chapter of American College of Clinical Pharmacology, 19th -20th April 2014, Mumbai.
70. Awarded best oral presentation award for presentation entitled “Antiepileptogenic and anti oxidant effect of Terpinen-4-ol in pentylenetetrazole induced kindling model” at 8th International Annual Conference South Asian Chapter of American College of Clinical Pharmacology, 22nd April – 25th April 2015, Mumbai.

29. Seminars/ Conferences/Workshops organized and the source of funding (national International) with details of outstanding participants, if any.

Conference/Symposia/ Workshop	Title	State/ National/ International	Duration	Source of Funding
Conference	Indo-US Symposium on Nanomedicine: Prospects and Challenges	Institute of Chemical Technology, Mumbai	2011, Two days	IUSSTF

University of Pune sponsored workshop	Modern Analytical tools in Quality Control of Phytopharmaceuticals	National	July, 2013	University of Pune
International workshop	Research writing skills "Publish or Perish"	International	12-13th Nov, 2013	
Seminar	UKIERI Seminar - Green Processing Technologies for Poorly Soluble Drugs	National	9th January 2014	UKIERI
Lecture	Multi Colour Imaging in Confocal Microscopy' by Dr. Amit Kumar Bhattacharya	National	February 2014	Industry
Seminar	'Careers in Clinical Research' by Dr. Shekhar Dawkhar	National	February 2014.	
Workshop	Honing Mentoring Skills -- A Holistic Approach, Sessions I and II, Trainer: Mrs. Lakshmi Raju	National	May 5-9 and July 3-8, 2014	TEQIP
Workshop	Stress Management workshop, Trainer: Mrs. Lakshmi Raju	National	June 18-24, 2014 (3 sessions)	TEQIP
Workshop	Writing and presentation skills for the PG students of DPST	National	June-July, 2014 (10 sessions)	TEQIP
Seminar	'Scientific Writing Skills' by Achievers League	Bombay Technologist ,Institute of Chemical Technology, Mumbai	September , 2014	Industry
Lecture	Merck Excipients and their Applications in Pharmaceuticals' by Merck Ltd.,	Institute of Chemical Technology, Mumbai	December 2014	Industry
Conference	14 th International Symposium on Advances in Technology and Business Potential of	National	February 2015	

	New Drug Delivery Systems, Controlled Release Society			
Seminar and Workshop	Organized Seminar and Workshop on 'Recent Strategies in CNS Drug Development' on under the Technical Education Quality Improvement Programme organized by Department of Pharmaceutical Science & Technology, Institute of Chemical Technology.	ICT	31 st October and 1 st November, 2012	
ADMA Regional Symposium	"Concept of GLP and importance of analysis of Ayurvedic raw materials and finished products"	Mumbai	April 2012	
Conference	International Symposium on Drug Discovery for Infectious Diseases and Cancer	ICT, Mumbai	January 2013	CSIR, UGC and Industry
Disso India2013 Preconference workshop	Pharmaceutical Dissolution Technology: A Review	International	2013, one day	SPDS
Conference	Regulatory Roadmap For Pharmaceuticals In Global Market	National	2012, One day	TEQIP
Seminar cum workshop	Recent Strategies In CNS Drug Development	National	2012, two days	TEQIP
Seminar cum workshop	Advanced Scientific Writing Workshop, Winter-2013	National	2012, half day	UGC-CCAS

Workshop	Bayer (Under Scholarship Program and Guest Lecture Sessions)) 21 st Dec. 2012.	
Conference	Seminar cum-workshop on "Recent Strategies in CNS drug development at Institute of Chemical Technology, Mumbai	National	31 st October-1 st November 2012	
Lecture	Lecture series by Prof. Krishnapriya Mohanraj on, "chemistry a new understanding" For M.Tech students of Department of Pharmaceutical Sciences and Technology under the aegis of TEQIP program,	Institute of Chemical Technology, Mumbai	Jan to March 2013	TEQIP
Workshop	Workshop on "preparing for aptitude tests-Finishing School" for masters and Ph.D. students of Department of Pharmaceutical Sciences and Technology under the aegis of TEQIP program	Institute of Chemical Technology, Mumbai	11-14 th Feb 2013	TEQIP
Seminar by Prof. A. B. Pandit	Seminar by Prof. A. B. Pandit on "Scientific writing"	Bombay Technologist, ICT, Mumbai	5 th December 2013	TA, ICT
TEQIP National Seminar	TEQIP National Seminar On "Regulatory	Institute of Chemical	29 th November	TEQIP

	Roadmap Pharmaceuticals Global Markets"	for in	Technology, Mumbai	2012.	
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30. Code of ethics for research followed by the departments:

Institute website has code of ethics which is followed by all the departments.

31. Student profile programme-wise

Name of the Programme	Applications received	Selected		Pass Percentage					
		Male	Female	Percentage of Passing	Male	Female	Fail	ATKT	Total Pass
B. Pharm (2011-2012)	241	10	18						
2011-2012				86.21	2 (fail)	2 (ATKT)	2	2	25
2012-2013				93.10	1	1	2	-	27
2013-2014				100.00	-	-	-	-	29
2014-2015				100.00	-	-	-	-	29
B. Pharm (2012-2013)	296	05	19						
2012-2013				92.59	1 (fail)	1(ATKT)	1	1	25
2013-2014				96.00	1 (fail)	-	-	1	24
2014-2015				100.00	-	-	-	-	24
B. Pharm	165	06	21						

(2013-2014)									
2013-2014				96.30	-	1 (AT KT)	0	1	26
2014-2015				92.86	1 (fail)	1 (AT KT)	1	1	26
B. Pharm (2014-2015)	Admission through DTE	10	18						
2014-2015				85.71	3 (AT KT)	1 (AT KT)	0	04	24
B. Pharm (2015-2016)	Admission through DTE	11	19						
B. Tech Pharma (2011-2012)	584	10	08						
2011-2012					1 (fail)	1 (AT KT)	1	1	17
2012-2013					-	-	-	-	18
2013-2014					-	1 (fail)	1	-	18
2014-2015					1 (AT KT)	-	-	1	17
B. Tech Pharma (2012-2013)	745	13	05						
2012-2013					1(A TK T)	-	-	1	17
2013-2014					1(A	-	1	1	18

					TK T) 1(fa il)				
2014-2015					1(A TK T) 1(fa il)	-	1	1	18
B. Tech Pharma (2013-2014)	615	07	11						
2013-2014					1 (fail) 2 (AT KT)	-	1	2	15
2014-2015					-	-	-	-	18
B. Tech Pharma (2014-2015)	Admission through DTE	11	06						
2014-2015					1 (fail) 1 (AT KT)	1 (fail) 1 (AT KT)	2	2	13
B. Tech Pharma (2015-2016)	Admission through DTE	14	05						
M. Pharm (2011-2012)	380	10	07						
2011-2012				100.00	-	-	-	-	08

(MNP)									
2011-2012 (Pharm. Chem)				75.00	2 (AT KT)	-	-	2	06
2011-2012 (Pharmaceuti cs)				100.00	-	-	-	-	20
M. Pharm (2012-2013)	222	10	08						
2012-2013 (MNP)				100.00	-	-	-	-	14
2012-2013 (Pharm. Chem)				93.75	1 (AT KT)	-	-	1	15
2012-2013 (Pharmaceuti cs)				100.00	-	-	-	-	24
M. Pharm (2013-2014)	201	09	07						
2013-2014 (MNP)				100.00	-	-	-	-	19
2013-2014 (Pharm. Chem)				100.00	-	-	-	-	06
2013-2014 (Pharmaceuti cs)				100.00	-	-	-	-	18
M. Pharm (2014-2015)	206	08	09						
2014-2015 (MNP)				77.78	2 (AT KT)	-	-	2	07
2014-2015 (Pharm.				100.00	-	-	-	-	07

Chem)									
2014-2015 (Pharmaceuti cs)				100.00	-	-	-	-	12
M. Pharm (2015-2016)	196	12	06						
M. Tech Pharma (2011-2012)	13	1	-						
2011-2012				100.00	-	-	-	-	01
M. Tech Pharma (2012-2013)	10	4	-						
2012-2013				60.00	2 (AT KT)	-	-	2	3
M. Tech Pharma (2013-2014)	14	3	1						
2013-2014				71.43		1 (fail) 1 (AT KT)	1	1	05
M. Tech Pharma (2014-2015)	21	1	3						
2014-2015				100.00	-	-	-	-	04
M. Tech Pharma (2015-2016)	30	2	2						
Ph. D. (Tech.)	320	19	08						

(2011-2012)									
Ph. D. (Tech.) (2012-2013)	209	17	12						
Ph. D. (Tech.) (2013-2014)	134	22	11						
Ph. D. (Tech.) (2014-2015)	179	18	12						

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
Master in Pharmacy				
2011-12				
17	11.76	41.18	47.06	-
2012-13				
18	5.55	66.66	27.77	-
2013-14				
17	17.64	47.06	35.29	-
2014-15				
17	0.0	52.93	47.06	
M. Tech Pharma				
2011-12				

1	0.0	100.0	-	-
2012-13				
4	0.0	100.0		-
2013-14				
4	0.0	100.0		-
2014-15				
4	0.0	100.0	-	-
PhD Tech				
2011-2012				
31	50	100	0	0
2012-13		33.33	87.87	9
2013-2014		16.67	66.67	16.6
24				
14-15		12.5	99.37	4.166
PhD tech Inegrated				
2011-2012				
1	100	0	0	0
2012-13		NA	NA	NA
2013-14		100	0	0

14-15	NA	NA	NA	NA

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Name of the examination	Number of students who have cleared the exam
GPAT	36
GATE	4

34. Student progression

Student progression	Percentage against enrolled		
	Academic year	Number	%
UG to PG	2011-2012	28/53	52.83
	2012-2013	17/33	51.51
	2013-2014	29/41	70.73
	2014-2015	26/52	50
PG to M.Phil.	2011-2012	-	-
	2012-2013	-	-
	2013-2014	-	-
	2014-2015	-	-
PG to Ph.D.	2011-2012	13/33	39.39
	2012-2013	5/19	26.31
	2013-2014	2/23	8.69
	2014-2015	0/21	0
Ph.D. to Post-Doctoral	2011-2012	0/21	0
	2012-2013	0/14	0
	2013-2014	2/21	9.52
	2014-2015	0/6	0
Employed Campus selection Other than campus recruitment	2011-2012	15/53	28.30
	2012-2013	13/33	39.39
	2013-2014	6/41	14.63
	2014-2015	10/52	19.23
Entrepreneurs	2011-2012	2/53	0.037
	2012-2013	0/33	0
	2013-2014	3/41	7.32
	2014-2015	0/52	0

35. Diversity of staff

Percent of Faculty	Bachelors	Masters	PhD
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who are graduates			
Of the same University	85%	100%	92%
From other university within the state	15%	-	8%
From universities from other states	-	-	-
Universities outside the country	-	-	-

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: 1

37. Present details of departmental infrastructural facilities with regard to

- a) Library: **Common Library for the Institute**
- b) Internet facilities for staff and students: **Available on campus**
- c) Total number of class rooms: **6 special lecture rooms**
- d) Class rooms with ICT facility: **all**
- e) Students' laboratories: **6**
- f) Research laboratories: **16**

38. Number of doctoral students

- c) from the host institution/university: **46**
- d) from other institutions/universities: **94**

39. Number of post graduate students getting financial assistance from the university.
11 Masters's students under TEQIP

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. NA

41. Does the department obtain feedback from

- i) faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **Yes. Teaching methodology is revised and**

upgraded based on the feedback. Curriculum revision is also based on feedback

- ii) students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback? **Yes. Faculty counselled if required. Curriculum revised if required.**
- iii) alumni and employers on the programmes offered and how does the department utilize the feedback? **Yes. Changes in syllabus and teaching methods.**

42. List the distinguished alumni of the department

- Dr. John Kapoor
- Dr. A.V.Rama Rao
- Dr. Shirish Modi
- Dr. K. Anji Reddy
- Prof. M.R.Baichwal
- Dr. R.P.Iyer
- Dr. Dhiren Thakker
- Nitin Deshmukh

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts. Academic Year 2011-2012

Sr.	Date	Fellowship	Distinguished Speaker/Affiliation	Title of Lecture
1	October 1, 2011	Foundation day alkyl amines – uict foundation day speaker endowment lecture	Dr. Sanyog Jain, Associate Professor, Centre for Pharmaceutical Nanotechnology, Dept. of Pharm-[aceutics,National Institute of Ph-armaceutical Education and Research (NIPER), SAS Nagar (Mohali) , Punjab-160062	Design, Synthesis and Biological Evaluation of Novel Multifunctional Carbon Nanotubes Based “Smart” Drug Delivery Platform
2	March 17, 2012	Themis chemicals ict diamond jubilee distinguished fellow in pharmaceutical science – lecture	Professor Dr. P. S. Ramani, Senior Consultant Neurospinal Surgeon, Lilavati Hospital & Research Centre, Mumbai. INDIA	From Mixture to Mutation - The March of Medicine
3	April 27, 2012	Professor S. K. Pradhan endowment lectures	Dr. Susheel Durani, Professor, Department of Chemistry IIT Bombay,	Chemical Interactions and Biomolecular

			Powai, Mumbai – 400076	Ontogeny: The Puzzles of Stereochemistry and Symmetry in Protein Structure
4	April 27, 2012	Professor S. K. Pradhan endowment lectures	Professor Goverdhan Mehta, FNA, FRS National Research Professor Lilly Grantee and Jubilant - Bhartia Chair, School of Chemistry, University of Hyderabad, Hyderabad 500046	Lecture 1: Celebrating Chemistry for a Better World: Lessons and Inspiration from Organic synthesis Lecture 2: Harnessing Synergy Between Natural Products, Organic Synthesis and Drug Discovery for Human Wellbeing
5	March 29, 2012	Professor (Mrs) M.R. Baichwal distinguished fellow in pharmaceutical sciences” lecture,	Dr. Shobhona Sharma Professor, Department of Biological Sciences, TIFR, Mumbai	Malaria Infected Red Cells: Can We Target Them
6	March 29, 2012	The Cipla distinguished fellow in pharmaceutical science” lecture,	Dr. Vijay Walame Consulting Homoeopath Lokmanya Hospital, Chinchwad, Pune	Homeopathy: An Emerging Pharmaceutical Science
7	30th April 2012	Professor V. M. Kulkarni endowment lecture,	Prof (Dr). Kanjaksha Ghosh Director, National Institute of Immunohaematology, Mumbai	Pharmacotherapy of Sickle Cell Anaemia: Why Indian Pharmaceutical Industry is Silent
8	May 11, 2012	The Professor B. D. Tilak visiting fellowship lecture,	Professor P. Thyagarajan Pro - Chancellor (Research), Sri Ramachandra University, Chennai	Herbal Drugs as Block Busters: The Way Forward

Academic Year 2012-2013

Sl. No.	Date Lecture	Fellowship	Distinguished Speaker Affiliation	Title of Lecture
1.	11/05/2012	Professor B. D. Tilak Endowment Lecture	Dr. S.P. Thyagarajan Pro-Chancellor (Research)Professor of Eminence and Dean (Research) Sri	Herbal Drugs as Block Busters: The Way Forward

			Ramachandra University, Chennai	
2.	27/04/2012	Professor S.F. Pradhan Endowment Lecture	Dr. Susheel Durani Department of Chemistry Indian Institute of Technology Bombay, Powai, Mumbai	Chemical Interactions and Biomolecular Ontogeny: The Puzzles of Stereochemistry and Symmetry in Protein Structure
3.	15/04/2013	Professor S.F. Pradhan Endowment Lecture	Dr. Krishna N. Ganesh Prof. & Director India Institute of Science Education and Research (IISER)	Lecture 1: Making Drugs out of Nucleic Acids Lecture 2: Cationic Peptides and Peptide Nucleic Acids as Cell Penetrating Agents
4.	18/04/2013	Pharma-UGC CAS Visiting Fellowship Lecture	Prof. Anant Paradkar Director of the Centre for Pharmaceutical Engineering Science, University of Bradford UK	Cocrystals and Polymorphs :innovation in technologies
5.	04/01/2013	Dept. of Sci. Tech.	Dr. B. S. Shankarnarayana Rao Professor, Dept of Neurophysiology of NIMHANS, Bangalore	Ever changing brain: Neural Plasticity and Recovery of Functions in Neurological and Psychiatric disorders
6.	22/04/2013	Themis Chemicals UICT Diamond Jubilee	Dr. Kuppuswamy Nagarajan Corporate Advisor, Hikal R & D Centre	New drug development; Indian achievements thus far
7.	17/03/2012	Themis Chemicals UICT Diamond Jubilee	Dr. P.S. Ramani Senior consultant Neuro & Spinal Surgeon to: I. Lilavati Hospital & Research Centre II. Shushrusha Citizen Co-op Hospital	From Mixture to Mutation
8.	22/04/2013	Professor V.J. Kulkarni Endowment Lecture	Dr. Vilas Dhanukar Vice-President, Dr. Reddy's Laboratories Ltd	Process Chemistry R&D in generic and NCE development

9.	30/04/2012	Professor V.J. Kulkarni Endowment Lecture	Dr. Kanjaksha Ghosh Director, National Institute of Immunohaematology (ICMR), Mumbai	Pharmacotherapy of sickle cell anaemia: why Indian pharmaceutical industry is silent
10.	10/04/2013	CIPLA Endowment Lecture	Dr. M.G.R. Rajan Head, Radiation Medicine Centre, Biomedical group, Bhabha Atomic Research Center Professor	Positron Emitting Radio- pharmaceuticals
11.	29/03/2012	CIPLA Endowment Lecture	Dr. Vijay Walame Consulting Homeopat Lokmanya Hospital, Chichwad, Pune	Homoeopathy: An emerging pharmaceutical science
12.	29/01/2013	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Pankaj B. Desai Professor of Pharmacokinetics and Biopharmaceutics Director, Drug Development Graduate ProgrammeThe James L.Winkle College of PharmacyUniversity of Cincinnati. Ohio, USA	Preclinical and Clinical Investigations of the Pharmacokinetic Interactions of Anticancer Drugs
13.	30/04/2012	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Rajiv Sarin Director, ACTREC, Mumbai	Genetics of Cancer Predisposition and Cancer Pharmacology
14.	29/03/2012	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Shobhona Sharma Professor, Dept of Biological Sciences, Tata Institute of Fundamental Research Mumbai	Malaria infected red cells: can we target them?
15.	22/12/2012	Dr. (Mrs.) M.R. Baichwal Endowment	Dr. Lohit Tutupalli Director of Pharmacy and Chairman ,Pharmacy &	Role of Pharmacy in Psychiatry

		Lecture	Therapeutics Committee San Joaquin County Mental Hospital and Health Services, Stockton, CA.	
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Academic Year 2013-14

Sr. No	Date of Lecture	Fellowship	Distinguished speaker/Affiliation	Title of Lecture
1	05/03/2014	Dr. R.S Baichwal Seminar	Professor Dhiren R Thakker Ferguson distinguished professor and associate dean for Entrepreneurial Development and Global Engagement, UNC Eschelmann School of Pharmacy, UNC, USA	Creation of Intellectual Property and Entrepreneurism: An Integral Part of Academic Pursuit in 21st Century
2	05/03/2014	Dr. R.S Baichwal Seminar	Sundeep Dugar, PhD President/CEO/Founder Sphaera Pharma, Singapore	Academy as an engine of Innovation: From the perspective of a Biotech CEO
3	05/03/2014	Dr. R.S Baichwal Seminar	Kasim Mookhtiar, PhD Chief Scientific Officer and EVP, Drug Discovery, Advinus Therapeutics Ltd, India	Intellectual Property Creation in Indian Technology Intensive institutions: Been there-done it or new horizons?
4	28/03/2014	Dep. of Sci. & Tech.	Professor Dr. Ganesh Thakur Northeastern University, Boston, USA	Tuning Endocannabinoid System for Therapeutic gain
5	11/02/2014	Themis Chemicals visiting fellowship	Dr. Abhay Harsulkar Professor and Head, Pharmaceutical Biotechnology, Poona College of Pharmacy, BVU, Pune	Nutrigenomics or nutrient-gene interaction with reference to disease pathologies.
6	28/01/2014	Professor S.K. Pradhan Endowment Lecture	Dr. G. Mugesh Professor, Department of Inorganic & Physical Chemistry, Indian Institute of Science	1. Synthesis and Biological activity of reduced graphene oxide nanosheets 2. Antioxidant nanoxymes
7	23/10/2013	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Amit Misra Associate Professor, Principal Scientist and In-charge; Pharmaceuticals Division CSIR, Lucknow	Inhalable particles targeting drugs affecting host responses to tuberculosis
8	10/09/	Cipla	Theresa M. Allen, Professor	Development of liposomal

	2013	distinguished visiting fellowship	of Pharmacology and Adjunct Professor of Oncology, University of Alberta	nanoparticles for anticancer applications
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Sr. No	Date of Lecture	Fellowship	Distinguished speaker/Affiliation	Title of Lecture
1	July 24, 2014	“The Cipla Distinguished Fellow In Pharmaceutical Science” Lecture 2014	Sundeep Dugar President/CEO/ Founder	Multi Drug Resistant Tuberculosis
2	November 28, 2014	Themis Medicare UICT Diamond Jubilee Distinguished Fellow in Pharmaceutical Science	Professor Donald Abraham Alfred and Francis Burger Emeritus Professor of Medicinal Chemistry and Biological Chemistry, and Emeritus Director of the Institute for Structural Biology and Drug Discovery at Virginia Commonwealth University, USA	Structural Biology and Drug Discovery: Tackling an Impossible Disease
3	Feb 4, 2015	(UGC CAS) Under the Aegis of TEQIP Industry-Institute Interaction	Mr. Bidhan Dasgupta, Senior Area Sales Manager, BD Biosciences, India.	Basics and application of Flow cytometry in pharmaceutical research
4	Feb 4, 2015	(UGC CAS) Under the Aegis of TEQIP Industry-Institute Interaction	Mr. Mahendra B Chaudhari, General Manager, Shimadzu (Asia Pacific) Pvt Ltd, Singapore	Recent Advances in Material Characterization Techniques

5	February 23, 2015	Prof. M. R. Baichwal endowment lecture	Professor Bhupinder Singh Bhoop M.Pharm, Ph.D., D St Chairman, University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh.	QBD-Oriented Development of Lipid- Based Nanostructured Systems with Improved Biopharmaceutical Attributes
6	February 23, 2015	Professor S. K. Pradhan Endowment Lectures	Dr. Jyoti Chattopadhyaya, Professor of Bioorganic Chemistry, Chair of Chemical Biology Program, Institute of Cell & Molecular Biology, Uppsala University Biomedical Centre, Sweden,	Intramolecular forces that self-organize DNA and RNA- Solo vis-à-vis Tango.
				Design and Targeting of siRNA - Delivery, Stability versus off – target effect : the prowess of Chemical concerto
7	March 27, 2015	Prof. M. R. Baichwal Endowment Lecture	Dr A. H. Bandivdekar Senior Deputy Director (Scientist F) Head, Department of Biochemistry and Virology, National Institute for Research in Reproductive Health (ICMR), Mumbai	Immunological Approaches for Male Fertility Control : Synthetic Peptide of 8okda HSA
8	March 27, 2015	Prof. M. R. Baichwal Endowment Lecture	Dr. N. H. Balasinor Ph.D.Scientist "E" Head, Neuroendocrinology Division National Institute for Research in Reproductive Health (ICMR), Mumbai	Laser Confocal Microscopy In Biomedical Research

9	April 7, 2015	Prof. V. M. Kulkarni Endowment Lectures	Prof. M.R.Yadav Head Pharmacy Department Faculty of Technology and Engineering .The M.S. University of Baroda, Vadodara.	Perils and Pleasures of a Medicinal Chemist
10	April 7, 2015	Prof. V. M. Kulkarni Endowment Lectures	Dr. Sudipta Maiti Professor, Department of Chemical Sciences, Tata Institute of Fundamental Research, Mumbai, India	Looking for the Achilles' heels of the Alzheimer's Amyloid beta peptide
11	April 29, 2015	UGC-CAS II	Dr. Bansilal Honorary Adjunct Professor Department of Pharmaceutical Sciences & Technology, Institute of Chemical Technology	Echinocandins as Antifungals WHY ARE THEY SPECIAL- [PART-1]
12	April 30, 2015	UGC-CAS II	Dr. Bansilal Honorary Adjunct Professor Department of Pharmaceutical Sciences & Technology, Institute of Chemical Technology	Echinocandins as Antifungals WHY ARE THEY SPECIAL- [PART-2]

44. List the teaching methods adopted by the faculty for different programmes.

Blackboard teaching

LCD & Power Point presentations

Demonstrations through videos; on site demonstrations

Presentations by students

Application oriented assignments

Handouts followed by discussions

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

Programme objectives are met by:

- Advanced teaching methodologies are used to ensure effective communication and good understanding
- Students are trained in the class for analytical and independent thinking
- Innovation is highly encouraged
- Learning outcomes are monitored by:
- Quizzes, MCQs, assignments as continuous evaluation, mid semester exam and end semester exams
- Discussion on student performance and strategies to improve quality in faculty room meetings within department
- Student feedback and feedback from alumni and from industry a major stakeholder is also given due importance
- Participation of students and winning awards in intra and inter collegiate co-curricular events and in intra and inter collegiate technical events is evidence of good performance
- Successful and high placement % with good starting salaries
- Admission of students to other institutes of high excellence

46. Highlight the participation of students and faculty in extension activities.

Seven faculty members have delivered lectures at other institutes, conferences, seminars etc. Total number of lectures for past 4 years is 102.

One of the faculty members is associated with Shri Satya Sai Seva Organization which deals with value based education for children from age group 6 years to 16 years along with other activities such as organizing yoga camps, health camps, blood donation, orphanage visits etc. One of the faculty member is a member of Suvarna Tarunanchi Sanghatana which works in the areas of career guidance in schools and colleges, gram swacchata abhiyan (Cleanliness drive) and organizing sports and cultural events.

Students visit NGO's and work in slums, old age homes, hospitals like Tata Memorial Cancer Hospital as a part of community service. The responsibilities range from preparing innovative games, story play cards, library management, data management and distribution of food, clothes to the needy. They have also participated in initiatives like

joy of giving and Swaccha Bharat Abhiyan.

47. Give details of “beyond syllabus scholarly activities” of the department.

Seminars, Projects, Industrial Visits and Industrial Training

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

Course	Accreditation body	Period
B.Pharm	NBA	2008-2013 (In process for 2014 onwards)
B.Tech	NBA	2008-2013 (In process for 2014 onwards)
M.Pharm	NBA	2013-2016
M.Tech (Pharma)	NBA	2013-2016

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

- Creation of intellectual property by novel inventions
- Development of innovative drug delivery systems including nanotechnology based formulations
- New Chemical entities for diseases of national relevance, process development for pharmaceuticals and fine chemicals.
- Standardization of herbal medicines and their documentation as monographs
- Pharmacological and toxicological screening of medicinal natural products and development of animal models

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strength:

- High quality intake of students and accomplished and reputed faculty members.
- A culture of excellence in Research and Technical Education in Pharmaceutical sciences and Technology with a track record of research publications in high impact factor journals
- Placements in Industry and in top level Universities abroad for higher Studies
- Development of entrepreneurship skills amongst graduates and post-graduates
- Strong networking with the pharma industry and professional bodies

Weakness:

- Overloading of teaching staff by administrative responsibility because of vacant positions
- Limited space and infrastructure
- Limited involvement in community and non-formal sector
- Insufficient funding for infrastructure and development
- Inadequate funding for maintenance of equipment

Opportunities:

- Low level of R&D in the industry
- Outsourcing by the industry
- Increasing awareness of and demand for higher education in health care
- Need for newer drugs and formulations
- Government funding for research

Challenges:

- National institute and University with Central Government funding
- Establishment of new Technological Institutes offering similar courses
- Foreign universities coming to India attracting students abroad and also in India
- Increased availability of other attractive employment opportunities in other sectors
- Limiting government regulations and policies.

51. Future plans of the department.

- M.Tech Programme In Pharmaceutical Biotechnology
- Developing centres of research in
Nano drug delivery systems
Toxicology
Cancer and infectious diseases
Preclinical and clinical pharmacology
UGC national networking centre in drug discovery and drug delivery
- Self-sustaining certificate courses in
Clinical pharmacy
Regulatory affairs and IPR
Pharmacoeconomics

Physics Department

The Department of Physics, which has the distinction of being one of the earliest Departments in the Institute, initially started as Optics Section in 1934, subsequently is established as an individual department. Department is housed in the Centre for Advanced Studies building. The department has current staff strength of 6, which includes **3 Associate Professors, 1 Assistant Professor, 1 DST-INSPIRE Faculty and 1 Assistant Professor under UGC-FRP**. The department has extensive Polymer science research laboratory and well equipped UG/PG laboratories. An instrument mechanic, 2 STAs, a laboratory assistant and 3 lab attendants take care of our all instruments.

The department undertakes teaching basic and applied Physics to Engineering and other allied technology courses, interdisciplinary programmes from UG to M.Tech courses. The department will be introducing more electives at UG/PG level. The unique **M.Sc. programme in Physics with emphasis on Material Science** is started in 2014. The programme aims at preparing students who will have sound knowledge of core physics and extensive exposure to and understanding of analytical and characterization techniques.

The faculty of the department undertakes research in many aspects of material sciences such as **Electro-optical properties of Polymers, Nano and Plasma treatments in Molecular tailoring of material, Carbon Nanotubes/polymer composites and polymer-nano-composites for structure property relationship , Magnetic properties of materials, Nanodrug delivery, Theoretical Aspects of Chemical Engineering and green energy alternatives like Solar Thermal technologies**. There is also a **unique research in Colour assessment of dyed textiles and colour perception**. Department has produced number of PhDs in Physics with specializations in Nanoscience, Nanotechnology & Polymer composites. Faculties have collaborations with other departments in the Institute, professional bodies and industries. Departmental faculty has patents to their credit and are also involved in consultancies. We have recorded **100% placement** of our **PhD graduates** in academic as well as industrial sector.

The major thrust areas of research carried out in the Department are:

- Polymer/Polymer Composites and nanocomposites:
 - Study of crystallization kinetics in polymers, polymer composites & polymer-nanocomposites, orientation studies of Polymers/Polymer composites & nanocomposites, Structure property relationship in Polymers. Polymer composites & nanocomposites.
 - Surface modification of polymer materials using plasma for improvement of adhesion of printability properties.
 - Study of electrical, thermal, mechanical, dielectric and piezo electric properties of polymers and their composites.
- Solar Thermal Applications:
 - Designing of reflector shape.

- Determination of efficiency of collection of solar radiations.
- Configuration & surfaces of absorber pipes studies under different parameters.
- Steam generation up to 250°C for industrial applications.
- Colour Assessment of Dyed Fabric and Study of Geometric Attributes of Colour.
- Nanoparticles synthesis.
- Theoretical Aspects of Chemical Engineering in collaboration with Department of Chemical Engineering of the Institute.

The department has proved its competencies in **government funded** projects worth **Rs.2.9 Crores** and **private funded** projects worth **Rs.20.18 Lakhs**, having 7 national and 2 international Collaborations. The steadily increasing faculty contribution in terms of research **papers** is the prime trait of the Department having **115 Peer Reviewed Publications/Journals with an estimated impact factors of 1 to 7.86 Conference proceedings with over 1700 citations in just last 5 years alone**. The faculties also have a rare distinction of holding patents as compared to many Physics Departments of other Universities. In addition to being part of various committees of the Institute, Department faculty manage the goodwill of institution by participating in national committees of neighbouring universities & organizations, conducting various technical workshops. Projects for UG students on academic interest basis are routinely offered and teaching methods as per ICT norms are regularly revised via constant internal meetings and introducing innovative courses.

The Department of Physics, with able guidance from adjunct and senior professors, aims to bank on its Strengths and eliminate its weaknesses such as being regarded as support department for the institution as a whole, no admin staff & low alumni involvement to shape policies. To handle the new challenges such as **developing new analytical techniques** or **attracting talented students & faculties on national level** and make the best of its opportunities such as launching of a **new M.Sc. course with a research grade labs and excellent faculty spectrum**, the department is confident to make boundless changes in Physics education at Bachelors, Masters & PhD levels of the Institute by establishing **new interdisciplinary centre for material science, more electives, a computing centre along with strengthening collaboration with national labs**.

1. **Year of establishment** - 1934
2. **Is the Department part of a School/Faculty of the university?** - YES
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc. D.Litt., etc.)** - M.Sc., PhD
4. **Interdisciplinary programmes and departments involved**
Courses for MTech & M.Sc. (Textile Chemistry)
5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
NIL

6. **Details of programmes discontinued, if any, with reasons**
NIL
7. **Examination System: Annual/Semester/Trimester/Choice Based Credit System - SEMESTER**
8. **Participation of the department in the courses offered by other departments**
UG – 1st and 2nd year (both for B.Chem. Engg. & B.Tech.)
9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	2	0	
Associate Professors	2	1	2 CAS
Assistant Professors	5	3	
Others	1 DST 1 FRP	2	

10. **Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialisation	Years of Experience	No. of PhD/MPhil students guided for the last 4 years
DR. (MRS.) Vineeta Dinesh Deshpande	M.Sc., M.Phil., PhD	Associate Prof	Polymer nanocomposite-structure-property relationship, Solar thermal applications, Nano-drug delivery		8 + 1(CO-GUIDE)
DR. Rajendra R. Deshmukh	M.Sc., B.Ed., PhD	Associate Prof	Plasma Technology, Polymer Physics, Functionalization of		8 + 1(PhD Tech)

			<p>nano-particles.</p> <p>Molecular tailoring of surfaces using plasma for biomedical applications, textile physics,</p> <p>Electro-optical properties of Polymer Dispersed Liquid-Crystals.</p> <p>Polymer nanocomposites materials.</p>		
DR. Mohan Narayan	M.Sc., PhD	Associate Prof	<p>Statistical Mechanics of Fluids & applications to Chemical Engineering Phenomena,</p> <p>Theoretical High, Energy Physics.</p>		2
DR. Neetu Jha	M.Sc. PhD	Assistant Prof	<p>Carbon Nanotubes, Graphene,</p> <p>Fuel Cell electro-catalyst, Energy storage and Electrochemical Sensors</p>		4
Dr. Anar Singh	M.Sc. PhD	Assistant Prof	<p>Probing Magnetic properties of materials using Neutron Diffraction</p>		
Dr. S. V. Panse	PhD	Adjunct Professor	<p>Concentrating Solar Power technologies</p>		1
Dr. A. K. Kalkar	PhD	Adjunct Professor			

11. List of senior Visiting Fellows, adjunct faculty, emeritus professors

Visiting	-	00
Adjunct	-	02
Emeritus	-	00

- a) Professor A. K. Kalkar - Adjunct Professor
 b) Professor S. V. Panse - Adjunct Professor

12. Percentage of classes taken by temporary faculty – programme-wise information - NIL

13. Programme-wise Student Teacher Ratio - 5:1 (M.Sc. Physics)

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

a) Lab Assistant:	01
b) Lab Attendant:	02
c) Instrument Mechanic:	01
d) Sr. Tech Assistant:	03

15. Research thrust areas as recognized by major funding agencies

- a) Polymer Physics
 b) Solar energies and applications
 c) Nanoscience, Nanotechnology
 d) Plasma Processing, Electro-optics
 e) Nano-drug delivery

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

Sponsor	Title	Duration	Total Amount	Principal Investigator	Research Fellows	Co-investigator
GOVERNMENT AGENCIES						
AICTE RPS(c)	Synthesis, Characterization And Study Of Properties of Nano-Fillers Based Polysiloxane Composites	2 years	20 lakhs	Dr. (Mrs.) V. D. Deshpande	Vrushali Murudkar	

UGC Major	Studies of Unique Morphological And Thermal Behavior of Reorganized Poly (Ethylene Terephthalate) And Its Nanocomposites With Organomodified Clay'	3 years	12 lakhs	Dr. (Mrs.) V. D. Deshpande	Amita Gaonkar	
BARC	Development and characterization of selective coating for enhancement of radiation absorption of solar receivers	2 years	1.5 crores	Dr. (Mrs.) V. D. Deshpande	Satish Dubey	
DST-MoFPI	Studies in Physico-Chemical Properties of Plasma Processed Rice grains	2 years (26/12/2012 to 26/12/2014)	20.18 lakh	Dr. U. S. Annapure		Dr. R. R. Deshmukh
DST Inspire	Development of Pt alloy based electrocatalyst for fuel cell	5 years	35 lakh	Dr. Neetu Jha		
DST Nanomission	Development of metal oxide graphene based supercapacitor	3 years	25 lakh, 77 thousand, 6 hundred	Dr. Neetu Jha		Prof. A. B. Pandit

SERB, Startup grant for Young Scientist	Development of electro-catalyst support for fuel cell	3 years	17 lakh, 40 thousand	Dr. Neetu Jha		
BRNS, Young Scientist Research Award	Development of Carbon based nanocomposites for supercapacitor	3 years	11 lakh, 90 thousand	Dr. Neetu Jha		
PRIVATE INDUSTRIES						
Universal Starch-Chem Allied Ltd.	Studies in Synthesis of Biodegradable Polymer		20.18 lakhs	Dr. A.S. Sabnis	Sinkar Mayur	Dr. R. R. Deshmukh, Dr. Neetu Jha

17. Inter-institutional collaborative projects and associated grants received

Collaborator	National	International
Dr. V. D. Deshpande	02	-
Dr. R. R. Deshmukh	03	02
Dr. M. Narayan	02	-

1. Dr. V. D. Deshpande

- Professor V. B. Patravale, Dept. of Pharma, ICT
- Professor V. A. Pandit, Dept. of Pharmaceuticals, BharatiVidyapeeth, Pune.

2. Dr. R. R. Deshmukh

- Dr. K. NavneethaPandiyaraj, Dept of Physics, SSIET, Coimbatore.
- Dr. VarshaKelkar-Mane, Department of Bio-tech, University of Mumbai.
- Professor N. V. Bhat, BTRA. Mumbai
- Professor R. Dabrowski, Institute of Chemistry, Military University of Technology, Warsaw 00-908, Poland
- Professor R. B. Timmons, University of Texas, Arlington, USA.

3. Dr. M. Narayan

- Dr. Vishvanath Dalvi, Dept of Chemical Engg, ICT.

- Dr. Bipin Koranga, Dept of Physics, Kirori Mal College, University of Delhi.
- 18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.**
- DAE/BRNS project (ongoing) on paints of solar collector. Funding: **1.5 crores**
- 19. Research facility / centre with**
- ✓ state recognition
 - ✓ national recognition
 - international recognition
- 20. Special research laboratories sponsored by / created by industry or corporate bodies - No**
- 21. Publications:**

- Number of papers published in peer reviewed journals (national / international)

Name	Number of Publications (Peer Reviewed)	Conference Proceedings
Dr. V. D. Deshpande	14	42
Dr. R. R. Deshmukh	47	08
Dr. Mohan Narayan	26	01
Dr. Neetu Jha	17	15
Dr. Anar Singh	11	

- Monographs - **NIL**
- Chapters in Books - three chapters by Dr. R. R. Deshmukh

Name of the Book	Authors	Name of the Chapter	Editor(s)	Publishing	Year
Liquid Crystalline Polymers: Volume 2--Processing and Applications	R. R. Deshmukh	Electro-optic and Dielectric Responses in PDLC Composite Systems		Springer	2015
Plasma Technologies for Textile & Apparel	N. V. Bhat R. R. Deshmukh	Plasma processing of textiles to enhance their dyeing and surface properties	S.K. Nema, P.B. Jhala	Woodhead Publishing, India	2014

Textile Dyeing	N. V. Bhat, R. R. Deshmukh	Pre-treatments of Textiles Prior to Dyeing: Plasma Processing	Ira S. Krull, Sebastiano D'Amico	Intech Publisher	2012
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- Edited Books - **NIL**
- Books with ISBN with details of publishers - **NIL**
- Number listed in International Database (For e.g. Web of Science, Scopus) –all **mentioned in the Publication section – mostly Scopus**
- Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) – **NIL**
- Citation Index – range / average

Name	Number of Citations
Dr. V. D. Deshpande	25
Dr. R. R. Deshmukh	683
Dr. Mohan Narayan	350
Dr. Neetu Jha	433
Dr. Anar Singh	224

- SNIP - **NIL**
- SJR - **NIL**
- Impact Factor – range / average

Name	Impact factor-range
Dr. V. D. Deshpande	1.0 to 3.5
Dr. R. R. Deshmukh	1.2 to 3.6
Dr. Mohan Narayan	1.0 to 6.11
Dr. Neetu Jha	1.0 to 5.78
Dr. Anar Singh	1.0 to 7.5

- h-index

Name	h-Index
Dr. V. D. Deshpande	N. A.

Dr. R. R. Deshmukh	14
Dr. Mohan Narayan	10
Dr. Neetu Jha	10

22. Details of patents and income generated

Name of the Patent holder	Number of Patents
Dr. V. D. Deshpande	01
Dr. R. R. Deshmukh	01 (applied for US Patents)
Dr. Neetu Jha	01

Patent details

Name	Title	Country	Patent No
Dr. V. D. Deshpande	Pharmaceutical compositions for bioenhancement of active agents	India	1108/MUM/2012
Dr. R. R. Deshmukh			
Dr. Neetu Jha	CNT based magnetic nanofluids	India	408/CHE/2008
	CNT-M biosensor for detection of OP nerve agents	India	1328/CHE/2008
	Nanocomposites including carbon nanotubes having metal nanoparticles	US	12/909547

23. Areas of consultancy and income generated

Industrial Consultancy

Name of the Company	Consultant	Consultancy provided on
Universal Starch-Chem Allied Ltd.		Conversion of starch to bio-polymer

24. Faculty selected nationally / internationally to visit other laboratories / institutions

a. industries in India and abroad

Dr. R. R. Deshmukh visited Univ of Texas, Arlington

25. Faculty serving in

a) National committees b) International committees c) Editorial Boards d) any other (please specify)

Name of the faculty	Serving in
Dr. R. R. Deshmukh	Advisory Committee, BITRA
Dr. Mohan Narayan	University of Mumbai, MSc Syllabus Committee

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs). - 02

27. Student projects

- Percentage of students who have done in-house projects including inter-departmental projects - 50%
- Percentage of students doing projects in collaboration with other universities industry / institute - 50%

28. Awards / recognitions received at the national and international level by

Faculty - Dr. R. R. Deshmukh is a reviewer for many Journals in the field of Polymer Physics & Surface Sciences.

Doctoral / post doctoral fellows - Nil

Students - Nil

29. Seminars/ Conferences/Workshops organized and the source of funding (national International) with details of outstanding participants, if any.

Department organized the following workshops

- “Revisiting Thermodynamics” under TEQUIP
- “Current trends in Polymer Physics” under UGC CAS

30. Code of ethics for research followed by the departments - the department adheres to the Institute policies

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Sc. Admission – 2014	20	02	03	40%	60%
M.Sc. Admission – 2015	20	03	02	60%	40%

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
M.Sc. Physics	NIL	100%	NIL	NIL

33. How many students have cleared Civil Services and Defence Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

- 03

34. Student progression

Student progression	Percentage against enrolled
UG to PG	NA
PG to M.Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
Employed <input type="checkbox"/> Campus selection <input type="checkbox"/> Other than campus recruitment	YES
Entrepreneurs	NA

35. Diversity of staff

Percentage of faculty who are graduates	
Of the same University	-
From other University within the State	60%
From Universities of other States	40%
From Universities outside the country	-

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period – NIL

37. Present details of departmental infrastructural facilities with regard to

a) Library	-	NO
b) Internet facilities for staff and students	-	Available
c) Total number of class rooms	-	02
d) Class rooms with ICT facility	-	02
e) Students' laboratories	-	04
f) Research laboratories	-	04

38. List of doctoral, post-doctoral students and Research Associates

a) from the host institution/university	-	Nil
b) from other institutions/universities	-	100%

39. Number of post graduate students getting financial assistance from the university. - Nil

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. - Yes.

Extensive discussions with Subject Experts from BARC/IIT/University of Mumbai in framing the M.Sc. syllabus.

41. Does the department obtain feedback from

- faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

YES!

- students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

AS PER ICT RULES

- alumni and employers on the programmes offered and how does the department utilize the feedback?

AS PER ICT RULES

42. List the distinguished alumni of the department - Nil

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

Department has MS Patel Trust under which we invite eminent speakers from Polymer Physics

44. List the teaching methods adopted by the faculty for different programmes.

AS PER ICT NORMS

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

Via constant internal discussions and interaction between faculties of the department & colleagues from other departments. also constantly innovating our courses.

46. Highlight the participation of students and faculty in extension activities.

The faculties of the department give lectures in colleges affiliated to neighboring universities.

47. Give details of “beyond syllabus scholarly activities” of the department.

Faculties participate in various conferences/workshops across the country.

**48. State whether the programme/ department is accredited/ graded by other agencies?
If yes, give details.**

No

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

By research/consultancy

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

STRENGTHS

- a) the department is a major center for polymer research
- b) a center for research in solar - thermal tech
- c) faculty with diverse research interests

- d) quality teaching
- e) a unique m.sc. program with emphasis on material science

WEAKNESSES

- a) low faculty strength
- b) no departmental administrative staff
- c) too much involvement of faculty in institute administration
- d) being regarded just as a support department
- e) negligible involvement of alumni of the department for its development & to shape its policies

OPPORTUNITIES & CHALLENGES

- a) interdisciplinary work with technology departments
- b) launching of a unique m.sc. course because of the varied infrastructure available in the department
- c) develop newer analytical techniques
- d) attract talented students/faculties on a national basis
- e) to get industry support & participation for the m.sc. course

51. Future plans of the department

- a) To establish a new interdisciplinary center for material science
- b) To further innovate the m.sc. program by introducing more electives
- c) To set up a department computing center
- d) To further strengthen ties & collaboration with national laboratories
- e) To introduce more courses at the ug level

DBT-ICT Centre for Energy Biosciences

The DBT-ICT Centre for Energy Biosciences (DBT-ICT-CEB) is a unique place that integrates basic and translational science capabilities for bioprocess development and scale up. Funded by The Department of Biotechnology, Ministry of Science and Technology, India, the Centre was established and formally inaugurated in May 2009. Established at a total cumulative cost equivalent to more than USD 15 million, the Centre is a part of the Institute of Chemical Technology (ICT) at Matunga, Mumbai, which is a deemed University under Section 3 of UGC Act 1956. The Centre was set up as a result of vision and efforts of Dr. M. K. Bhan, Secretary DBT and Dr. Renu Swarup, Advisor, DBT, and functions under the leadership of Dr. G. D. Yadav, Vice Chancellor, ICT. The projects and technical programs at the Centre are coordinated by Dr. Arvind Lali. The Centre is focused primarily at developing biotechnologies for deriving biofuels and other products from renewable resources for reducing India's rising dependence on petroleum and cut down greenhouse gas emissions. The Centre believes in building multidisciplinary capacity for development of integrated technology packages.

The Centre successfully completed its first phase of five years in 2013 and was awarded extension of five years by the Department of Biotechnology with the extended mandate of upscaling and upgrading the platform technologies during the first phase.

The Centre for Energy Biosciences has attracted a large number of industrial and academic collaborations as a result of its reputation of conducting cutting edge research and delivering viable and scalable solutions to the biotech industry. The 10 Ton/day biomass pilot plant set up by Industry in the first phase has successfully validated all segments of the novel DBT-ICT Lignocellulosic Ethanol Technology in discontinuous mode. The second phase shall involve integration of all the segments at full capacity in a continuous non-stop flow mode from biomass size reduction to ethanol fermentation. Also during the first phase, the Centre has been able to create and develop cutting edge technologies in the areas of biorefinery development, separation sciences, analytical sciences, enzyme technology, fermentation technology, algal biotechnology and metabolic engineering. The Center aims to continue the work in an intensive mission mode aimed at translation of developed technologies. To achieve its objectives the Centre has entered collaborations with several Industrial Partners and several of the joint initiatives have received federal support exceeding 10 million USD.

The Centre is also part of several national and international academic collaborations (Indo-UK, Indo-Australia, Indo-German, Indo-US and several national projects) with grants amounting to more than 10 million USD under various R&D schemes floated by Ministry of Science and Technology, Government of India. The Centre is in the process of expanding its state-of-art facility by procuring several high-end equipments and instruments that will not only lead to high level contemporary research but also an accelerated development of several more scalable technologies based on the knowledge base generated.

Events Organized by DBT-ICT Centre for Energy Biosciences

**Inauguration of Extension wing of DBT-ICT CEB by
Honorable Union Minister Dr. Harsh Vardhan on 23rd June 2015**





Bioprocessing India 2014 on 17th -20th December 2014







Workshop on "Protein-Protein interaction technologies: Bacterial and yeast two hybrid systems & Lecture on "Careers in Biology" by Prof. Peter Uetz, Centre for the Study of Biological

Complexity, Virginia Commonwealth University Richmond, VA, USA on 17th-28th November 2015





Concept to Commercialization (c2c) Thought Leadership Symposium on Bioprocessing -27th - 28th May 2015





Science Day celebration 2011 on 28th Feb 2011



1. **Year of establishment** – 2009
2. **Is the Department part of a School/Faculty of the university?** – No
The Centre is established jointly by Department of Biotechnology (DBT), Government of India and Institute of Chemical Technology.
3. **Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.)** –
PG, Ph. D.
4. **Interdisciplinary programmes and departments involved**

Courses	Departments
a) M.Tech Bioprocess Technology b) Ph.D. (Tech.) Bioprocess Technology c) Ph.D. (Science) BioTechnology d) Ph.D. (Science) Chemistry e) Ph.D. (Tech.) Chemical Engineering f) M.Tech Green Technology	a)DBT-ICT CEB b)Department of Oils, Oleochemicals & Surfactants Technology c)Department of Chemical Engineering d)Department of Food Engineering & Technology e)Department of Pharmaceutical Sciences & Technology f)Department of Chemistry g) Centre for Green Technology

5. **Courses in collaboration with other universities, industries, foreign institutions, etc.**
No
6. **Details of programmes discontinued, if any, with reasons**
No
7. **Examination System:** Semester Based Credit System
8. **Participation of the department in the courses offered by other departments**

a) Ph.D. (Science) Chemistry b)Ph.D. (Tech.) Chemical Engineering c) M.Tech Green Technology	a) Department of Chemical Engineering b) Department of Chemistry c) Centre for Green Technology
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9. **Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)**

Post	Sanctioned	Filled	Actual (including CAS & MPS)
Professor	-	-	Nil
Associate Professors	4	-	Nil
Assistant Professors	4	2	Nil

Others			Nil
Research Scientist	3	6	
Research Associate	5	3	
Post Doctoral Fellow	3	5	

10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

Name	Qualification	Designation	Specialization	No. of Year of Experience	No. of Ph.D./ M.Tech/M. Chem. students guided for the last 4 years
Prof. Arvind M. Lali	Ph.D. Tech.	Professor of Chemical Engineering Head- DBT-ICT CEB	Chemical Engineering		Ph.D. – 28 M.Tech.- 6 M.Chem.- 6
Dr. Sandeep Kale	Ph.D. Tech. (Chem. Eng.)	Assistant Professor	Chemical Engineering	8 yrs	M.Tech.- 9
Dr. Annamma Anil	Ph. D. Applied Chemistry	Assistant Professor	Biochemistry	8 yrs	Ph.D. – 4 M.Tech.- 4
Dr. Reena Pandit	Ph.D. Marine Biotechnology	Research Scientist	Marine Biotechnology	7 yrs	M.Tech.- 7
Dr. Aruna Mahesh	Ph. D. Chemistry	Research Scientist	Biotechnology	5 yrs	-
Dr. Gunjan Prakash	Ph. D. Plant Biotechnology	Research Scientist	Biotechnology	7 yrs	M.Tech - 4
Dr. Pooja Joshi	Ph. D. Plant Biotechnology	Research Scientist	Plant Biotechnology	5 yrs	-
Dr. Shamlan MS Reshamwala	Ph. D. Molecular Biology	Research Scientist	Molecular Biology	4 yrs	-
Dr. Aruna G. Agrawal	Ph. D. Natural Science	Research Scientist	Natural Science	1 yr	-
Dr. Sanjeev K. Chandrayan	Ph. D.	DBT-Energy Overseas Fellow (Research Scientist)		1 yr / 7 months	-
Dr. Manju Sharma	Ph. D Microbiology	Research Associate	Microbiology	4 yrs	-
Dr. Pamela Jha	Ph. D. Biotechnology	Research Associate	Biotechnology	3 yrs	-
Mr. Sandip	Post Graduate	Research	Patent & IPR	3 yrs	-

Kale	Diploma in Patent Law	Associate			
Dr. Prathemesh Wadekar	Ph.D. Science	Post Doctoral Fellow	Chemistry	8 months	-
Dr. Rajpratap Kshatriya	Ph.D. Organic Chemistry	Post Doctoral Fellow	Natural Product Chemistry	6 months	-
Dr. R. Lakshmi Naryanan	Ph. D. Marine Food Technology	Post Doctoral Fellow	Fermentation Microbiology	5 months	-
Dr. Nitin Trivedi	Ph.D. Biological Science	Post Doctoral Fellow	Microbiology & Seaweed Biotechnology	4 months	-
Dr. Rajeshkumar Vadgama	Ph. D. Science Biotechnology	Post Doctoral Fellow	Biotechnology	2 years	-

11. List of senior Visiting Fellows, adjunct faculty, Emeritus professors
No

12. Percentage of classes taken by temporary faculty – programme-wise information

M.Tech. Bioprocess Technology – 60% (faculty at the centre, all of whom are on tenure track basis)

13. Programme-wise Student Teacher Ratio

- M.Tech (Bioprocess Technology) – 4:1
- Ph. D. (Tech.) Bioprocess Technology- 3:1
- Ph.D. (Sci.) Biotechnology – 8:1

14. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual

SR.NO.	POST	SANCTIONED	FILLED
1.	Instrumentation Engineer	02	02
2.	Junior Assistant	05	05
3.	Lab Assistant	10	10

15. Research thrust areas as recognized by major funding agencies

Biomass Deconstruction

Pretreatment is one of the key components in second generation bio-ethanol production contributing ~20% of the total cost, aiming towards producing enzymatically accessible

cellulose by breaking lignin and hemicellulose barriers. Most of the processes developed throughout the globe are consolidated and biomass specific (non woody with low lignin content) limiting the commercialization of the same.

Our approach has been to develop a biomass independent process that not only yields high purity cellulose but also produces equally pure xylose and lignin streams, which can act as platform chemicals in numerous applications and not making process limited only to bio-ethanol as an end product. Furthermore, chemicals and reagents are efficiently recovered using advance unit operations with zero waste discharge, reducing overall economics of process.

Enzyme Technology

The search for better enzymes for targeted activities and integration of processes to harness its potential is the scope of our research. The area of research for is divided into two main segments, namely; Enzyme Engineering and Process Engineering. These two approaches help integrate a rather unique approach in the field of Enzyme Technology, wherein, biotransformation is planned at the atomic scale, developed at the molecular scale and integrated at the laboratory and pilot scale. The Enzyme engineering module works on in- silico enzyme design followed by applying tools from protein engineering. The work is primarily directed towards the development of enzymes with better physico-chemical properties and for targeted biotransformation problems. The Process Engineering module focuses on reaction engineering, reactor design and process integration and intensification. This unique combination of basic science and engineering principles has helped develop enzyme technologies with better efficiencies and end-product qualities.

The group is currently working on projects that employ enzymes for different fuel, food and pharma applications. The work entails processing agricultural residues and by-products of the agri-industry for valorization. The projects we handle include development of chemical and enzymatic methods and reactor systems for hydrolysing polysaccharides to sugars for fermentation and for nutraceuticals, proteins to bioactive peptides and oils to fatty acids that can be further derivatized for specific applications in food, pharma and lubricant industries.

Molecular & Synthetic Biology

Molecular Biology Group focuses on production of green alternatives to petroleum-

derived fuels via bioconversion lignocellulosic biomass (LBM) from a variety of sources. We aim to develop multiple versatile microbial host platforms that will be capable of utilizing all LBM components -sugars, acids and aromatic compounds and converting them into value-added products. Heterologous gene expression and pathway modification form the basis for reprogramming microbial metabolic pathways. By employing recombinant DNA technology, we aim to develop economically viable and sustainable technology for biofuel production. Apart from biofuels, other value added chemicals targeted for bio-production include flavour and fragrance chemicals and building block materials.

Fermentation Technology

Fermentation group at DBT-ICT Centre for Energy Biosciences aims at developing advanced and progressive fermentation strategies for production of bio-based renewable biofuels (ethanol, butanol & Biomethane), industrial chemicals (lactic acid, propionic acid, acetic acid and 2,3-butanediol) and value added products (Vitamin B12, DHA and carotenoids) from sustainable feedstocks like agro-waste residues and other lignocellulosic biomass. The focus is to design commercially scalable advanced fermentation process technologies which are less capital intensive and with high productivities.

Economics of any industrially scalable process is the driving force for commercial success of any new technology and one of the biggest challenges for competing with existing as well as upcoming technologies for various bio-based products. Moving away from traditional batch technologies, development of Advanced Continuous Fermentation Systems is the key to transform industrial biotechnology with enhanced productivities.

Algal Biotechnology

The Algal biotechnology Lab at CEB is working to develop algae as a commercially viable feedstock for renewable energy, feeds, nutraceuticals, bio-products, water conservation, waste water management and CO₂ abatement. It holds a sunlight driven facility to assist all research activities under natural sunlight to facilitate direct translation of lab based results to large scale. The approaches at CEB includes bio-prospecting of algal strains; nutrient and light optimisation; coupling of lignocellulosic derived sugar technology for mixotrophic growth, high value product development; genetic engineering, photobioreactor and raceway system design to develop economically viable

methods of producing biofuels and other commodities. The advanced lab research is being scale-up by developing pilot-scale semi-commercial facility of large photobioreactors to support development of innovative, sustainable, and commercially viable algae-based biotechnology solutions for the production of biofuels and bio-products.

Separation & Bioprocess Technology

Downstream processing accounts for major cost (>60%) component in production of biopharma, biologics, pharma, natural, nutraceutical, health supplements, food and feed products or ingredients used for various applications. Therefore process design, development, optimization, validation and scale-up from lab level to commercial plants is taken as key activity in the group. This is achieved through selectivity engineering during designing of bioprocesses, specifically in adsorptive and chromatographic separations, membrane separations, precipitation and crystallization, extraction and distillation as unit operations. Understanding of science underpinning the processes using molecular simulations and mathematical modelling is carried out to arrive at processes having superior objective functions for yield, purity and productivity with low cost (both CAPEX and OPEX). Group specifically deals with extraction and purification of proteins, enzymes, antibodies and hormones, photochemical, nutraceuticals and health supplements, food additives and feed supplements. In the process development high throughput process design (HTPD) tools are used with Quality by Design approach (QbD) to get best operative variables for successful scale up and consistent throughput as well as performance. Development of suitable analytical methods and its validation is another exercise in the group which gives better insight into the process for correct quality assessment and for design of process analytical technology (PAT).

Stability of the product another challenge on which work is being carried out. Conformational and colloidal stabilization of antibodies and other biopharma and biologics is being done to arrive at a strategy for their stabilization by which these products can remain stable even at room temperature and with other stress conditions. Development of new generation adsorbents and transformation of natural products is also carried out to reduce cost of purification and also to get products in minimum number of steps with superior yield and purity. Another dimension is valorisation of agro-products through secondary agriculture (using bioprocessing strategies) is done to obtain value added products. In all cases, process integration and intensification is carried out to

benefit the overall manufacture. Thus, process and process equipment design and scale-up from lab level to commercial/full scale plant is carried out for successful translation of technologies at industrial scale.

16. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

- **Number of Faculty**

Professor	01
Assistant Professor	02
Research Scientist	06
Research Associate	08

- **Ongoing projects**

Government projects

Sr. No	Title	Funding Agency	Amount (Rupees in Lakhs)	Duration
1.	Integrated biorefinery for production of sorghum seed protein	DBT-AISRF, India	113.74	2015-2017
2.	Design of selective nanoporous membrane bioreactor for efficient production of bio-butanol from lignocellulosic sugars	IGSTC, DST, India	115.40	2014-2017
3.	Green Enzymatic fat splitting technology for production fatty acids and acyl glycerols	DST, India	847.53	2014-2016
4.	Macroalgal Biorefinery for CO ₂ Sequestration and production of biofuel and valued added compounds	DSIR-PACE, DST, India	85.00	2014-2016
5.	Improved Production of Biogas and Bio-CNG from Lignocellulosic Biomass	MNRE, India	515.61	2013-2015
6.	Centre for Energy Biosciences: New and Extension Proposals	DBT, India	1800.00	2013-2018
7.	Transnational approaches to resolving biological bottlenecks in macroalgal biofuel production	DBT-BBSRC (Joint Indo-UK Scheme)	471.02	2013-2016

8.	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw	DBT-BBSRC (Joint Indo-UK Scheme)	272.08	2013-2016
9.	Integrated technologies for economically sustainable bio- based Energy	AISRF Indo-Australia Grand Challenge Program, DST, India	444.00	2013-2016
10.	Isolation, purification and stabilization of hCG, HMG, FSH, LH and other urine proteins, and stabilization	DBT-SBIRI, DBT, India	22.50	2013-2015
11.	Development and characterization of alternative affinity adsorbent for purification of therapeutic antibodies	DBT, India	68.46	2013-2016

Private projects

Sr. No	Title	Funding Agency	Amount (Rupees in Lakhs)	Duration
1.	Microbial biotransformation for aromatic chemicals	Nagar Haveli Perfumes & Aromatics	15.00	2014-2015
2.	Generation of purified phytoene from yeast cell mass	Wacker Chemie AG	14.49	2014-2015
3.	Mass Cultivation of algae for aqua feed	Godrej Agrovet Ltd.	115.00	2014-2016

- Number of Ongoing Projects from National funding agencies: 11
- Number of Faculty with ongoing Projects (national & International): 16
- Total Grants Received: 48,96,00,000/- only

17. Inter-institutional collaborative projects and associated grants received

- National collaboration
- International collaboration

Sr. No	Title	Collaboration	Grant Received (INR Lakhs)
International			
1.	Design of selective nanoporous membrane bioreactor for efficient production of bio-butanol from lignocellulosic	<ul style="list-style-type: none"> Fraunhofer Institute for Ceramic Technologies & Systems, Hermsdorf Germany 	115.40

	sugars		
2.	Transnational approaches to resolving biological bottlenecks in macroalgal biofuel production	<ul style="list-style-type: none"> • School of Biological & Biomedical Sciences, Durham Energy Institute, Durham University • Centre for Advanced Research in International Agricultural Development (CARIAD), Bangor University • Institute of Biological, Environmental and Rural Sciences. Aberystwyth University 	471.02
3.	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw	<ul style="list-style-type: none"> • Clostridia Research Group/ Life Sciences, University of Nottingham • Centre for Novel Agricultural Products, Department of Biology, University of York • Institute for Cell and Molecular Bioscience, Newcastle University • Faculty Health & life Sciences, Oxford Brookes University 	272.08
4.	Integrated technologies for economically sustainable bio-based Energy	<ul style="list-style-type: none"> • Centre for Tropical Crops and Biocommodities, Queensland University of Technology, Brisbane, Australia • The Centre for Energy, The University of Western Australia, Perth, Australia • Department of Chemical Engineering, Curtin University, Perth, Australia • New South Wales Department of Primary Industries 	444.00
	National		
5.	Transnational approaches to resolving biological bottlenecks in macroalgal biofuel production	<ul style="list-style-type: none"> • CSIR-Central Salt and Marine Chemical Research Institute, Bhavnagar, Gujarat 	471.02
6.	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw	<ul style="list-style-type: none"> • DBT-ICGEB Centre for Advanced Bioenergy Research, New Delhi • School of Biotechnology, Jawaharlal Nehru University, New Delhi • Department of Genetics, Madurai Kamaraj University 	272.08

7.	Integrated technologies for economically sustainable bio-based Energy	<ul style="list-style-type: none"> • DBT-ICGEB Centre for Advanced Bioenergy Research, New Delhi • DBT-IOC Centre for Advanced Bioenergy Research, Faridabad • The Energy and Resources Institute, New Delhi • National Institute of Interdisciplinary Science and Technology, Thiruvananthapuram 	444.00
8.	Macroalgal Biorefinery for CO ₂ Sequestration and production of biofuel and valued added compounds	<ul style="list-style-type: none"> • CSIR-Central Salt and Marine Chemical Research Institute, Bhavnagar, Gujarat • Aquagri Processing Private Limited 	85.00
9.	Green Enzymatic fat splitting technology for production fatty acids and acyl glycerols	<ul style="list-style-type: none"> • Acme Synthetic Chemicals 	362.66 (industry contribution) 850.60 (DST contribution as grant to ICT)
10.	Pilot Scale Translational Facility for Value Added Chemicals from Biomass	<ul style="list-style-type: none"> • Privi Biotechnologies (P) Ltd. 	395.00 (Industry Contribution) 390.00 (BIRAC, DBT contribution to company as loan) 50.00 (BIRAC, DBT contribution to ICT as grant)
11.	Lignocellulosic Ethanol Pilot Plant to Integrated Continuous Pilot plant	<ul style="list-style-type: none"> • India Glycols Limited 	862.50 (Industry Contribution) 862.50 (BIRAC, DBT contribution to company as loan)

18. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

Sr. No	Title	Funding Agency	Amount (Rupees in	Duration
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			Lakhs)	
1	DBT-ICT Centre for Energy Biosciences	DBT	2480.00	2008-2012
2	Development of Bioscience and Biotechnology for next generation biofuel	DBT	196.00	2010-2012
3	Extraction, purification of sorghum seed protein for delayed delivery of bioactives	DBT	101.00	2010-2012
4	Improved Production of Biogas and Bio-CNG from Lignocellulosic Biomass	MNRE, India	267.16	2013-2016
5	DBT-ICT Centre for Energy Biosciences: New and Extension Proposals	DBT, India	1800.00	2013-2018
6	Extension: Intellectual Property Management and Technology Commercialization (IPM-TC) Unit	BIRAC (DBT)	90.00	2013- 2015
7	Transnational approaches to resolving biological bottlenecks in macroalgal biofuel production	DBT-BBSRC	498.41	2013-2016
8	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw	DBT-BBSRC	806.76	2013-2016
9	Integrated technologies for economically sustainable Bio-based Energy	AISRF Indo-Australia Grand Challenge Program, DST, India	255.664	2013-2016
10	Extraction, purification, stabilization and biological studies of natural gonadotropins and other uroproteins	SBIRI (BIRAC/DBT)	22.00	2011-2014
11	Green Enzymatic Fat-Splitting Technology for Production of Fatty Acids and Acyl Glycerols	DST	850.60	2014-2016
12	MacroAlgal Biorefinery for CO ₂ Sequestration and Production of Biofuel and Value-added	DSIR	85.00	2014-2016

	Compounds			
13	Design of Selective nanoporous membrane bioreactor for efficient production of bio-butanol from lignocellulosic sugars (SeNaMeB)	IGSTC	115.40	2014-2017
14	Integrated Biorefinery for Production of Sorghum Grain protein	DBT	113.74	2015-2017
15	Energy Biosciences Chairs & Energy Biosciences Overseas Fellowship	DBT	1472.21	2010-2020
16	Development and Characterization of Alternative Affinity Adsorbent for Purification of Therapeutic Antibodies	DBT	68.468	2013-2016

19. Research facility / centre with

- ✓ state recognition
- ✓ national recognition

20. Special research laboratories sponsored by / created by industry or corporate bodies

Research laboratories sponsored by:

GE Healthcare, Agilent Technologist India Pvt. Ltd.

21. Publications:

Number of papers published in peer reviewed journals (national/international)-
146

Monographs - Nil

Chapter Books- 9

Edited Books - Nil

Books with ISBN with details of publishers - Nil

Number listed in International Database (For e.g. Web of Science, Scopus Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) - Nil

Citation Index – range / average - 3-1040

SNIP -

SJR -

Impact Factor – range / average - 07-5.0

h-index - 16-238

22. Details of patents and income generated

PATENTS GRANTED

Sr. No.	Title	Patent no.	Inventors	Income generated
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1	Enzymatic Process For Fat And Oil Hydrolysis	SG11201404463P	Lali Arvind Mallinath; Odaneth Annamma Anil; Vadgama Rajesh Natwarlal; Tribhuvan Nikhil Vilas	Pilot plant being constructed for Demonstration with DST support Total project cost = 850.60 L+362.50L = 1213.10L
2	Method For Production Of Fermentable Sugars From Biomass	<ul style="list-style-type: none"> • US8709763 (US-DIV-I); 2009 • US8338139; 2009 • US8673596 (US-DIV-II); 2009 • BD1005172; 2009 • PK141809; 2009 • ZA2011/09250; 2012 • AU2010252547; 2015 	Lali Arvind Mallinath; Odaneth Annamma Anil; Nagwekar Pooja Devidas; Varavadekar Jayesh Suman; Wadekar Prathamesh Chandrashekher; Gujarathi Swapnali Subhash; Valte Rajeshwar Dattatraya; Birhade Sachinkumar HIRAMA	Pilot plant being constructed for Demonstration with BIRAC, DBT support Total project cost = 862.50L+862.50L = 1725.00L
3	Continuous Counter Current Fluidized Moving Bed (FMB) And/Or Expanded Moving Bed (EMB)	<ol style="list-style-type: none"> 1. CN201080020354.2; 2015 2. CA2754700; 2015 3. ZA10-1370986; 2014 4. US 8673225; 2009 	Lali Arvind Mallinath; Kale Sandeep B; Pakhale Vinod D; Thakare Yogeshwar N.	-
4	Process for Fractionation of Biomass	<ol style="list-style-type: none"> 1. JP2013-513816; 2015 2. ZA2013/00133; 2010 	Lali Arvind Mallinath; Varavadekar Jayesh Suman; Wadekar Prathamesh Chandrashekher	Pilot plant being constructed for Demonstration with BIRAC, DBT support Total project cost = 862.50L+862.50L = 1725.00L

PATENTS FILED AND/OR IN PROCESS OF PROSECUTION

# No.	Title	Patent no.	Inventors	Income Generated
1.	Process For Production Of Pure Glucose From Cellulose	2782/MUM/ 2015	Lali Arvind Mallinath; Odaneth Annamma Anil; Victoria Juliet Joanna; Choudhari Vikram Guntant;	Negotiations with Partnering Industry underway

			Wadekar Prathamesh Chandrashekar; Patil Mallikarjun Laxmiputra; Patil Parmeshwar Shivajirao; Asodekar Bhupal Ravindra; Prakash Indra; Huang Xiaoyan	
2.	A Method For Production Of Isoprenoids By MEP Pathway In Engineered Pseudomonas Putida	2666/MUM/ 2015	Lali Arvind Mallinath; Aruna Mahesh; Krishnan Archana	Collaboration with Industry being worked out
3.	Separation Of Organic Acid From Mixtures Containing Ammonium Salt Of Organic Acids	2090/MUM/ 2015	Lali Arvind Mallinath; Maurya Ritu Rahul	Negotiations with Partnering Industry underway
4.	A Novel Shuttle Vector With Reversible And Extendable Modules For Engineering Of Host Cells	3507/MUM/ 2014	Lali Arvind Mallinath; Bajawa Arjun Singh; Matlani Rekha Khushiramani	-
5.	Constructs For Gene Expression And Integration In Host Cell 2014	Indian Application No.: 3506/MUM/ 2014	Lali Arvind Mallinath; Deb Shalini; Reshamwala Shamlan M.S.	Constructs are being made for other research groups and charges are being worked out
6.	Algal Variants Produced By Genome Shuffling	1940/MUM/ 2014 Inventors:	Lali Arvind Mallinath; Prakash Gunjan; Shukla Bhavya; Vira Chaitali; Rathod Jayant Pralhad.	-
7.	Enzymatic Production Of Monoacylglycerol From Oil	1583/MUM/ 2014	Inventors: Lali Arvind Mallinath; Odaneth Annamma Anil; Vadgama	Pilot plant being constructed for Demonstration

			Rajesh Natwarlal; Tribhuvan Nikhil Vilas	with DST support Total project cost = 850.60 L+362.50L = 1213.10L
8.	Enzymatic Process For Synthesis Of Fatty Acid Ester Of Polyols	1526/MUM/ 2014	Inventors: Lali Arvind Mallinath; Odaneth Annamma Anil; Yadav Manish Gyanendra.	Pilot plant being constructed for Demonstration with DST support Total project cost = 850.60 L+362.50L = 1213.10L
9.	A Process For Fractionation Of Oligosaccharides From Cereal Bran	155/MUM/ 2014; PCT/IB2015/ 000030	Lali Arvind Mallinath; Odaneth Annamma Anil; Pednekar Mukesh Prabhakar	Pilot plant being constructed for Demonstration with BIRAC, DBT support 395.00 (Industry Contribution) 390.00 (BIRAC, DBT contribution to company as loan) 50.00 (BIRAC, DBT contribution to ICT as grant)
10.	A Process For Production Of Soluble Sugars From Biomass	154/MUM/ 2014; PCT/IB2015/ 000034	Lali Arvind Mallinath; Odaneth Annamma Anil; Birhade Sachinkumar Hiraman; Victoria Juliet Joanna;	Pilot plant being constructed for Demonstration with BIRAC, DBT support Total project cost =

			Sawant Sneha Chandrakant.	862.50L+862.50L = 1725.00L
11.	Process For Extraction Of Polyphenols From Biomass	3808/MUM/ 2013	Lali Arvind Mallinath; Odaneth Annamma Anil; Pednekar Mukesh Prabhakar; Singh Niteshkumar Satish; Rathi Abhijit; Iyer Padmini; Deshmukh Sharad	Pilot plant being constructed for Demonstration with Kanoria Chemicals, Vizag. ICT payment of 50.00L for the demonstration of technology
12.	Recombinant E. Coli Strain And Process For Production Of Mannitol Therefrom	3807/MUM/ 2013	Lali Arvind Mallinath; Reshamwala Shamlan M.S.	Negotiations with Partnering Industry underway
13.	Process For Synthesis Of Furan Derivatives From Saccharides Using Acid Catalyst And Preparation Thereof	3664/MUM/ 2013; PCT/IB2014/00 2537	Lali Arvind Mallinath; Pawar Hitesh Suresh	Negotiations with Partnering Industry underway
14.	Multistage Membrane Tree Model For Separation Of Binary Mixtures	2478/MUM/ 2013	Lali Arvind Mallinath; Valte Rajeshwar Dattatraya	-
15.	A Process For Immobilization Of Microbial Cells For Biotransformation	3291/MUM/ 2012	Lali Arvind Mallinath; Mule Abhishek Dilip; Sawdekar Parikshit Rameshwar; Degweker Gautam Shashikant.	-
16.	Process For Extraction And Purification Of Pentacyclic Triterpene Acid/S In High	2172/MUM/ 2012	Lali Arvind Mallinath; Kale Sandeep Bhaskar; Amritkar Vinod	Negotiations with Partnering Industry

	Yield And Purity		Dattatray	underway
17.	Raceway Pond System For Increased Biomass Productivity	1705/MUM/ 2012; WO2013186626	Lali Arvind Mallinath; Pandit Reena; Prakash Gunjan; Mathpati Channamallikarjun; Gangal Swanand; Vira Chaitali; Palkar Juilee; Patil Smita; Gaikwad Sujata	-
18.	A Process For Recovery Of Xylitol With High Yield And Purity	421/MUM/ 2012	Lali Arvind Mallinath; Kale Sandeep Bhaskar; Kadam Sandip	-
19.	Process For Production Of Purified Hydrophobic/Plastifiable Protein/S, Their Hydrolysate/S And Applications Thereo	420/MUM/ 2012	Lali Arvind Mallinath; Kale Sandeep Bhaskar; Kumar Prashant; Mane Sharmilee	-
20.	Enzymatic Process For Fat And Oil Hydrolysis	WO2013114178 ; 278 /MUM/2012	Lali Arvind Mallinath; Odaneth Annamma Anil; Vadgama Rajesh; Warke Mrunal; Bhat Anuradha	Pilot plant being constructed for Demonstration with DST support Total project cost = 850.60 L+362.50L = 1213.10L
21.	A Process For Isolation Of Natural & Bioactive Proteins And Other Minor Components From Defatted Oil Seed Material	3577/MUM/ 2010	Lali Arvind Mallinath; Odaneth Annamma Anil; Iyer Padmini Raju; Ghosh Bidisha; T. D. Anupama; Rathi Abhijit; Deshmukh Sharad	Pilot plant being constructed for Demonstration with Kanoria Chemicals, Vizag. ICT payment of 50.00L for the demonstration of technology

22.	Process For Fractionation Of Biomass	WO2011154967 1762/MUM/ 2010	Lali Arvind Mallinath; Varavadekar Jayesh Suman; Wadekar Prathamesh Chandrashekher	
23.	Method For Production Of Fermentable Sugars From Biomass	WO2010137039 1299/MUM/ 2009	Lali Arvind Mallinath; Odaneth Annamma Anil; Nagwekar Pooja Devidas; Varavadekar Jayesh Suman; Wadekar Prathamesh Chandrashekher; Gujarathi Swapnali Subhash; Valte Rajeshwar Dattatraya; Birhade Sachinkumar Hiraman	Pilot plant being constructed for Demonstration with BIRAC, DBT support Total project cost = 862.50L+862.50L = 1725.00L
24.	Continuous Counter Current Fluidized Moving Bed (FMB) And/Or Expanded Moving Bed (EMB)	WO2010103541 505/MUM/ 2009	Lali Arvind Mallinath; Kale Sandeep B; Pakhale Vinod D; Thakare Yogeshwar N	Pilot plant being constructed for Demonstration with BIRAC, DBT support Total project cost = 862.50L+862.50L = 1725.00L

23. Areas of consultancy and income generated

A.2012-2013

Sr. No.	Name of the Company	Name of the Faculty	Period of Consultancy	Total Consultancy Amount	Faculty share	ICT share
1.	M/s.Privi	Prof. Arvind	1 Year	Rs.18,00,000.00	Rs.12,00,00	Rs.6,00,000.

	Organics Ltd.	M.Lali			0.00	00
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B.2013-2014

Sr. No.	Name of the Company	Name of the Faculty	Period of Consultancy	Total Consultancy Amount	Faculty share	ICT share
1.	M/s.Camlin Fine Sciences Ltd.	Prof. Arvind M.Lali	1 Year	Rs.10,00,000.00	Rs.6,66,667.00	Rs.6,00,000.00
2.	M/s.Camlin Fine Sciences Ltd.	Dr.Annamma Anil	1 Year	Rs.5,00,000.00	Rs.3,33,333.00	Rs.1,66,667.00
3.	M/s. Abhay Cotex Pvt. Ltd.	Dr. Sandeep Kale	6 months	Rs.7,20,000.00	Rs.4,80,000.00	Rs.2,40,000.00
4.	M/s. Mitsubishi Chemical India Pvt. Ltd.	Dr. Sandeep Kale	6 months	Rs.98,697.00	Rs.65,798.00	Rs.32899.00

C.2014-2015

Sr. No.	Name of the Company	Name of the Faculty	Period of Consultancy	Total Consultancy Amount	Faculty share	ICT share
1.	M/s.Warden International (Agencies) Pvt.Ltd.	Prof. Arvind M.Lali	3 months	Rs.9,00,000.00	Rs.6,00,000.00	Rs.3,00,000.00
2.	M/s.Kanoria Chemicals & Industries Ltd.	Prof. Arvind M.Lali	1 year	Rs.15,00,000.00	Rs.10,00,000.00	Rs.5,00,000.00
3.	M/s.Kanoria Chemicals & Industries Ltd.	Dr.Annamma Anil	1 year	Rs.10,00,000.00	Rs.10,00,000.00	Rs.5,00,000.00
4.	M/s.Catapro Technologies	Dr.Sandeep Kale	7 months	Rs.8,00,000.00	Rs.5,33,333.00	Rs.2,66,667.00

D.2015-2016

Sr. No.	Name of the Company	Name of the Faculty	Period of Consultancy	Total Consultancy Amount	Faculty share	ICT share
1.	M/s.Mitsubishi Chemicals India Pvt. Ltd.	Dr. Sandeep B.Kale	2 months	Rs.75,600.00	Rs.50,400.00	Rs.25,200.00

24. Faculty selected nationally/ internationally to visit other laboratories/ institutions/ Industries in India and abroad

- **Prof A.M.Lali** was selected to be a part of the delegation to US for assessment of New technologies in Alternate Energy – Potential for India
- **Prof A.M.Lali** was selected to be part of the Prof A. M. Lali is part of the Project Review Monitoring Committee (PRMC) for “pre-clarification of molasses to improve the performance of alcoholic fermentation”
- **Prof A. M. Lali** presented The ICT mandate in the Indo Australia Grand challenge project to **Hon’ble Prime Minister Narendra Modi** at Brisbane 2014
- **Dr. Sandeep B. Kale** – Beyond Antibodies, Bangalore under TEQIP Programme
- **Dr. Gunjan Prakash** was selected for Indo-Queensland early career Fellowships 2012 by DBT and Queensland Government.
- **Dr. Annamma A Odaneth** was invited by Prof (Dr.) De-Xin Kong, Centre for Bioinformatics, College of Informatics, Huazhong Agricultural University, Wuhan, China from 22nd April 2015 to 25th April 2015.
- **Prof A.M.Lali and Dr. Annamma Odaneth** were invited to AICTE sponsored summer school at KIT, Kolhapur.
- **Dr. Annamma Odaneth** was selected as a resources person for the workshop on “ bioinformatics and its applications in genomics and Proteomics at Hyderabad on 6-7th October 2015

25. Faculty serving in

- a) National committees b) International committees c) Editorial Boards d) any other (please specify)

Prof. Arvind M. Lali

- Member, core group of scientists in the area of Bioenergy with Ministry of New and Renewable Energy, Government of India.
- Member, Department of Biotechnology, Ministry of S&T of India Task Force in Biofuels, Algal Biotechnology and Bioproducts and Bioprocesses
- Member, Apex Committees, Food and Nutritional Safety, DBT, India.
- Member, Task Force Committees on Biofuels, Bioprocesses and Bio-products, DBT, India.
- Member of the Scientific Advisory Committee (SAC) on Industrial Biotechnology
- Member, Biotech Research Society of India (BRSI)
- Member, Research Council Committee, IMTECH, Chandigarh

Dr. Sandeep Kale

- Member, Indian Pharmaceutical Association (IPA)
- Member, Board of Governor (BOG), UDCT Alumni Association (UAA), 2012-2015
- Member, Biotech Research Society of India (BRSI)
- Dr. PD SETHI Award for Best Paper Publication, 2012

Dr. Annamma A Odaneth

- Member, Biotech Research Society of India (BRSI)
- DBT Nominee, (IBSC) for Advanced Enzyme Technologies Ltd.

Dr. Gunjan Prakash

- Member, Biotech Research Society of India (BRSI)

Dr. Reena Pandit

- Member, Biotech Research Society of India (BRSI)

Dr. Manju Sharma

- Member, Biotech Research Society of India (BRSI)

Dr. Shamlan Reshamwala

- Member, Biotech Research Society of India (BRSI)

26. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs)

- Prof A.M. Lali, Dr. Reena Pandit, Dr. Gunjan Prakash, Dr. Nitin Trivedi and Dr. Chaitali Vira attended a workshop on Advances in Algal Biotechnology held at IIT, Bombay on November 21, 2015
- Dr. Pooja Joshi and Mr. Sandip Kale attended FiCCI-EBTC workshop on The European Patent System and EPO examination practice in the field of Pharmaceuticals and Biotechnology and Commercialization of IP on 5th October 2015.
- Prof A.M. Lali and Dr. Reena Pandit attended Seaweed Cultivation and Breeding and European Seaweed Production and Marketability Courses at Scottish Association for Marine Science conducted by the Scottish Marine Institute, Scotland from 11-14th May 2015.
- Honing Mentoring Skills- A Holistic Approach, From 5-9 May, 2014
- Bioprocessing India, December 2014
- Lecture series entitled “An introduction to metabolic modeling and its applications” Prof. David Fell, Professor of Systems Biology, Dr. Mark Poolman and Dr. Hassan Hartman, Oxford Brookes University, UK was conducted in January 23, 2015
- Dr. Reena Pandit attended the DBT Inter-Ministerial workshop on Quality Feedstock for Biodiesel “Algae: Potential next generation feedstock for biodiesel”, TERI, July 2015
- Dr. Gunjan Prakash, Dr. Aruna Mahesh, Dr. Ashish Misra, Aruna Goenka, Rupali Walia attended Indo- US workshop and Conference in Systems & Synthetic Biology, JNU, 2014
- Dr. Reena Pandit attended the Hands on training and workshop Algal Biotechnology, “Challenges for growing next generation natural solutions for bio-fuels”, Vaze Kelkar College, May 2015.
- Dr. Shamlan Reshawala attended a national seminar on ‘Fungi in Biotechnology’ organized by Department of Botany, SIES College and Mycological Society of India, Mumbai unit, on 28th-29th November 2014.
- Dr. Manju Sharma attended the Workshop for Grand Challenges India Recent Call on “All Children Thriving” under the DBT-BIRAC- BMGF Partnership on 14th November 2014 at ICT, Mumbai.
- Dr. Gunjan Prakash and Dr. Reena Pandit attended Indo-UK Scientific Seminar ‘Prospects and Challenges in Algal Biotechnology’ February 19-21, 2014, IIT-Gauwhati, India

- Dr. Reena Pandit and Dr. Gunjan Prakash attended Indo US workshop on “Cyanobacteria: Molecular Networks to Biofuels”. 16-20th December 2013, Lonavla, India
- Dr. Pamela Jha attended the Workshop on “Concept 2 Commercialization Clone 2 Clinic Culture 2 Chromatography” jointly organized by ICT and GE, Mumbai, May 27th -28th 2015.
- Dr. Pamela Jha attended the Workshop on “Advanced Techniques on Anti- cancer drug evaluation” organized by ACTREC, Navi Mumbai, Nov 3th -7th, 2014.
- Dr. Pamela Jha attended the Workshop on “IPR: A Strategic Tool to Transform Innovations into Technologies” organized by Department of Pharmaceutical Sciences & Technology, Institute of Chemical Technology, Mumbai, Sept 6, 2014.
- Dr. Rupali Walia attended 11th Management Capacity Enhancement Program for TEQIP Institutions at IIM-Kozhikode from 20th to 25th July 2015
- Dr. Rupali Walia attended International Training Programme On Leadership And Career Development for Women Scientists and Technologists (28th Aug -1st Sep 2015, Pune)
- Dr. Annamma Odaneth attended the different seminars and hands on session at “Protein-protein interaction technologies: Bacterial and yeast two-hybrid systems and their applications in combination with mass spectrometry and bioinformatics” from November 17-27, 2015

27. Student projects

- Percentage of students who have done in-house projects including inter-departmental projects **54%**
- Percentage of students doing projects in collaboration with other universities / industry / institute **46%**

28. Awards / recognitions received at the national and international level by Faculty

Prof. Arvind M. Lali

- UAA-ICT Distinguished Alumnus Awards in Academic, 2015.
- Vasvik Award in Biological Sciences & Technology by Vividhlaxi Audyogik Samshodhan Vikas Kendra, Mumbai, 2013
- IICHe Sartorius India Chemcon Distinguished Speaker, 2008
- Fellow, Maharashtra Academy of Sciences, 2007

- IICChE NOCIL award for excellence in design or development of process plant or equipment, 2006
- Several awards for best poster presentations and for best oral presentations
- Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.
- Head, DBT-ICT Centre for Energy Biosciences
- Chairman, TEQIP Industry Institute Interaction Cell
- Chairperson : Research Recognition Committee (Bioprocess Technology)
- Chairperson: Research Recognition Committee (Biological Sciences)

Dr. Sandeep Kale

- Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.
- Chair and Convener, Bioprocessing INDIA 2014 conference, 17-20th December 2014
- Consultant to Catapro Technologies, Nashik, 2014
- Resource person, faculty development program, PSG, Coimbatore

Dr. Annamma A Odaneth

- Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.
- Resource person for seminars conducted at Biomass And Bioenergy Research Center, National Key Laboratory Of Crop Genetic Improvement, Huazhong Agricultural University, Wuhan, Hubei, China on 23rd April 2015
- Resource person for Refresher Course in Biosciences on January 12, 2015 at - 'New Era in Biological Sciences' at the Birla College of Arts, Science and Commerce, Kalyan under the aegis of UGC-Academic Staff College, University of Mumbai.
- Resource person for seminar on "Transforming enzymatic transformations" on Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, UK. on 21st November 2014

Doctoral / post doctoral fellows

Sr. No	Name	Award
1	Akanksha Agarwal	Top 20 finalists in BEST-ABLE, 2015
2	Arjun Singh Bajwa	2nd prize at BEST-ABLE, 2015

3	Sneha Sawant	Best poster award at Accelerating Biology C-DAC, 2014
4	Hiral Shukla	Young Scientist, Bioprocessing India, 2014
5	Shalini Deb	Best poster award at Indo- US workshop and Conference in Systems & Synthetic Biology, JNU, 2014
6	Snehal Agrawal	1 st Bioprocessing India 2014
7	Lucy Nainan	2nd prize for poster at Bioprocessing India, 2014
8	Sneha Sawant	Best poster award at Young Researchers' Conference, 2013
9	Prashant Kumar	1 st Prize best poster at NHBT, Patiala 2012
10	Gautam Degweker	International Conference on Yeast Biology, IIT Mumbai, 10 December 2011 1st Prize for poster
11	Bhavin Patel	Basics of Nanotechnology and its application 2014, CIRCOT, Mumbai. Young Innovator in Bioprocessing - 2014,
12	Sushmita Koley	First prize in poster presentation in Healthcare & Nutrition, Bioprocessing India 2014
13	Snehal Agrawal	Third prize in oral presentation in Healthcare & Nutrition, Bioprocessing India 2014
14.	Febin Pappachan	First prize in poster presentation in Healthcare & Nutrition, Bioprocessing India 2014
15	Mrunal Warke	Won best poster award at 2nd International Indo German Symposium on Green Chemistry and Catalysis for Sustainable Development, ICT, Mumbai, 29th – 31st October 2012.
16	Mrunal Warke	Won second prize at Young Researchers' Conference, ICT, Mumbai, 13th – 14th January 2011.

29. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any

Sr. No.	Title	Date	Source of Funding
1.	Workshop on "Protein-Protein interaction technologies: Bacterial and yeast two hybrid systems & Lecture on "Careers in Biology" by Prof. Peter Uetz, Centre for the Study of Biological Complexity, Virginia Commonwealth University Richmond, VA, USA	17th-28th November 2015	American Society for Microbiology (ASM) & Indo-US Science and Technology Forum (IUSSTF)
2.	DBT-Overseas Fellows and Chairs	10th April 2015.	DBT- Overseas fellowship

	Conclave		
3.	Concept to Commercialization (C2C) Thought Leadership Symposium on Bioprocessing	27th-28th May 2015	Industries
4.	Lecture on “Biological Photoreceptors-Basics and Modern Applications” by “Dr. Wolfgang Gaertner, Dept. of Heterogeneous Reactions, Group Leader of Photoreceptors Research , Max Planck Institute for Chemical Energy Conversion, Muelheim an der Ruhr, Germany	2nd March 2015	DBT-ICT CEB
5.	Lecture on “ An introduction to metabolic modeling & its application” by Prof. David Fell, Prof. Mark Poolman Dept.of Biological & Medical Sciences & Dr. Hassan Hartman from Oxford Brookes University, UK	23 rd & 24 th January 2015	DBT-BBSRC partnership funding
6.	Bioprocessing India 2014	17 th -20 th December 2014	Industries & TEQIP
7.	Workshop for Grand Challenges India Recent Call on “All Children Thriving” under the DBT-BIRAC- BMGF Partnership	14 th November 2014	DBT- BIRAC, Govt. of India
8.	Lecture on “Foreign gene expression in chloroplast & oral delivery of therapeutic proteins” by Dr. Henry Daniell, Dept. of Biochemistry & Translation Research, Penn Dental School, University of Pennsylvania	11 th July 2014	DBT-ICT CEB
9.	Lecture on “The Four Imperatives of Energy & Their Implications in Sustainable Energy Development” by Prof. Dongke Zhang, University of Western Australia	19 th April 2014	DBT-ICT CEB
10.	Indo-US Workshop “Biofuels and Bio-products”	8 th March 2013	DBT-ICT CEB

11.	Kick off meeting for The SuBBSea Macroalgal project at The Orchid Hotel, Mumbai	24th -25th February 2014	BBSRC Funding
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30. Code of ethics for research followed by the departments

- The Centre follows the code of ethics as set by the Institute.

31. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	Applications received	Selected		Pass percentage	
		Male	Female	Male	Female
M.Tech Bioprocess Technology	1030	65	45	100%	100%
Ph.D. Tech. Bioprocess Technology	170	25	8	NA	NA
Ph. D. Science (Biotechnology)	248 (124)	12	12	10%	10%

32. Diversity of students

Name of the Programme (refer to question no. 4)	% of students from the same university	% of students from other universities within the State	% of students from universities outside the State	% of students from other countries
PhD (Sci.) (Biotechnology)	-	82	18	-
PhD (Tech.)	77	6	6	11%
M. Tech BPT	-	69	31	-

33. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.

Category	Students qualified
Civil and defense services	Nil
NET and SET	4
GATE	3
DBT JRF	3

34. Student progression

Student progression	Percentage against enrolled
UG to PG	3%

PG to M.Phil.	Nil
PG to Ph.D.	91%
Ph.D. to Post-Doctoral	33%
Employed	
<input type="checkbox"/> Campus selection	80%
<input type="checkbox"/> Other than campus recruitment	20%
Entrepreneurs	1%

35. Diversity of staff

Percentage of faculty who are graduates	
of the same university	23%
of the same university	23%
from other universities within the State	28%
from universities from other States	33%
from universities outside the country	5%

36. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period- Nil

37. Present details of departmental infrastructural facilities with regard to

a) Library

Students & Faculty of the Department can avail the facilities of the Institute library which is well-equipped with numerous volumes of textbooks, reference books, journals and digital journals.

b) Internet facilities for staff and students

The Institute has WI-FI facility on the campus and the students and staff can access it the same. The Centre also has private WiFi facility that can be used for any invited guests, non-teaching faculties and teaching faculties, all students and trainee personnel at the Centre.

- c) Total number of class rooms - 1
- d) Class rooms with ICT facility - 1
- e) Students' laboratories - 3
- f) Research laboratories - 7

38. List of doctoral, post-doctoral students and Research Associates

- a) from the host institution/university -17
- b) from other institutions/universities - 44

39. Number of post graduate students getting financial assistance from the university.

- At present, the Institute does not provide any financial assistance to the students. However, it does recommend that all post graduate students should be supported by fellowships based on projects/endowments/ donations/IP revenues created by the institute.

40. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

Yes. The Departmental committee made several deliberations. Experts from within the Institute and from other reputed Institutes were consulted. A syllabus committee comprising of faculty members of the Department and external experts was constituted to frame the syllabus.

41. Does the department obtain feedback from

a. Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?

Yes. The feedback from the faculty members is taken by the Head of the Department and discussed in the Department meetings. Suitable changes are made in the teaching and evaluation accordingly.

b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?

Yes, the Head of the Department takes feedback from the students at the end of each semester. Besides this, some of the faculty members also obtain feedback from the students for their individual courses. The Institute has devised a centralised online feedback system for all the courses.

c. alumni and employers on the programmes offered and how does the department utilize the feedback?

The Head of the Department and the faculty members have constant interaction with the alumni and their feedback is taken into account.

42. List the distinguished alumni of the department : Nil

43. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

- Lecture on “Career in Biology” by Prof. Peter Uetz, Centre for the study of Biological Complexity, Virginia Commonwealth University, Richmond, VA, USA.
- Workshop on "Protein-Protein interaction technologies: Bacterial and yeast two hybrid systems” Prof. Peter Uetz, Centre for the study of Biological Complexity, Virginia Commonwealth University, Richmond, VA, USA.
- Lecture on " Bioenergy production from microorganisms : H₂ the future fuel” by Dr. Chitralkha Dasgupta, CSIR-NBRI, Lucknow.
- Lecture on “Waste not waste not. Catalysing a sustainable future (Catalytic routes to convert waste biomass to fuels & chemicals” by Prof. Karen Wilson, Aston University, Birmingham
- Lecture on "Biological Photoreceptors-Basics and Modern Applications" by Dr. Wolfgang Gaertner, Dept of Heterogenous Reactions, Group Leader of Photoreceptor Research, Max Planck Institute for Chemical Energy Conversion, Muelheim an der Ruhr, Germany
- Training Programme to train our research student for isolating protoplast of microalgae by Dr. Vishal Gupta, ICGEB, New Delhi.
- World Intellectual Property Day (26th April 2011)
- BD Flower program organized by BD Biosciences (18th July 2011)
- BIA separation seminar (21st July 2011)
- 2nd National Workshop on Proteomics (24th -26th August 2011)
- 6th National workshop on Preparative and Process Chromatography, 24th to 26th August 2011 at ICT, Mumbai
- Intellectual Property Workshop at ICT (27th February 2012)
- Science day Celebration (28th February 2012)

- Science day celebration on 20th February 2014.
- BBSRC-DBT Kick off meeting was organized on 24th and 25th February 2014.
- Inauguration of “Extension Wing of DBT-ICT CEB by Honorable Union Minister of Science & Technology & Earth Sciences Dr. Harsh Vardhan on 23rd June 2015.

44. List the teaching methods adopted by the faculty for different programmes.

Methods adopted by the faculty

- One to one interaction
- Power Point Presentation
- Continuous Assessment
- Experimental Demonstration
- Case study based teaching

45. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?

- We have a system of continuous assessment under which a series of tests, assignments, quizzes are arranged throughout the semester to monitor the progress of our students and teaching. There is also one formal mid-semester examination. The weightage of continuous assessment in the total marks is 30%, while that of the mid-semester exam is 30% and the end semester exam is 40%.
- We ensure advice from external experts by appointing them as visiting faculty.
- We regularly organize lectures by the experts.
- Students are encouraged to participate in co-curricular activities within and outside the institute.

46. Highlight the participation of students and faculty in extension activities.

Students of Ph. D. & M.Tech. Participate in the inter collegiate events and competition organized by ICT

- Sportsaga (Marathon and Badminton) ICT
- ICT PremierLeague (Cricket) ICT
- Blood Donation Camps
- Empressio (Gobal Business Model Competition)
- ABLE-BEST (Biotech Enterpreneurship Competition)

- TechFest (IIT B)
- Manzar (ICT)
- SAP Simulation workshop (RCF)
- Saanj (ICT Indian Classical and Dance Music)
- Vortex (ICT)

47. Give details of “beyond syllabus scholarly activities” of the department.

The faculty members of the Department are actively involved in various research activities like guiding Ph.D. students, industrial consultancy, executing sponsored projects and writing books and research papers. In addition, they contribute to the activities of other Departments / Universities as members of Ph. D. thesis evaluation and syllabus review committees.

Most of the faculty members of the Department have delivered invited lectures in conferences / seminars / workshops. They are regular resource persons for refresher courses conducted for college teachers.

48. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

- Yes, M.Tech BPT is accredited by AICT MBA from 5 years

49. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.

- Feedstock independent technology for biomass deconstruction to sugars has been developed for lignocellulosic biomass feedstocks (e.g. rice straw, wheat straw, bagasse, empty palm fruit bunches, cotton and castor stalks, tea wastes, corn stover and corn cob).
- The biomass-to-sugars and ethanol platform technology has been transferred to and translated by India Glycols Ltd to a scale of 10 ton per day biomass. The pilot plant is ready for commissioning and would be completely operational by the end of February 2016. Blueprints for higher scale plants are being worked out and are expected to be ready by March 2016.
- Based on biomass derived sugars, other biorefinery technologies have been developed, transferred and translated to pilot scale plants by three Indian industries, which include

production of vanillin, xylitol and cello-oligosaccharides from grain bran; biorefinery for production of organic acids from biomass, and butanol from biomass.

- The work and existing expertise has also been extended to other novel concepts like refining of sugarcane extracts, oil seed biorefinery for production of protein concentrates and isolates, edible oils, phytosterols, isoflavones and other value adds; and platform technology for fatty acids and designer lipid derivatives. All these technologies are adequately protected worldwide.
- Globally competitive technologies have been developed for alcohols, organic acids, and different sugar derivatives including feed, food and functional molecules.
- World class infrastructure and expertise has been established to help Indian and global industrial biotech industry in fields of enzyme engineering & technology; separation and downstream processing; fermentation technology; and synthetic & molecular biology
- The intellectual property based on the platform technology has been protected through two Indian patent applications, 1299/MUM/2009 and 1762 /MUM/2010; these have been filed in thirty six (36) countries. Of these, three (3) patents have been granted in the USA, two (2) in South Africa and one (1) each in Bangladesh and Pakistan.
- The Centre at any time operates more than 10 industry sponsored projects. Ongoing projects include projects from Bacardi-Martini B.V., Netherlands; Wacker Chemie AG, Germany; The Coca Cola Company, USA; Godrej Agrovet Private limited, India; Wipro GE Healthcare Private Limited, India; Privi Biotechnologies Private Limited, India; Kanoria Chemicals & Industries Private Limited, India among others.

50. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strengths

1. Strong cross-disciplinary team – from basic biologies (molecular biology; biochemistry; microbiology; bioinformatics; plant biology) to biochemical engineering to chemical engineering
2. World class infrastructure with sustained investment of more than Rs. 10 cr per year (excluding salaries and fellowships).
3. Dedicated faculty, support staff and senior and junior research fellows closely working on overlapping themes

4. Strong relationship with industry both in India and abroad resulting in all projects being targeted towards industrial translation
5. Rapid generation of Intellectual property resulting in a large number of patents being filed both in India and abroad

Weaknesses

1. Very wide spectrum of projects each covering ground from conceptualization to translation resulting in slow off-take of innovations to industry. A separate wing responsible for translation required.
2. Limited space of expansion of infrastructure to accommodate increasing projects and PhD fellows which not only restricts hiring of trained and senior staff and thus resulting in under-utilization of the opportunities
3. Lack of facilities to demonstrate the bench scale concepts at scale large enough to show the proof-of-concept to interested industry. A dedicated technology translation facility needed.
4. Currently spending about Rs. 15 cr/year, the Centre to require more than Rs. 25 cr/year to sustain its growing capabilities from 2017 onwards
5. Unable to attract joint projects within the Institute with other departments esp. in catalysis and synthetic materials

Opportunities

1. Establishing one of the strongest group in the world in the area of synthetic biology and renewables technology
2. Aiding the government programs such as Clean India and Make-in-India
3. Establish India as one of the significant technology providers in the area of biofuels, bioenergy and renewables as well as in products of secondary agriculture
4. Exploitation of the generated IP to attract revenues exceeding Rs. 25 cr./year from 2017 onwards
5. Generate world class and competitive skilled manpower in the area of industrial biotechnology and renewable chemistry

Threats

1. Inability to regularise the senior and productive scientists of the Centre as regular employees of the Institute which today results in job insecurity and lack of any job associated benefits (all the scientists are today employed in project mode).
2. Loss of highly developed and evolved scientists to competing institutes or industry as a result of point 1 above.
3. Possible inability to sustain and expand the sphere and activity and scope due to possible absence or discontinuation of the current leadership
4. Possible lack of coordination and emergence of unfavourable working atmosphere due to unhealthy competition amongst younger scientists that form the bulk of team of senior scientists
5. Domination of promotion of personal and non-scientific interests over collective welfare

51. Future plans of the department.

The Centre aims to continue the work in an intensive mission mode to develop feedstock neutral technologies for generating value from waste (Municipal solid & liquid waste, agro residues and forest waste). Engineering of microbial/algal systems through optimally designed synthetic biology platforms for this purpose is underway. The utilization of waste streams for fermentative production of biochemicals/biomaterials of industrial relevance catering to the food, feed and fuel sectors forms the core mandate of the Centre.

The products targeted under the waste to value scheme at DBT-ICT Centre are as follows:

- Biofuel: Cellulosic Ethanol, Butanol, Bio-CNG, L-limonene, 2,3 Butanediol
- Food: Sugars (Glucose, Arabinose, Xylose, Cellobiose, Cellooligosaccharides, Xylooligosaccharides, Arabinoxylans), Xylitol, Mannitol, Maltol, Mono Acyl Glycerols (MAG), Di-Acyl Glycerols (DAG), Fatty Acids (FA), Glycerin, Sugar esters, Ascorbyl palmitate
- Feed: Poultry Feed, Aqua Feed
- Biomaterials: Green Polyethylene Ethylene Terephthalate (PET), Polylactic Acid (PLA) Polyethylene Glycol (PEG), Polyricinoleic Acid (PRA).
- Bio-chemicals: Terpenes, Isoflavones, Amino acids, Organic Acids (Acetic acid, lactic acid, propionic acid), Furfural, 5-Hydroxymethyl Furfural, Furan Di-carboxylic Acid, Designer Lipids, Flavor Lactones, Protein Isolates and Concentrates.

LIST OF APPENDIX

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Appendix 1

NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhisham Pitamah Marg
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620, 2436 0654 Telefax: +91 11 2436 0682



File No.28-301/2010-NBA

Date: 07.12.2013

To

The Principal/Director
Institute of Chemical Technology,
Nathalal Parekh Marg, Matunga,
Mumbai-400 019, Maharashtra

Sub: Accreditation status of programmes applied by Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai-400 019, Maharashtra

Dear Sir/ Madam

This has reference to your application dated 22-08-2012 seeking accreditation of National Board of Accreditation to PG Programmes offered by your institution.

2. An Expert Team conducted an on-site evaluation of the programmes during 20-09-2013 to 22-09-2013. The report submitted by the Expert Team was considered by the Engineering Accreditation Evaluation Committee (EAEC) at its meeting held on 31.10.2013. The Sub-Committee of Academic Advisory Committee on Engineering considered the recommendations of EAEC at its meeting held on 06.11.2013. The Executive Committee of the National Board of Accreditation considered the recommendations of the Sub-Committee of Academic Advisory Committee on Engineering at its meeting held on 08.11.2013. The Executive Committee approved the accreditation status of the programmes as given in the table below:

Sl. No	Name of the Programmes (PG)	Accreditation Status	Period of validity w.e.f. 08.11.2013	Remarks
(1)	(2)	(3)	(4)	(5)
i)	M.Tech. Food Engineering and Technology	Accredited	5 years	Accreditation Status granted is valid till the programme has the approval of the Competent Authority or the period given in Col. '4', whichever is earlier.
ii)	M.Tech. Pharmaceutical Sciences and Technology	Accredited	3 years	
iii)	M.Tech. Bioprocess Technology	Accredited	5 years	

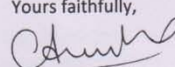
3. The accreditation status awarded to the programmes as indicated in the above table does not imply that the accreditation has been granted to Institute of Chemical Technology, Matunga, Mumbai, Maharashtra as a whole. **As such the institution should nowhere alongwith its name including on its letter head etc., write that it is accredited by NBA because it is programme accreditation and not institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously.** Complete name of the programme(s) accredited, level of programmes (UG or PG as the case may be) and the period of validity of accreditation, as well as the date from which the accreditation is effective, should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

4. The accreditation status of the above programmes is subject to change on periodic review, if needed by the NBA. It is desired that the relevant information in respect of accredited programmes as indicated in the table in paragraph 2, appears on the website and information bulletin of your institution.

Contd/2-

-2-

5. The accreditation status awarded to the programmes as indicated in table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.
6. Copies of the Comprehensive Report submitted by the Chairman of the Expert Team along with the detailed reports submitted by the Expert Team which visited your institution for the programmes evaluated are enclosed for reference and to take necessary action to overcome the shortcomings, if any, pointed out by the Expert Team.
7. If the institution is not satisfied with the decision of NBA, it may appeal within thirty days of receipt of this communication giving reasons for the same and by paying the requisite fee.

Yours faithfully,

(Dr. Anil Kumar Nassa)
Member Secretary

Encls: 1. Copy of Report of Chairman of the Expert Team
2. Copies of Expert Reports of the Expert Team.

Copy to:

1. The Secretary,
Higher & Technical Education & Employment Department
Govt. of Maharashtra, Mantralaya,
Mumbai-400 032
2. The Director
Directorate of Technical Education
Govt. of Maharashtra, 3, Mahapalika Marg
Mumbai-400 001 (MS)
3. Accreditation File
4. Master accreditation file of the State.

NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhasham Pitamah Marg
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620, 2436 0654 Telefax: +91 11 2436 0682



File No. 28-301-2010-NBA

Date: 21/10/2015

To,

The Vice Chancellor
Institute of Chemical Technology
Nathalal Parekh Marg,
Matunga, Mumbai – 400 019
Maharashtra

Subject: Decision on appeal against non accreditation of PG programmes of Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai – 400 019, Maharashtra.

Sir,

This has reference to Appeal dated 03-06-2014 filed by you against the decision of NBA granting non-Accreditation to the PG Engineering programs of your Institute communicated vide NBA's letter of even number dated 07-12-2013.

2. The Appeal was considered by the Appellate Committee of NBA in its meeting held on 18-07-2014. The recommendation of the Appellate Committee was considered by the Sub-Committee of General Council of NBA at its meeting held on 06-08-2014. Based on the decision taken by the Sub-Committee for re-visit to your Institute, an Expert Team conducted on-site evaluation of the programmes during 28th to 30th August, 2015. The Report submitted by the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The competent authority in NBA has approved the accreditation status to the following programmes as given in the table below:

Sl. No.	Name of the Progr (PG)	Basis of Evaluation	Accreditation Status	Period of validity w.e.f. 01.07.2015	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	Dyestuff Technology	2004 Format	Accredited	5 years	Accreditation status granted is valid for the period indicated in col.5 or till the program has the approval of the competent authority, whichever is earlier
2.	Fibers and Textiles Processing Technology		Accredited	5 years	
3.	Polymer Engg. and Technology		Accredited	5 years	
4.	Surface Coating Technology		Accredited	5 years	
5.	Perfumery and Flavour Technology		Accredited	5 years	
6.	Oil, Oleo Chemicals and Surfactants Technology		Accredited	3 years	

3. It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

Contd/...

-2-

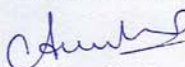
4. The accreditation status awarded to the programs as indicated in the above table does not imply that the accreditation has been granted to Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai – 400 019, Maharashtra as a whole. As such, the Institute should nowhere along with its name including on its letter head etc. write that it is accredited by NBA because it is program accreditation and not Institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously. Complete name of the program(s) accredited, level of programs and the period of validity of accreditation, as well as the date from which the accreditation is effective, should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

5. The accreditation status of the above programs is subject to change on periodic review, if needed by the NBA. It is desired that the relevant information in respect of accredited programs as indicated in the table in paragraph 2, appears on the website and information bulletin of your Institute.

6. The accreditation status awarded to the programs as indicated in table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.

7. Copies of Report of Chairman of the Visiting Team and Evaluators' Reports in respect of the above programmes are also enclosed.

Yours faithfully,


(Dr. Anil Kumar Nassa)
Member Secretary

- Encls:** 1. Copy of Report of Chairman of the Visiting Team.
2. Copies of Expert Reports of the Visiting Team.

Copy to:

1. The Secretary
Higher & Technical Education & Employment Department
Govt. of Maharashtra, Mantralaya,
Mumbai 400 032
2. The Director
Directorate of Technical Education
Govt. of Maharashtra 3, Mahapalika Marg,
Mumbai 400 001
3. Accreditation file
4. Master Accreditation file of the State

Appendix 2

List of Equipments

1. Department of Chemical Engineering

- Gas Chromatograph
- Gas Chromatograph-Mass Spectrometer
- Total Organic Content
- Atomic Absorption Spectrophotometer
- Ultra-Violet Visible Spectrophotometer
- High Performance Liquid Chromatograph
- Liquid Chromatograph Mass Spectrometer
- Gel Permeation Chromatograph
- Inductively Coupled Plasma
- ELSD
- Fluorescence Spectrophotometer
- Fourier Transform Infra-red Spectrophotometer
- FTIR Vacuum
- Analytical Ultra Centrifuge
- BET Surface Area Analyser
- Coulter Count
- Xetasizer
- Scanning Electron Microscope
- Atomic Force Microscope
- X-ray Diffraction Powder\
- Transmission Electron Microscope
- Centrifuges
- Vapour Press Osmometer
- Cyclic Voltammeter
- Air Compressor
- Nitrogen Generators.Liquid Nitrogen Plant
- Chillers
- Distilled Water plants

2. Department of Dyestuff & Intermediates

- Gas Chromatography (GC)
- HPLC
- FTIR
- UV-Visible Spectrophotometer
- Spectrofluorimetry
- Particle size analyzer

- Simultaneous DSC – TGA i.e. Thermo gravimetric analyzer
- 500 MHz NMR (Sanctioned under Prime Minister's Project)

3. Department of Fibers and Textile Processing Technology:

- Lab Scale Coating & Laminating Machine
- Laboratory Fabric Steamer (Loop Ager) Sr. No. I00081112
- BOD -BOD Track-B050C003849
- Contact Angle Analyzer
- Moisture Balance
- Microscope
- Tensile Strength Tester
- Sublimation Fastness Tester
- Air Permeability Tester
- Fabric Yarn Count Balance
- Abrasion Resistance Tester
- Tearing Tester (Strength)
- Bursting Strength Tester
- Fibre finess & Cotton Maturity Tester
- Crimp Tester
- Crock tester
- Spray Tester
- Digital Light Fastness Tester
- Drape -O – Meter
- GSM Count Balance
- Perspirometer
- Crease Recovery Tester
- Stiffness Tester
- Wrinkle Recovery Tester
- Electronic Twist Tester
- Electronic Weighing Balance
- Wash Fastness Tester
- Horizontal Padding Mangle

- Flammability Tester
- UV Transmittance Analyzer –UV-2600
- Differential Thermal Analyser
- Laser Particle Size Analyser
- HPLC
- Atomic Absorption Spectrophotometer
- Universal Tensile Strength Tester
- Electro Kinetic Analyser
- Fourier Transform Infra Red Spectrophotometer
- Differential Scanning Colorimeter
- X-Ray Diffractometer
- Tensiometer
- Nano Particle Size Analyzer
- Q-Sun Xenon Test Chamber
- Static Charge
- Spectra scan CCM
- UV Visible SpectroPhotometer
- Fabric Conductivity
- Digital Printing

4. Department of Food Engineering and Technology

- HPLC & HPTLC
- GC
- GCMS
- Spectrophotometer
- Hunter lab colorimeter
- Supercritical carbon dioxide extraction unit
- Image analyzer
- Brookfield rheometer
- Texturimeter
- Haake viscometer
- Electrophoresis unit

- Protein purification system
- PCR thermal cyclers
- RT-PCR
- Differential Scanning Calorimeter

5. Department of Oils, Oleochemicals & Surfactants

- Gas Chromatograph GE17A.
- Gas Chromatograph-4890D,
- UV-Spectrophotometer,
- Automatic Tensiometer,
- Karl Fischer Titrino,
- HPLC & HPTLC,
- CEC Biodegradability test
- Brookfield Viscometer,
- Pour Point Apparatus,
- Shear Stability Testing Unit,
- Rancimate

6. DBT-ICT Centre for Energy Biosciences

- GC with headspace sampler
- GC with inert XL EI/CI MSD with Triple-Axis Detector
- HPLC systems with UV, DAD, RI, ELSD and CAD detectors
- HPLC-MS/MS (Q-TOF; Triple-Quad; Ion Trap)
- SELDI
- Preparative HPLC
- Moisture Analyzer
- Micro and Analytical balances
- Karl-Fischer Autotitrator
- Fluorescence Microscope
- Infrared Spectrophotometer (FTIR)
- UV-VIS Spectrophotometers
- Complete ELISA station

- Versa Doc and Gel Doc Imaging System
- PCR and RT-PCR
- Gel electrophoresis systems & Image analysis
- Ion Chromatographic system with ECD and BioScan detectors
- Spectrofluorometer
- Nano Drop
- Pulse Amplitude Modulated Fluorimeter (PAM)
- Olympus Microscope Model IX51 with camera and software
- Continuous Chromatography System
- Simulated Moving Bed lab cum pilot scale high pressure Multicolumn System
- Off-gas analyzer for the fermentation systems
- Gradient PCR
- Thermal Activity Monitor
- Anaerobic work stations
- Elemental analyzer
- Microbial Identification System
- Phenotype Microarray System
- Particle size analyzer

7. Department of Polymer and Surface Engineering

- Particle Size analyser Nanoplus-3
- Thermo Gravimetric Analysis (TGA)
- FTIR
- UV Visible Spectrometer
- Contact Angle Measurement,
- LCR meter
- Humidity Chamber
- Gel Permeation Chromatography
- Hardness Rocker Bubble Model
- Rotovisco RT 10 and Accessories
- Taber Abrasion Tester
- Digital Viscometer

- pH Meter
- Flexibility & Adhesion Tester
- Hardness Tester
- Crypto Meter with K=004 & K=008
- DIGITAL OPACITY REFLECTO METER
- Differential Scouring Calorimeter
- Microsheen Digital Meter
- Rheomax with Accessories
- Universal Impact Testing Machine
- Digital Weighing Balance
- C-Mold Plastic Flow Simulation Analysis Software
- Gas Chromatograph
- HDT, Vicat along with accessories
- Melt Flow Indexer
- Moisture analyzer
- Surface tensiometer
- XRD
- Optical microscope
- DMTA

Department of Pharmaceutical Sciences & Technology

- Proton NMR
- GC & GC-MS
- FTIR
- HPLC
- UV spectrometer
- DSC
- Fluorimeter
- Ozoniser,
- Polarimeter
- CADD lab with sophisticated hardwares and softwares for docking
- homology modelling

- 3D-QSAR and other modules
- Particle size Analyser

8. Department of Chemistry:

- High Performance Liquid Chromatograph
- Gas Chromatograph x 4
- Gas Chromatograph-Mass Spectrometer with Direct Injection Port x 2
- Fourier Transform Infrared Spectrophotometer
- Ultra-Violet Visible Spectrophotometer
- Elemental Analyser
- Scanning Electron Microscope
- X-ray Diffraction Powder
- Cyclic Voltammeter
- TPR/TPO
- Viscometer
- DSC-TGA
- Polarimeter

Synthesis and Processing equipments

1. Department of Dyestuff & Intermediates

- Glass assemblies
- Ice bath
- Oven
- Rotary Evaporators
- Autoclaves
- Pressure Reactor
- Parr hydrogenators
- Microwave
- Lyophilizer / Freeze dryer
- Julabo
- Analytical mill and homogenizer
- Sand mill
- Planetary ball mill

- Mars mill
- Kneader
- Ball mill
- Automatic vibroshaker
- Automatic pigment Mueller
- Automatic draw down assembly

2. Department of Fibers and Textile Processing Technology

- HTHP Beaker Dyeing Machine
- Water Bath
- Digital Water Bath
- Overhead Stirrer
- Soft Over Flow Dyeing Machine
- Steamer
- Muffle Furnace
- Warping Machine
- Weaving Machine
- Laboratory Continuous Dyeing Machine
- Incubator shaker
- Vertical Gel Electrophoresis system
- COD tester- Reactor and photometer
- High Speed Homogenizer
- Ultrasound bath
- Drying Setting & Curing Chamber
- Rota Dyer
- Pressure Sample Dyeing Machine
- Electrospinning
- Fermentor
- Scan-o-Lite Color Matching Booth
- Garment Dyeing Machine
- HTHP Dyeing Machine
- Dryer-Hydro Centrifuge

- Melt Spinning Machine
- Melt Flow Indexer
- Winch Dyeing Machine

3. Department of Food Engineering and Technology

- Extruders,
- Retort processing unit,
- Blast and fluidized freezer,
- Pasta making machine,
- Modified atmosphere packaging,
- Dough sheeter,
- tray and IR dryer,
- fluidized bed dryer,
- fermentor,
- high pressure homogenizer,
- ultrasonic processor,
- RO and ultrafiltration unit,
- spray dryer
- supercritical extraction unit
- twin screw extruder

4. Department of Oils, Oleochemicals & Surfactants

- Spray Dryer LSD-48
- Lab Pervaporation Unit
- Glycerol Evaporation pilot plant
- Toilet Soap Plant,
- Refining and Filtration Plant
- High Pressure Autoclave,
- Short Path Distillation Unit
- Batch Solvent Extraction Plant
- Turg-O-Tometer
- Rotary Vacuum Evaporator

5. DBT-ICT Centre for Energy Biosciences

- Nano spray for MS-QTOF System
- Mini-raceway ponds
- Accelerated Solvent Extraction Systems
- Algal Stirred Photo Bioreactor
- 1000L and 5000L Raceway Ponds
- Parr/High pressure reactors
- Microwave reactor systems
- Continuous microwave reactor system
- 3L to 10L Bioreactors
- Parallel 6x1L Bioreactor Assembly
- Multiple micro-Fermenter assembly

6. Department of Polymer and Surface Engineering

- Twin screw extruder
- Dia Compression Platens
- Injection Moulding Machine
- Impact Mould for Winder 1 Ounce Machine
- Extruder Blown Film Assembly
- Roll 2 Nill with Drive Motor Transmission side Gears & Controls 6'X15"
- UV Curing Machine
- Triple 4X8 Roll Mill
- Powder Coating Outfit Code Elect.
- PD Pump
- Overhead Stirrer
- Laboratory Mini Sand Mills
- Laboratory Autoclave
- Corona Treater
- Rota evaporator
- Muffle Furnace
- Dissolution apparatus

- Microwave Reactor
- Humidity Chamber

7. Department of Pharmaceutical Sciences & Technology

- Film coater
- Extrusion spheroniser unit
- Transdermal permeation apparatus
- Freeze driers
- High Pressure Homogenizers
- Tablet machines and Dissolution apparatus
- Sonicators
- Fluidised bed coater cum processors
- Dryers
- Multi purpose processors for solid and liquid formulations
- Facilities for wet and dry granulations
- Facilities for bioadhesion testing
- Facilities for size reduction
- Liquid filling machines
- Facilities for processing of semi-solid dosage forms
- ICH stability testing facilities
- BIOPAC
- Elisa readers
- Aggregometer
- Non-invasive blood pressure measuring instrument
- Microbiology facility and cell culture facility
- incubator shaker
- CO2 incubator
- Inverted microscope
- fluorescence microscope
- high speed cold centrifuges and freezers

Appendix 3

List of Best Teachers Awards

AWARDS AND PRIZES FOR THE YEAR 2011-2012

1. Prof. R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem.Engg.)7,500/-
Professor A.W. Patwardhan
2. Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem.Engg.)7,500/-
Professor A.B. Pandit
3. Best Teacher Award (Second Year B. Pharm.)
Professor P.D. Amin
4. Best Teacher Award (Final Year B. Pharm.)
Professor P.R. Vavia
5. Best Teacher Award (Second Year B.Tech.)
Professor Anand V. Patwadhan
6. Best Teacher Award (Final Year B.Tech.)
Dr. V.H. Dalvi

AWARDS AND PRIZES FOR THE YEAR 2012-2013

1. Prof. R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem. Engg.) 7,500/-
Professor S.S. Bhagwat
2. Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem. Engg.) 7,500/-
Professor S.S. Bhagwat
3. Best Teacher Award (Second Year B. Pharm.)
Mr. V.Y. Sane
4. Best Teacher Award (Final Year B. Pharm.)
Professor M.S. Degani
5. Best Teacher Award (Second Year B. Tech.)

Professor P.M. Bhate & Professor S.S. Sathaye

6. Best Teacher Award (Final Year B. Tech.)

Professor A.B. Pandit

7. Best Teacher Award (Professor D.V. Rege–AFST Mumbai Chapter–2011 Endowment)
25,000/-

Professor Rekha Singhal and Professor Laxmi Ananthanarayan

8. CMP Endowment Best Teacher
10,000/-

Dr. Smita Jadhav

AWARDS AND PRIZES FOR THE YEAR 2013-2014

1. Prof. R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem.Engg.)7,500/-

Dr. Ashwin W. Patwardhan

2. Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem.Engg.)7,500/-

Professor A.B. Pandit

3. Best Teacher Award (Second Year B. Pharm.)

Dr. Sadhana Sathaye

4. Best Teacher Award (Final Year B. Pharm.)

Professor P.R. Vavia

5. Best Teacher Award (Second Year B.Tech.)

Professor S.D. Samant

6. Best Teacher Award (Final Year B.Tech.)

Dr. P.D. Vaidya

7. Best Teacher Award (Professor D.V. Rege–AFST Mumbai Chapter–2011 Endowment)
25,000/-

Dr. U.S. Annapure

AWARDS AND PRIZES FOR THE YEAR 2014-2015

1. Prof. R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem.Engg.)
7,500/-

Professor S.S. Bhagwat
2. Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem.Engg.)
7,500/-

Professor A.V. Patwardhan
3. Best Teacher Award (Second Year B. Pharm.)

Professor P.D. Amin
4. Best Teacher Award (Final Year B. Pharm.)

Professor M. S. Degani
5. Best Teacher Award (Second Year B.Tech.)

Professor A.V. Patwardhan
6. Best Teacher Award (Final Year B.Tech.)

Professor A.B. Pandit
7. Professor D.V. Rege–AFST Mumbai Chapter–2011 Endowment for Best Teacher Award

Dr. Laxmi Ananthanarayan
25,000/-
8. CMP Endowment Best Teacher Award
10,000/-

Dr. Vijaykumar A.

Appendix 4**Travel Grant to faculty**

Year	Name of the Faculty	Department	Amt. Sanction	Date of the Conference
2012-13 (2.5.2012)	Professor A. B. Pandit	Department of Chemical Engineering	30,000/-	The European Sonochemists Society to be held, during July 1-5, 2012 at Lviv , Ukraine ESS- 13.
	Dr. P.D. Vaidya	Department of Chemical Engineering	30,000/-	Not received the amt.
	Dr. Anagha S. Sabnis	Department of Polymer and Surface Engineering	30,000/-	The Global Conference on Academic Research Conference to be held, during 8th June-11th June, 2012 at Kuala Lumpur, Malaysia.
2012-13 (8.10.2012)	Shri. Siddharth Kasthurirangan	Department of Physics	42,000/-	The 16 th International Conference on the Physics of Highly Charged Ions (HCI 2012) to be held at the University of Heidelberg, Germany, from 2-7 September, 2012
2013-2014 (12.8.2013)	Professor A. R. Juvekar	Department of Pharmaceutical Sciences and Technology	80,000/-	<p>1. Invited for Poster (5) Presentation of research paper entitled</p> <p>a) Bioactivity guided fractionation of crude extracts of two indian spices for their potential to use as nutraceuticals on breast cancer</p> <p>b) Evaluation of anti-angiogenic and in vitro cytotoxic activity on cancer cells of an indian spice plant.</p> <p>c) In-vitro, in-vivo anti-inflammatory evaluation of <i>mimusops elengi</i> leaves extracts.</p> <p>d) Preliminary evaluation of an anti-diabetic polyherbal</p>

				<p>formulation</p> <p>e) Evaluation of cardioprotective potential of <i>murraya koeingii</i> leaves extract</p> <p>1. organized by Institute of Nutrition and Functional Foods to be held during 5-8 October 2013 at Quebec, Canada</p> <p>AND</p> <p>2. Invited for Poster (2) Presentation of research paper entitled</p> <p>a) "Evaluation of anti-parkinson activity of methanolic extract of Hyoscyamus Niger seeds in stereotaxically induced rotenone rat modal "</p> <p>b) B. "Acute and Sub-acute oral toxicity study of L-dopa and Hyoscine hydrobromide in combination in rodents"</p> <p>organized by World Parkinson Coalition to be held during 1- 4 October 2013 at Montreal, Canada</p>
	Professor P.R. Vavia	Department of Pharmaceutical Sciences and Technology	80,000/-	Invited for Oral Presentation of research paper entitled "Folic acid anchored cyclodextrin based nanosponges: promising approach for active targeting to tumor" organized by European cyclodextrin society to be held during 2-4 October 2013 at Antalya, Turkey.
2013-2014 (28.3.2014)	Professor V. B. Patravale	Department of Pharmaceutical Sciences and Technology	70,000/-	Invited for Oral Presentation of research paper entitled "Nanosized Lipid Carriers: Potential In Malaria Prevention And Therapy" organized by The University of

				Queensland to be held during 6 to 10 July, 2014 at Brisbane, Australia.
	Dr. N. Sekar	Department of Dyestuff Technology	45,000/-	Invited for Oral Presentation of research paper entitled “Red Emitting Coumarin: Design and Synthesis” organized by University of Mauritius in collaboration with RSC and Springer to be held during 23 to 27 June, 2014 at University of Mauritius.
2014-2015 (26.8.2014)	Dr. Shalini S. Arya	Department of Food Engineering and Technology	28,500/-	Invited for Oral Presentation of research paper entitled “Functional and antioxidative activity of Ziziphus jujuba protein hydrolysates and peptides” organized by CAS-TWAS Centre of Excellence for Biotechnology (CoEBio) & Institute of Microbiology Chinese Academy of Sciences to be held during 15 October -17 October, 2014 at Beijing 100101, China.
	Dr. V. R. Gaval	Department of General Engineering	40,000/-	Invited for Oral Presentation of research paper entitled “Application of DFMEA in metal to plastic replacement in automotive industry.” organized by International Scientific Academy of Engineering and Technology to be held during 29-30th September, 2014 at Phuket (Thiland)
	Dr. Anant R. Kapadi	Department of Chemistry	30,000/-	Invited for Poster Presentation of research paper entitled “New water soluble Pd-Imidate complexes Catalysts for efficient modification of nucleosides in neat water” organized by Dechema e.v. to be held during 19-22 October 2014 Dresden, Germany.

	Dr. S. S. Sathaye	Department of Pharmaceutical Sciences and Technology	30,000/-	Invited for Dynamic Poster Presentation of research paper entitled “Neuroprotective effect of Metformin in MPTP induced Parkinsonism in mice” organized by Society of Neuroscience (International) to be held during 15-19, November,2014 Walter E. Washington Convention Center, 1121 14th Street NW, Suite 1010 City: Washington (DC) Country: USA.
2014-2015 (26.3.2015)	Dr. P. R. Gogate	Department of Chemical Engineering	30,000/-	Invited for one Oral Presentation and One for Poster Presentation as Two research papers 1. entitled “Ultrasound- assisted bioethanol production from waste paper” as (Oral Presentation) AND 2. entitled “Combination of cavitation and oxidation processes for the treatment of industrial wastewater” as (Poster presentation) organized by 7 th European Meeting on Chemical Industry and Environment (EMChIE 2015) will be held during June 10-12, 2015 in Universitat Rovira i Virgili, Tarragona, at Spain
	Professor S. S. Lele	Department of Food Engineering and Technology	42000/-	Invited for Oral Presentation of research paper entitled “Gourd Family Vegetables: a Potential Candidate for Nutraceutical RTS Fruit Beverages” organized by Pacific Ag Research, USA and Microbiologists Society, India to be held Nov.17-18, 2015 at Florida, USA.
	Professor P. A. Mahanwar	Department of Polymer and Surface Engineering	30,000/-	Invited for Oral Presentation of research paper entitled “Effect of Coupling agent on propewtries of Henequen Microfiber (NF) filled

				High Density Polyethylene (HDPE) composites” organized by WASET (World Academia of Science, Engineering and Technology) to be held May 18-19, 2015 at Paris, France.
	Dr. R.S. N. Sahai	Department of General Engineering	25,000/-	Invited for Oral Presentation of research paper entitled “STUDY OF MECHANICAL PROPERTIES OF WHEAT STRAW FIBER REINFORCED POLYSTYRENE COMPOSITES” organized by IIER to be held 4th April, 2015 at Bangkok, Thailand
2015-2016 (15.9.2015)	Professor M. D. Teli	Department of Fibres and Textile Processing Technology	60,500/-	Invited for Oral Presentation of research paper entitled “Functional modification of coir fibre for enhanced oil absorbency” organized by Federation of Asian Professional Textile Associations, Deakin University and Australia’s Technical Textiles and Non Wovens Association to be held from 3rd to 6th November 2015 at Geelong, Australia.

Appendix 5**Summer Training Supported by TEQIP**

Sr. No.	Name of the student	Department	Research project	Project Guide
1	Ankita Mukhtyar	Department of Chemical Technology	Solubility of soap in hydrotrope solution	Prof.V.G.Gaikar
2	Deep Sunil Chhichhia	Department of Chemical Technology	Ultrasound assisted antisolvent crystallization of benzoic acid and review paper on cooling crystallization	Prof. P.R.Gogate
3	Divya Arvind Boricha	Department of Chemical Technology	Simulation of unsteady state balances for batch processes	Dr. S.S. Jogwar
4	Jay R. Shah	Department of Chemical Technology	Particle agglomeration in ultrasound	Prof. AB Pandit
5	Ankit Deepak Kanthe	Department of Chemical Technology	Synthesis of multifunctional catalysts for green synthesis	PROF. G. D. YADAV
6	Maahir Arora	Department of Chemical Technology	Study of the rate of CO ₂ absorption in amine using a stirred reactor	Prof.P.D.Vaidya
7	Mihir Gada	Department of Chemical Technology	Preparation, characterization and evaluation of chitosan-gelatin biosponge	Professor B. N. Thorat
8	Mustafa Bootwala	Department of Chemical Technology	Preparation, characterization and evaluation of chitosan-gelatin biosponge	Professor B. N. Thorat
9	Nikunj S Atmapoojya	Department of Chemical Technology	Synthesis and sintering of indium tin oxid eusing different combustion fuels in combustion method	Prof. S M Sontakke
10	Pinaki M. Ranadive	Department of Chemical Technology	Fitting of the non-random two liquid (nrtl) model to systems of acetic acid with tributyl phosphate and n-dodecane	Dr. A.W. Patwardhan
11	Pratik N. Gardare	Department of Chemical Technology	Removal of cyanogens from cassava by various pre-treatments	Dr.B.N. Thorat, Mr. Vaibhav Tidke
12	Kapil N. Gavali	Department of Chemical Technology	Removal of cyanogens from cassava by various pre-treatments	Dr.B.N. Thorat, Mr. Vaibhav Tidke
13	Kasturi Tulsidas Sarang	Department of Chemical Technology	Pvdf membrane preparation and	Dr. P R Nemade

			characterization	
14	Rishabh Ashit Shah	Department of Chemical Technology	Preparation and optimization of micron sized chitosan beads	Dr. Ratnesh D. Jain
15	Rituja B. Patil	Department of Chemical Technology	Solubility of soap in hydrotrope solution	Prof. V.G.Gaikar
16	Ronak Hiren Upadhyay	Department of Chemical Technology	Ultrasonic assisted extraction of watermelon seed proteins	Dr. V.K. Rathod
17	Sanika Avinash Nijasure.	Department of Chemical Technology	Preparation and separation of glyceryl monoricinoleate and ricinoleic acid.	Prof. A.M.Lali, Dr.Annamma Anil
18	Sanjana Vijay Karpe	Department of Chemical Technology	Study of cascade engineered reactions	PROF. G. D. YADAV
19	Sanket Madhukar Kadam	Department of Chemical Technology	Fitting of non random two liquid theory (nrtl) to tbp-dd-water and tbp-dd-acetic acid systems	Dr. Ashwin W. Patwardhan
20	Shaaz Khatib	Department of Chemical Technology	Synthesis and analysis of sugar based surfactant	DR. S.S. BHAGWAT
21	Shilpa Balnath Ghoderao	Department of Chemical Technology	Study of osmolality using vapour pressure osmometer	Dr. V.H. Dalvi
22	Sonal Gajanan Nayak	Department of Chemical Technology	Docking studies on chitosan oligosaccharide	DR. RATNESH JAIN
23	Abhinav Prakash Ashtekar	Department of Chemical Technology	Simulation of unsteady state balances for batch processes	Dr. S. S. Jogwar
24	Shalaka K. Kale	Department of Chemical Technology	Removal of ni ⁺⁺ ions from waste water using micelle enhanced ultrafiltration	Mrs. K.V. Marathe,
25	Swapnil Suresh Patil	Department of Chemical Technology	Water disinfection - analysis and development	Prof. A.B. Pandit
26	Tejal V. Sawant	Department of Chemical Technology	Wastewater treatment by cavitation	Dr. P.R.Gogate
27	Ujval Shah	Department of Chemical Technology	Studies on enzymatic extraction of ferulic acid from rice bran	Dr. V.K. Rathod
28	Siddharth Golani	Department of Chemical Technology	Vapour liquid equilibrium	Dr. P.D.Vaidya
29	Vibhav Dabadghao	Department of Chemical Technology	Glucose-xylose separation	Prof. A. M. Lali
30	Yash Merchant	Department of Chemical Technology	Development of novel hydrogen fuel cell anode catalyst	Dr. Neetu Jha
31	Chinmay Vivek Kurambhatti	Department of Chemical Technology	Effect of uv & ultrasound on resveratrol content in	Dr.S.M.Sontakke

			grapes	
32	Girija Bodhankar	Department of Chemical Technology	Extractive desalination	Dr. V. H. Dalvi
33	Ankita Mukhtyar	Department of Chemical Technology	Solubility of soap in hydrotrope solution	Prof.V.G.Gaikar
34	Vaibhav Vinaykumar Jain	Department of Foods Engineering & Technology	Standardisation and evaluation of jamun smoothie for bioactive constituents and organoleptic quality	Dr. Shalini Arya
35	Ajinkya Arun Atkare	Department of Foods Engineering & Technology	Changes in bioactive constituents in spray dried jamun powder on storage	Dr. Shalini Arya
36	Sawali Suhas Navare	Department of Foods Engineering & Technology	Changes in bioactive constituents in jamun leather on storage	Dr. Shalini Arya
37	Poornima Vijayan	Department of Foods Engineering & Technology	Study on low g.i bhakari	Dr. Shalini Arya
38	Rohit Digambar Suroshe	Department of Foods Engineering & Technology	Processing treatment on red lentils (masoor daal)	Dr. Uday Annapure
39	Shounak Joshi	Department of Foods Engineering & Technology	Rheological properties of tamarind kernel powder,extraction and rheological properties of tamarind seed polysaccharide	Dr. Uday Annapure
40	Malhar Kadam	Department of Foods Engineering & Technology	Effect of the emulsifier sophorolipid (patented by ict) on bread quality and storage	Dr. Uday Annapure
41	Jayesh H. Satija	Department of General Engineering	Fractionation and mobility of iron in red mud at various ph range	Dr. S. S. Sarode & Dr. P. R. Nemade
42	Anurag Hanwate	Department of General Engineering	Extraction of lead from red mud at various ph range	Dr. S. S. Sarode & Dr. P. R. Nemade
43	Akul D. Deshmukh	Department of General Engineering	Use of industrial waste red mud in fibre reinforced concrete	Dr. S. S. Sarode & Dr. P. R. Nemade
44	Vaibahv Nikhar	Department of Oils, Oleochemicals and Surfactants Technology	Study on the synthesis of gemini surfactant based on renewable source.	Dr.Amit Pratap
45	Saurabh Junnarkar	Department of Oils, Oleochemicals and Surfactants	Study on the synthesis of biolubricant based on renewable source.	Dr.Amit Pratap
46	Aishwarya Bannagare			

47	Kaustubh Rane	Technology		
48	Prashant Soni			
49	Kalyani Gawahale	Department of Oils, Oleochemicals and Surfactants Technology	Synthesis of biosurfactants and analysis	Dr.Amit Pratap
50	Gayatri Pahapale			
51	Sneha Koche	Department of Oils, Oleochemicals and Surfactants Technology	Synthesis of liquid detergent from acid oil	Dr.Amit Pratap
52	Tarun Naresh Bhatia	Department of Pharmaceutical Sciences & Technology	In – vitro antioxidant activity of isolated phytoconstituents, alone, in combination & formulations	Dr. Sadhana Sathaye
53	Sonal Kasare			
54	Maitrey Oka	Department of Pharmaceutical Sciences & Technology	Analysis of physicochemical properties of molecules having anti-tubercular activity	Prof. M. S. Degani
55	Vimisha Dharamdasani	Department of Pharmaceutical Sciences & Technology	Development of poly(d, l-lactide-co-glycolide) nanoparticles for protein delivery	Dr. Prajakta Dandekar Jain
56	Shruti Ashok Dumbre	Department of Pharmaceutical Sciences & Technology	Preparation of polymeric nanoparticles with low molecular weight chitosan and thiamine pyrophosphate(tpp)	Dr. Prajakta Dandekar Jain
57	Sanika Nitin Inamdar			
58	Aishwarya Ajay Patil	Department of Pharmaceutical Sciences & Technology	Preparation & characterization of in situ gelling intranasal mucoadhesive microemulsion of risperidone	Prof. P. V. Devarajan
59	Sonalika Arup Bhattacharjee	Department of Pharmaceutical Sciences & Technology	Preparation and characterization of an ophthalmic microemulsion gel of azithromycin	Prof. P. V. Devarajan
60	Neil Chavan	Department of Polymer Science & Technology	Synthesis of nanocomposites of copolymer of aniline & orthoanisidine & tio ₂	Dr. S. T. Mhaske
61	Foram Prajapati	Department of Polymer Science & Technology	Synthesis of nanocomposites of orthoanisidine & pyrrole & zno	Dr. S. T. Mhaske
62	Kiran Kundaram	Department of Polymer Science &	Coreshell of baso ₄ & tio ₂ nanoparticles	Dr. S. T. Mhaske

		Technology		
63	Ankit Mishra	Department of Polymer Science & Technology	Impact modification of ptt	Mr. A. R. Rao
64	Shantanu Nikam	Department of Surface Coating Technology	Synthesis of polymers using arget atrp	Mr. A. R. Rao
65	Kowshikraman Sethuraman	Department of Surface Coating Technology	Projection screens synthesis	Mr. A. R. Rao
66	Neha Belhekar	Department of Surface Coating Technology	Aget atrp using bpmoda ligand	Mr. A. R. Rao
67	Gaurav Ahuja	Department of Surface Coating Technology	Synthesis of nanozinc oxide	Prof. R. N. Jagtap
68	Vaibhav Edlabadkar			

Appendix 6**National & International Conferences organized and Scientist/Scholars****Academic Year 2011-2012**

Sr. No.	Date	Fellowship	Distinguished Speaker/Affiliation	Title of Lecture
1	October 1, 2011	Foundation day alkyl amines – uict foundation day speaker endowment lecture	Dr. Sanyog Jain, Associate Professor, Centre for Pharmaceutical Nanotechnology, Dept. of Pharm-[aceutics, National Institute of Ph-armacological Education and Research (NIPER), SAS Nagar (Mohali), Punjab-160062	Design, Synthesis and Biological Evaluation of Novel Multifunctional Carbon Nanotubes Based “Smart” Drug Delivery Platform
2	March 17, 2012	Themis chemicals ict diamond jubilee distinguished fellow in pharmaceutical science – lecture	Professor Dr. P. S. Ramani, Senior Consultant Neurospinal Surgeon, Lilavati Hospital & Research Centre, Mumbai. INDIA	From Mixture to Mutation - The March of Medicine
3	April 27, 2012	Professor S. K. Pradhan endowment lectures	Dr. Susheel Durani, Professor, Department of Chemistry IIT Bombay, Powai, Mumbai – 400076	Chemical Interactions and Biomolecular Ontogeny: The Puzzles of Stereochemistry and Symmetry in Protein Structure
4	April 27, 2012	Professor S. K. Pradhan endowment lectures	Professor Goverdhan Mehta, FNA, FRS National Research Professor Lilly Grantee and Jubilant - Bhartia Chair, School of Chemistry, University of Hyderabad, Hyderabad 500046	Lecture 1: Celebrating Chemistry for a Better World: Lessons and Inspiration from Organic synthesis Lecture 2: Harnessing Synergy Between Natural Products, Organic Synthesis and Drug Discovery for Human Wellbeing
5	March 29, 2012	Professor (Mrs) M.R. Baichwal distinguished fellow in pharmaceutical	Dr. Shobhona Sharma Professor, Department of Biological Sciences, TIFR, Mumbai	Malaria Infected Red Cells: Can We Target Them

		sciences" lecture,		
6	March 29, 2012	The Cipla distinguished fellow in pharmaceutical science" lecture,	Dr. Vijay Walame Consulting Homoeopath Lokmanya Hospital, Chinchwad, Pune	Homeopathy: An Emerging Pharmaceutical Science
7	30th April 2012	Professor V. M. Kulkarni endowment lecture,	Prof (Dr). Kanjaksha Ghosh Director, National Institute of Immunohaematology, Mumbai	Pharmacotherapy of Sickle Cell Anaemia: Why Indian Pharmaceutical Industry is Silent
8	May 11, 2012	The Professor B. D. Tilak visiting fellowship lecture,	Professor P. Thyagarajan Pro - Chancellor (Research), Sri Ramachandra University, Chennai	Herbal Drugs as Block Busters: The Way Forward

Academic Year 2012-2013

Sl. No.	Date of Lecture	Fellowship	Distinguished Speaker / Affiliation	Title of Lecture
1	11/05/2012	Professor B.D. Tilak Endowment Lecture	Dr. S.P. Thyagarajan Pro-Chancellor (Research) Professor of Eminence and Dean (Research) Sri Ramachandra University, Chennai	Herbal Drugs as Block Busters: The Way Forward
2	27/04/2012	Professor S.K. Pradhan Endowment Lecture	Dr. Susheel Durani Department of Chemistry Indian Institute of Technology Bombay, Powai, Mumbai	Chemical Interactions and Biomolecular Ontogeny: The Puzzles of Stereochemistry and Symmetry in Protein Structure
3	15/04/2013	Professor S.K. Pradhan Endowment Lecture	Dr. Krishna N. Ganesh Prof. & Director Indian Institute of Science Education and Research (IISER)	Lecture 1: Making Drugs out of Nucleic Acids Lecture 2: Cationic Peptides and Peptide Nucleic Acids as Cell Penetrating Agents

4	18/04/2013	Pharma-UGC-CAS Visiting Fellowship Lecture	Prof. Anant Paradkar Director of the Centre for Pharmaceutical Engineering Science, University of Bradford, UK	Cocrystals and Polymorphs :innovation in technologies
5	04/01/2013	Dept. of Sci. & Tech.	Dr. B. S. Shankarnarayna Rao Professor, Dept of Neurophysiology of NIMHANS, Bangalore	Ever changing brain: Neural Plasticity and Recovery of Functions in Neurological and Psychiatric disorders
6	22/04/2013	Themis Chemicals UICT Diamond Jubilee	Dr. Kuppaswamy Nagarajan Corporate Advisor, Hikal R & D Centre	New drug development; Indian achievements thus far
7	17/03/2012	Themis Chemicals UICT Diamond Jubilee	Dr. P.S. Ramani Senior consultant Neuro & Spinal Surgeon to: I. Lilavati Hospital & Research Centre II. Shushrusha Citizens Co-op Hospital	From Mixture to Mutation
8	22/04/2013	Professor V.M. Kulkarni Endowment Lecture	Dr. Vilas Dhanukar Vice-President, Dr. Reddy's Laboratories Ltd	Process Chemistry R&D in generic and NCE development
9	30/04/2012	Professor V.M. Kulkarni Endowment Lecture	Dr. Kanjaksha Ghosh Director, National Institute of Immunohaematology (ICMR), Mumbai	Pharmacotherapy of sickle cell anaemia: why Indian pharmaceutical industry is silent
10	10/04/2013	CIPLA Endowment Lecture	Dr. M.G.R. Rajan Head, Radiation Medicine Centre, Biomedical group, Bhabha Atomic Research Center Professor	Positron Emitting Radio-pharmaceuticals
11	29/03/2012	CIPLA Endowment Lecture	Dr. Vijay Walame Consulting Homeopath, Lokmanya	Homoeopathy: An emerging

			Hospital, Chichwad, Pune	pharmaceutical science
12	29/01/2013	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Pankaj B. Desai Professor of Pharmacokinetics and Biopharmaceutics Director, Drug Development Graduate Programme The James L. Winkle College of Pharmacy University of Cincinnati. Ohio, USA	Preclinical and Clinical Investigation of the Pharmacokinetic Interactions of Anticancer Drugs
13	30/04/2012	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Rajiv Sarin Director, ACTREC, Mumbai	Genetics of Cancer Predisposition and Cancer Pharmacology
14	29/03/2012	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Shobhona Sharma Professor, Dept of Biological Sciences, Tata Institute of Fundamental Research Mumbai	Malaria infected red cells: can we target them?
15	22/12/2012	Dr. (Mrs.) M.R. Baichwal Endowment Lecture	Dr. Lohit Tutupalli Director of Pharmacy and Chairman, Pharmacy & Therapeutics Committee San Joaquin County Mental Hospital and Health Services, Stockton, CA.	Role of Pharmacy in Psychiatry

Academic Year 2013-14

Sr. No	Date of Lecture	Fellowship	Distinguished speaker/Affiliation	Title of Lecture
1	05/03/ 2014	Dr. R.S Baichwal Seminar	Professor Dhiren R Thakker Ferguson distinguished professor and associate dean for Entrepreneurial Development and Global Engagement, UNC Eschelmann School of	Creation of Intellectual Property and Entrepreneurism: An Integral Part of Academic Pursuit in 21st Century

			Pharmacy, UNC, USA	
2	05/03/ 2014	Dr. R.S Baichwal Seminar	SundeepDugar , PhD President/CE O/Founder SphaeraPharm a, Singapore	Academy as an engine of Innovation: From the perspective of a Biotech CEO
3	05/03/ 2014	Dr. R.SBaichw al Seminar	KasimMookht iar, PhD Chief Scientific Officer and EVP, Drug Discovery, Advinus Therapeutics Ltd, India	Intellectual Property Creation in Indian Technology Intensive institutions: Been there-done it or new horizons?
4	28/03/ 2014	Dep. of Sci. & Tech.	Professor Dr. Ganesh Thakur Northeastern University, Boston, USA	Tuning Endocannabinoid System for Therapeutic gain
5	11/02/ 2014	Themis Chemicals visiting fellowship	Dr. AbhayHarsulk ar Professor and Head, Pharmaceutica l Biotechnology , Poona College of Pharmacy, BVU, Pune	Nutrigenomics or nutrient-gene interaction with reference to disease pathologies.
6	28/01/ 2014	Professor S.K. Pradhan Endowmen t Lecture	Dr. G. Mugesh Professor, Department of Inorganic & Physical Chemistry, Indian Institute of Science	1. Synthesis and Biological activity of reduced graphene oxide nanosheets 2. Antioxidant nanoxymes
7	23/10/ 2013	Dr. (Mrs.) M.R. Baichwal Endowmen	Amit Misra Associate Professor, Principal	Inhalable particles targeting drugs affecting host responses to tuberculosis

		t Lecture	Scientist and In-charge; Pharmaceuticals Division CSIR, Lucknow	
8	10/09/ 2013	Cipla distinguished visiting fellowship	Theresa M. Allen, Professor of Pharmacology and Adjunct Professor of Oncology, University of Alberta	Development of liposomal nanoparticles for anticancer applications

Sr. No	Date of Lecture	Fellowship	Distinguished speaker/Affiliation	Title of Lecture
1	July 24, 2014	“The Cipla Distinguished Fellow In Pharmaceutical Science” Lecture 2014	SundeepDugar President/CEO/ Founder	Multi Drug Resistant Tuberculosis
2	November 28, 2014	Themis Medicare UICT Diamond Jubilee Distinguished Fellow in Pharmaceutical Science	Professor Donald Abraham Alfred and Francis Burger Emeritus Professor of Medicinal Chemistry and Biological Chemistry, and Emeritus Director of the Institute for Structural Biology and Drug Discovery at Virginia Commonwealth University, USA	Structural Biology and Drug Discovery: Tackling an Impossible Disease
3	Feb 4, 2015	(UGC CAS) Under the Aegis of TEQIP Industry- Institute Interaction	Mr. BidhanDasgupta, Senior Area Sales Manager,BD Biosciences, India.	Basics and application of Flow cytometry in pharmaceutical research
4	Feb 4, 2015	(UGC CAS) Under the Aegis ofTEQIP Industry- Institute Interaction	Mr. Mahendra B Chaudhari, General Manager, Shimadzu (Asia Pacific) Pvt Ltd, Singapore	Recent Advances in Material Characterization Techniques

5	February 23, 2015	Prof. M. R. Baichwal endowment lecture	Professor Bhupinder Singh Bhoop M.Pharm, Ph.D., D St Chairman, University Institute of Pharmaceutical Sciences, Panjab University, Chandigarh.	QBD-Oriented Development of Lipid-Based Nanostructured Systems with Improved Biopharmaceutical Attributes
6	February 23, 2015	Professor S. K. Pradhan Endowment Lectures	Dr. Jyoti Chattopadhyaya, Professor of Bioorganic Chemistry, Chair of Chemical Biology Program, Institute of Cell & Molecular Biology, Uppsala University Biomedical Centre, Sweden,	Intramolecular forces that self-organize DNA and RNA- Solo vis-à-vis Tango.
				Design and Targeting of siRNA - Delivery, Stability versus off-target effect : the prowess of Chemical concerto
7	March 27, 2015	Prof. M. R. Baichwal Endowment Lecture	Dr A. H. Bandivdekar Senior Deputy Director (Scientist F) Head, Department of Biochemistry and Virology, National Institute for Research in Reproductive Health (ICMR), Mumbai	Immunological Approaches for Male Fertility Control : Synthetic Peptide of 8okda HSA

8	March 27, 2015	Prof. M. R. Baichwal Endowment Lecture	Dr. N. H. Balasinor Ph.D.Scientist "E" Head, Neuroendocrinology Division National Institute for Research in Reproductive Health (ICMR), Mumbai	Laser Confocal Microscopy In Biomedical Research
9	April 7, 201	Prof. V. M. Kulkarni Endowment Lectures	Prof.M.R.Yadav HeadPharmacy Department Faculty of Technology and Engineering .The M.S. University of Baroda, Vadodara.	Perils and Pleasures of a Medicinal Chemist
10	April 7, 201	Prof. V. M. Kulkarni Endowment Lectures	Dr.SudiptaMaiti Professor, Department of Chemical Sciences, Tata Institute of Fundamental Research, Mumbai, India	Looking for the Achilles' heels of the Alzheimer's Amyloid beta peptide
11	April29, 2015	UGC-CAS II	Dr.Bansi Lal Honorary Adjunct Professor Department of Pharmaceutical Sciences & Technology, Institute of Chemical Technology	Echinocandins as Antifungals WHY ARE THEY SPECIAL- [PART-1]

12	April30, 2015	UGC-CAS II	Dr.Bansi Lal Honorary Adjunct Professor Department of Pharmaceutical Sciences & Technology, Institute of Chemical Technology	Echinocandins as Antifungals WHY ARE THEY SPECIAL- [PART-2]
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Sr. No.	Name of the Speaker	Affiliation	Area of Specialization
1	Prof. Michael Doherty	University of California, Santa Barbara	Crystallization
2	Prof. Joachim Ulrich	University of Halle	Crystallization
3	Dr. Manfrd Stepanski	Sulzer Chemtech AG	Crystallization
4	Dr. Ing. Patrick Frohberg	University of Halle	Crystallization
5	Prof. Herald Anlauf	Karlsruhe Institute of Technology, Germany	Filtration
6	Dr. Reinhard Bott & Uli Herold	Bokela GmbH, Germany	Filtration
7	Dr. Mark Boehlmann	Siebtechnik's Laboratory	Filtration
8	Mr. Martin Grantham	Dr. M Filter Technology Pvt. Ltd.	Filtration
9	Prof. Arun S. Majumdar	McGill University	Drying
10	Mr. Santoshi Suwa	TSK Europe	Drying
11	Mr. Mark Kragting	Tema Proves BV; Netherlands	Drying
12	Dr. Sachin Jangam	National University of Singapore	Drying








<p>TECHNOLOGY INNOVATION ON DYES AND PIGMENTS-2015</p> <p>Held on 29th December 2015</p>	
Introduction about book (Author)	Dr. G. S. Shankarling
<p>Release of book on dyes by Prof M.M. Sharma, authored by Dr. Ram Sabnis</p>	
<p>Introduction of Prof. M. M. Sharma by Prof. P. M. Bhate</p>	
Chief Guest Address	Prof. M. M. Sharma
Vote of Thanks	Mr. V. Y. Sane
<p><i>Tea Break</i></p>	
<p>Session II (10:35-13:40)</p>	
Introduction of Prof. D. W. Rangnekar by Dr. Ram Sabnis	
<p>Address by Prof. D. W. Rangnekar</p>	
<p>I.1 Dr. Bhavya Modi, <i>Proprietor, Anee Dyestuffs Corporation.</i></p> <p>Topic: <i>Acid Dyes - Applicative Innovations.</i></p>	
<p>I.2 Dr. Pankaj Desai, <i>Head-R and D, Colou rtex Industries Private Limited</i></p> <p>Topic: <i>New Challenges In Disperse Dyes.</i></p>	
<p>I.3 Mr. Vijay Bhujle, <i>GVS Cibatech Pvt .Ltd.</i></p> <p>Topic: <i>Process safety measures during manufacture of Dyes and pigment</i></p>	
<p><i>Lunch break</i></p>	
<p>Session III (14:30-17:15)</p>	
<p>I.4 Mr. Dilip Udas, <i>Director Ultraconserve Pvt. Ltd.</i></p> <p>Topic: <i>Challenges In The Technology Of Intermediates</i></p>	
<p>I.5 Dr. Mehul Parikh, <i>Chief Production Officer, Alps Chemicals Pvt. Ltd.</i></p> <p>Topic: <i>Current scenario and finding of Industries in Pigments and Pigmentory Properties</i></p>	

<p>I.6 Mr. Manoj Saptarshi, G. M. – Prod. Mgmt & Business Devp. (Colors Div) Atul Ltd.</p> <p>Topic: Sustainable solutions in vat dyes</p>
<p>I.7 Mr. P. S. Kulkarni, G. M. Marketing (Asia Pacific), JAY Chemical Industries Ltd.</p> <p>Topic: Reactive dyes- Innovations and Challenges</p>
<p>Vote of Thanks by Convener</p>

Our Speakers

	<p>Dr. Ranjeet Ajmani</p> <p>PlasmaGen BioSciences Pvt. Ltd., Bangalore</p> <p>Plasma Fractionation Industry in India : Challenges and Opportunities</p>
	<p>Prof. Ajoy Velayudhan</p> <p>University College London, UK</p> <p>Fundamental and empirical models in bioprocessing</p>
	<p>Prof. Anurag S. Rathore</p> <p>IIT, Delhi</p> <p>Implementation of QbD for Biopharmaceuticals: Tools and Case Studies</p>
	<p>Dr. Manjula Das</p> <p>Bioneds, Bangalore</p> <p>Functional characterization of biotherapeutics</p>
	<p>Dr. Sabyasachi Goswami</p> <p>Umetrics, Singapore</p> <p>Design of Experiment (DOE) and Multivariate Data Analysis (MVDA) as fundamentals blocks of Process understanding, Optimizing, Predictive monitoring and control</p>

	<p>Dr. Rajender Singh Sangwan CIAB (formerly BPU), Mohali Biochemical Origami of Repertoire of Phytochemicals of a Chemical Class into Working Model of Metabolic Pathways for Functional Genomics Applications</p>
	<p>Prof. K. S. Laddha ICT, Mumbai Phytochemical Reference Substances – Extraction, Isolation and Applications in Herbal Analysis</p>
	<p>Prof. Rekha Singhal ICT, Mumbai Extraction of forskolin from <i>Coleus forskohlii</i> - some new approaches</p>
	<p>Dr. M. Ali Haider IIT-Delhi, New Delhi Combined Bio and Chemo-Catalytic Conversion of Biomass Derived 2-Pyrones into Chemicals</p>
	<p>Mr. Prashant Kumar ICT, Mumbai Downstream Processing of Plastifiable Proteins from Cereal Grains</p>
	<p>Dr. Sanjeev Katti Reliance Research & Development Centre, Navi Mumbai A Perspective on Biotech Successes and Challenges</p>
	<p>Prof. V.G. Gaikar ICT, Mumbai Process Intensification for Extraction of Health Care Products using Hydrotrophy and Microwave Irradiation</p>









	<p>Dr. Ranjeet Utikar Curtin University, Australia Modeling and Multiobjective Optimization of Continuous Liquid Solid Circulating Fluidized Bed for Protein Purification</p>
	<p>Dr. Amit Jain BITS, Pilani A Decentralized Control Configuration Selection for a Continuous Bioreactor System: A Relative Response Array Approach</p>
	<p>Dr. Arijit Nath Jadavpur University, West Bengal Synthesis of Bioactive Peptide from Mustard Oil Cake by Membrane Associated Bioreactor – Modelling and Simulation</p>
	<p>Prof. K.V. Venkatesh IIT- Bombay, Mumbai Effect of transcriptional regulators on anaerobic growth of <i>Escherichia coli</i></p>
	<p>Dr. Debashish Das IIT, Guwahati Multi-nutrient mechanistic model for microalgal growth under nutrient sufficient and starved conditions</p>
	<p>Dr. Shams Yazdani ICGEB, New Delhi Engineering Enzymes and Microbes for Second Generation Biofuels</p>
	<p>Dr. Pramod Wangikar IIT Bombay, Mumbai Oscillations in metabolism and gene expression in cyanobacteria</p>
	<p>Prof. J. S. Pai PFNDAI, India Applications of Biotechnology in Food & Nutrition</p>





	<p>Dr. K. S. M. S. Raghavarao CSIR-CFTRI, Mysore Problems and Prospects of Downstream Processing- a Few Case Studies</p>
	<p>Dr. Anjali Parasnis TERI, WRC, Navi Mumbai P.R.O.T.E.I.N.*- A building block to tackle malnourishment</p>
	<p>Dr. Anuradha Majumdar Bombay College of Pharmacy, Mumbai Nutraceuticals in Metabolic Syndrome: Focus on Resveratrol</p>
	<p>Mr. Abhiram Seth Aquaagri Processing Pvt Ltd., New Delhi Bio-processing: Some Learning's based on seaweed processing</p>
	<p>Dr. D. K. Tuli DBT-IOC centre for Advanced Bio-Energy Research Indian Oil, R&D centre, Faridabad Lignocellulosic ethanol-need for establishing cellulase production capabilities</p>
	<p>Dr. Reena Pandit ICT, Mumbai Algae : Growing Natural Solutions for Biofuels</p>
	<p>Dr. Rupali Walia ICT, Mumbai An Alternative Microbial Platform for Metabolite Production -The Quiescent cell model</p>
	<p>Dr. Smriti Shrivastava Amity University, Noida</p>

	Bioethanol from agricultural waste
	<p>Dr. C. R. K. Reddy CSIR-CSMCRI, Bhavnagar Marine Macroalgal Biorefinery: Mining of Biomass for Energy and Commodity Chemical Products</p>
	<p>Dr. A. J. Varma NCL, Pune New Developments in Lignocellulose, Cellulose, and Nanocellulose : Biofuels to Bioproducts Using Advanced Nanotechnology</p>
	<p>Prof. Arvind M. Lali ICT, Mumbai Sugars to Chemicals: Agri-industry of the Future</p>
	<p>Dr. Shrikant Survase Reliance Industries Ltd, Mumbai, India Butanol Production from Lignocellulosics Biomass</p>
	<p>Dr. S.V. Rama Rao ICAR-Directorate of Poultry Research, Hyderabad Utilization of Dehulled Cotton Seed Meal as a Protein Source in Poultry Diets</p>
	<p>Dr. U. S. Annapure ICT, Mumbai Enzymatic pre-treatment for extrusion processing</p>
	<p>Prof. P. U. Krishnaraj IABT, UAS, Dharwad Metagenomics of Probiotics and health benefits</p>

	<p>Prof. Neetin Desai Amity University, Mumbai Nutrigenomics</p>
	<p>Dr. Mayumi Kiyono-Simobe Mitsubishi Chemical Corporation, Japan Adsorption Characteristics of Newly Developed Protein A Media MabSpeed for Affinity chromatography</p>
	<p>Dr. S.T. Mhaske ICT, Mumbai Kafirin: Bio-Packaging Material</p>
	<p>Dr. Sandip Bankar BVP, Pune Bioprocessing of Poly-ϵ-lysine (ϵ-PL)</p>
	<p>Dr. Pratap Bade Syngene International Ltd., Bangalore Chromatographic Resin Recycling Studies to Define Useful Resin Lifespan: Mandates and Technical Aspects</p>
	<p>Prof. Claire Komives San Jose State University, USA New tools for bioprocess scale down</p>
	<p>Dr. Sumant Chaubey BBPL-Biologicals and Biologics, India Challenges in Process Development, Scale-up & Manufacturing of Low Volume-High Value fermentation based API Molecules</p>
	<p>Prof. Ramakrishna Sen IIT, Kharagpur Green Microbial Surfactants for Potential Commercial, Environmental and Therapeutic Applications: A Case Study on Process and Product Development</p>

	<p>Dr. Abhishek Mule ICT, Mumbai High Cell Density Fermentation- Going Beyond Traditional Productivities</p>
	<p>Prof. Pradeep Vavia ICT, Mumbai Innovation in Drug Delivery Systems</p>
	<p>Dr. Parag Saudagar Zytext Biotech, Mumbai Bacillus spore as probiotics</p>
	<p>Prof. Jyoti Jadhav Shivaji University, Kolhapur Fungal Chitinases and their Biotechnological Applications</p>
	<p>Dr. Ratnesh Jain ICT, Mumbai Re-exploring Chitosan for delivery of Biopharmaceuticals</p>
	<p>Dr. R. B. N. Prasad CSIR-IICT, Hyderabad Bioprocessing Approaches for the Production of Designer Fats and Nutraceuticals from Vegetable Oils</p>
	<p>Dr. M. M. Krishna US Soybean Export Council, India Soy Foods for Sustainable Protein Nutrition</p>
	<p>Mr. Prabodh Halde Global Regulatory Marico Ltd, Mumbai Oil industry trends and regulatory challenges</p>

	<p>Dr. Amit Pratap ICT, Mumbai Waste cooking/ frying oil as precursor for fermentative Production of Biosurfactants</p>
	<p>Dr. Taslimarif Saiyed C-CAMP, Bangalore C-CAMP's efforts in building high-end technology platforms and biologics characterization capabilities</p>
	<p>Dr. Ravindra Gudihal Agilent Technologies, India Agilent's Workflow Solutions for Comprehensive Characterization of Monoclonal Antibodies</p>
	<p>Dr. Kaushik Chakraborty CSIR-IGIB, New Delhi Chemical chaperones and their role in protein stabilization</p>
	<p>Dr. Sandeep Kale ICT, Mumbai Fundamental investigations of protein stabilization using specific additives</p>
	<p>Prof. Inder Pal Singh NIPER, Mohali Triterpenes and Flavan-3-ols from <i>Potentilla fulgens</i></p>
	<p>Prof. B. N. Thorat ICT, Mumbai Drying Technologies for Biotech and Food Products.</p>
	<p>Dr. Parag Gogate ICT, Mumbai Intensification of recovery of natural products using ultrasonic irradiation</p>

	<p>Dr. Pramod B. Shinde Ewha Womans University, Korea Engineered Biosynthesis of Glycosylated Derivatives of Macrolide Antibiotics</p>
	<p>Dr. R. K. Saxena University of Delhi- South Campus Bacterial Cellulose: A Futuristic Golden Biopolymer with Immense Industrial Applications.</p>
	<p>Prof. Mukesh Doble IIT, Madras Process Development and Applications of Cyclic Glucans</p>
	<p>Dr. Mugdha C. Gadgil NCL, Pune Glycosylation of IgG : Interaction Between Mn²⁺ and Glucose Availability.</p>
	<p>Mr. Ankur Bhatnagar Biocon, Bnagalore Platform Process Will Give Platform Product: Can We Afford it?</p>
	<p>Dr. Himanshu Gadgil INTAS Biopharmaceuticals Ltd, Ahmedabad Six Blind Men and a Beast: Co-operative Analytics holds the key for Product driven Process Development.</p>
	<p>Dr. Ipsita Roy NIPER-Mohali Some Strategies to Overexpress Heterologous Proteins in Soluble Form</p>
	<p>Kedar Gokhale Lupin Biotech, Pune Impact of Donnon Effect on Excipient Concentration</p>

	<p>Vijesh Kumar IIT, Delhi Avoiding antibody aggregation during processing: Establishing hold times</p>
	<p>Mr. Sachin Joshi GE Healthcare Developing efficient and effective chromatographic process for biomolecules</p>
	<p>Swati Vyas ICT, Mumbai Point of Care Immunochromatographic Testing for Brucellosis Detection</p>
	<p>Prof. Purnananda Guptasarma IISER, Mohali Extreme Engineering of Structure , Stability and Activity in Glucanases</p>
	<p>Dr. Rajeev Sukumaran Centre for Biofuels, CSIR-NIIST, Trivandrum Enzymes for Biomass Hydrolysis: From Moldy Bran to Enzyme Cocktails and Fungal Expression of Heterologous Proteins</p>
	<p>Dr. Indrakant Borkar Biocon-BMSQ, Bangalore Structure, Function and Activity of Cross-linked Large Multi-subunit Enzyme-Nanotube conjugates</p>
	<p>Dr. N. Vigeshwaran CIRCOT, Mumbai Nanocellulose: Energy Efficient Production & Its Application</p>
	<p>Dr. Sanjeev Chadrayan ICT, Mumbai [NiFe]-hydrogenase: Complex Enzyme for a Simple Reaction</p>

	<p>Prof. Wei Shou Hu University of Minnesota, USA Cell Culture Engineering in the Post-Genomic Era</p>
	<p>Prof. Guhan Jayaraman IIT, Madras Redox engineering for enhanced production of biofuels and biopolymers</p>
	<p>Dr. Ashish Misra ICT, Mumbai Elucidating Metabolic Landscapes by Modelling</p>
	<p>Dr. Sarika Mehra IIT, Bombay Systems Biology of Antibiotic Resistance: Mechanism, Evolution and Treatment Strategies</p>
	<p>Dr. Gunjan Prakash ICT, Mumbai Engineering Microalgae for Fuels and Chemicals: Opportunities and Challenges</p>
	<p>Mr. Billy Asir Beckman Coulter Solutions to simplify Synthetic Biology workflows by “Beckman Coulter Automation”</p>

Appendix 7

DR. RAMESH Y. MANTRI DISTINGUISHED MASTERS FELLOWSHIP IN PERFUMERY AND FLAVOUR TECHNOLOGY

“Dr. Ramesh Y. Mantri Distinguished Masters Fellowship” was established by Smt. Pushpal Ramesh Mantri on 22nd January 2015 in K.V. Auditorium, ICT in memory of her husband Late Dr. Ramesh Y. Mantri who bid for his heavenly abode on 18th March 2014. The foremost objective to institute the fellowship is to honor and commemorate Dr. Mantri’s significant contribution over the years to Perfumery and Flavor field. The fellowship is also aimed at providing encouragement and facility to pursue higher study in Perfumery and Flavor at ICT and generating high standard perfumery and flavor technologists in future..

ABOUT DR. RAMESH Y. MANTRI IN BRIEF:

Dr. Mantri earned his Ph. D. in 1974 from ICT (formerly known as UDCT, Mumbai). Soon after in 1976, he took over “BEETA CHEMICALS”, a sick unit. With his technical competence, hard work and business acumen, he converted “BEETA CHEMICALS” into a profitable and a significant perfumery and flavor company manufacturing niche and quality products for reputed Indian and transnational companies. He created fragrance “Urvashi” which was hugely acclaimed in France, the Mecca of Perfumes. His technical competence was acknowledged world over and he was conferred upon, besides many other, the coveted & rare “STATUE OF PERFUMER” award by Henkel, Germany in 1987

His achievements were recognized by the Government of India, and the Ministry of Industry conferred on him the National Award for Excellence in Quality (SSI sector). in 1996-97. He also served as a UNIDO expert in Perfumes and Flavors. The Indian Perfumery and Flavor Industry (FAFAI) also acknowledged his contribution to the industry and technical capability and elected him its President in 1993-95. He strived to improve the status of Indian perfumery & flavors industry and succeeded in getting due recognition for the industry from the Government of India. As an icing on the cake, in recognition of his outstanding contribution to the field of Perfumery and Flavors, ICT, his alma mater, bestowed upon him the most coveted and prestigious “Distinguished Alumnus” award in 2001. His passionate attachment with ICT was visible from his consistent help to the ICT research students across departments by providing important samples required for their studies, free of cost. Being an accomplished and passionate perfumer and flavorist himself and always accessible to students, he was a popular friend, philosopher and guide for them. He was architect and pioneer of the Masters Course (M. Tech.) in Perfumery and Flavors at ICT, started in 1990. The course is unique in its profile covering advanced and vital aspects of perfumery, flavors, chemical engineering, chemistry and other requisite areas of learning making it hugely useful. To commemorate Dr. Mantri’s huge contribution to the field of perfumery and flavours, and to perpetuate his remembrance, Smt. Pushal Mantri has established an endowment which earns interest on a sustainable basis to support Master students at ICT in Perfumery and Flavour technology on perennial basis. The fellowship is sought to serve a catalytic role in

useful research and technological enhancement in perfumery and flavors field in service of mankind.

ABOUT THE FELLOWSHIP

Duration of fellowship:

The tenure of the fellowship will be till such time the fellow pursues the cited Master's degree at ICT Mumbai, however the maximum tenure of the fellowship will be of 24 months. The fellowship will be effective from the date on which the Fellow joins ICT as a M.Tech. Perfumery student.

Amount of fellowship:

In the initial stage the fellowship will be Rs. 10,000/- per month with Rs. 15,000/- as a contingency per annum.

Number of fellowships:

The fellowship will be awarded to two students from each year of Masters P and F tech. Total granted fellows for two years course will be 4. (Two candidates from each year as stated above)

Selection Criteria:

The fellowship will be open to all citizens of the world. Preference will be given to Indian nationals on equal opportunity basis.

The selection of the fellows will be done primarily on the basis of merit and in special cases at the discretion of the selection committee.

Appendix 8
Department of Chemical Engineering

Sr. No.	Principle Investigator	Sponsor	Project Investigator	Total Amount (Grant) (in lakhs)	Duration	Project title
1	Bhagwat S S	IGCAR	Bhagwat S S	25 Lakhs	3 years	Alternative methods/solvents for dissolution: (a) Methane sulphonic acid derivatives for dissolutions & electrowinning, (b) Sonochemical method for dissolution of ThO ₂
		NTPC	Bhagwat S S	71 Lakhs	4 years	Improvement of Turbine Cycle Heat Rate Through Multi-component Ammonia Liquor Absorption Engine (MALAE)
		BRNS	Bhagwat S S	16 Lakhs	2 years	Development of foam formulation
		Rajiv Gandhi Commission for Science & Technology (RGCST)	Bhagwat S S	266.8 Lakhs	4 years	Cold storage for Post harvest preservation of fruits & vegetables using Solar & Biomethane Heat Based Refrigeration
		British Petroleum International	Bhagwat S S	54 Lakhs	4 years	Refrigeration utilizing waste heat as energy inputs
		Aditya Birla Group	Bhagwat S S	1 Lakhs	1 year	Polymer Surface wettability
		IPCA	Bhagwat S S	--	6 Months	Vapor-Liquid equilibrium thermodynamics
		FDC	Bhagwat S S			Interfacial properties of eye drop formulations
		Tri-Diagonal Solutions (TDS)	Bhagwat S S	8 Lakhs		Forming and aeration
		Amines and plasticizers	Bhagwat S S	2.53 lakh	3 years	Surface studies on lean amine solvents from gas treating units
2	Dalvi V H	Ministry of Food Processing Industries	Dalvi V H	25.00 Lakh	3 years	Development of a Continuous Rice Cooker

3	Gaikar V G	Department of Atomic Energy / Knowledge Based Engineering Centre	Gaikar V G	84.4 Lakhs	5yrs	Design of solvent and extractant by molecular modeling for heavy metals
		Department of Atomic Energy / Knowledge Based Engineering Centre	Gaikar V G	48.4 Lakhs		Experimental determination of H ₂ -I ₂ -HI-H ₂ SO ₄ vapor-liquid equilibria
		Indira Gandhi Centre for Atomic Research (IGCAR)	Gaikar V G	24.725 Lakhs		Studies in Runaway reactions
		Indira Gandhi Centre for Atomic Research (IGCAR)	Gaikar V G	24.725 Lakhs		Studies on steam pyrolysis of a CHON Amide as a waste solvent management method
		Indo-European Collaboration, Department of Science and Technology (DST-AMCOS)	Gaikar V G	79.88 Lakhs	2008-2012	Advanced materials as CO ₂ removers: A computational study of CO ₂ sorption Thermodynamics and kinetics
		Hindustan Unilever Ltd, Mumbai	Gaikar V G	Rs. 45 lakhs	Four years	Thermodynamics of Solubility of Tea components
		Hindustan Unilever Ltd, Mumbai	Gaikar V G	Rs. 10.5 lakhs	One year	Solubility of Ca-Stearate in water
4	Gogate P R	Department of Science and Technology, Govt. Of India, New Delhi	Gogate P R	10.2 Lakhs	2010-2012	Development of novel treatment strategies for treatment of water containing pesticides
		University Grants Commission, New Delhi	Gogate P R	8.6 Lakhs	2011-2013	Process Intensification of emulsification and atomization
		Unilever, Bangalore	Gogate P R	11.1 Lakhs	July 2013 to July 2014	Wastewater treatment

5	Jain R D	DAE-BRNS	Jain R D	16.95 Lakhs	Three years (2013-2016)	Polysaccharide Based Nanocarriers for Improved Therapy of Systemic Fungal Infections
		DST Nanomission 2014-2017	Jain R D	282 Lakhs	Three years (2014-2017)	Development and evaluation of siRNA loaded nanomedicine in computational and cellular Models
6	Jha N	DST	Jha N	35 lakh	5 yrs	Development of electrocatalyst for fuel cell
7	Lali A M	Bio-Rad laboratories USA	Lali A M	Rs. 22.50 lakhs	2008-2011	BioRad-MUICT Initiative on Adsorptive and Chromatographic Separations for Biotech and Allied Industry
		Pepsico Inc, USA	Lali A M	Rs. 98.17 lakhs	2008-2011	Assisted Extraction, Isolation and Scalable Chromatographic Purification & Biotransformation of Active Components from Plants/Herbs
		General Mills	Lali A M	\$45,000	2010-2011	Value Added Products from Milling By-products
		General Mills	Lali A M	\$45,000	2010-2011	Value added Products from GMI Vegetable Waste streams
		Chemtrols India Ltd	Lali A M	40.00 lakhs	2010-2012	Development of process for production of Lactic acid and Poly-lactic Acid
		DST, India	Lali A M	1210 Lakhs	2014-2016	Green Enzymatic fat-splitting technology for production of fatty acids and acyl glycerol
		DBT, India	Lali A M	1800 Lakhs	2013-2018	DBT-ICT Centre for energy biosciences: New and extension proposals
		DBT-BBSRC	Lali A M	806 Lakhs	2013-2016	Engineering enzymes, bacteria and bioconversion processes for advanced biofuels from waste grain straw

8	Marathe K V	Department of Science and Technology, Govt. of India, New Delhi	Marathe K V	17 lakhs	2011-2013	Removal of flouride from concentrated stream obtained after membrane separation treatment of ground water
9	Mathpati C S	DAE	Mathpati C S	80 Lakhs		Thermal hydraulic studies related to coolants for new generation reactors
		TEQIP, CoE-PI	Mathpati C S	16 Lakhs	1 year	Design aspects of two opposed jet microreactor: Experimental and computational fluid dyanamics
10	Nemade P R	RCF Ltd	Nemade P R	Rs 12.26 L	Jul 2012- Jun 2013	Development of Quality Water-resistant Gypsum Plaster
		BIRAC-Bill and Melinda Gates Foundation	Nemade P R	Rs 25.00 L	1 year	Hygienic Water-Free Toilet
		SERB: Scheme for Young Scientists	Nemade P R	Rs 22.40 L	3 years	Development of Polymerizable Ionic Liquid Membranes for Gas Separations
11	Pandit A B	Department of Atomic Energy under the scheme of Knowledge based Engineering	Pandit A B	88.9 Lakhs	2005 – 2011	Characterization of cavitation phenomena and its applications in solid-liquid mass transfer operations
		Jawaharlal Nehru Center for Science Society – UGC	Pandit A B	25 Lakhs	2009 – 2012	Development of novel cavitation based treatment schemes for water disinfections
		Department of Science and Technology under India Australia Fund for Scientific and Technological cooperation	Pandit A B	9 Lakhs	2007 – 2010	Advanced oxidation processes for the degradation of organic pollutants in aqueous environment
		(IGCAR)	Pandit A B	23.82 Lakhs	2008 – 2012	Design of Sodium Cold-Trap
		(IGCAR)	Pandit A B	23.8 Lakhs	2008 – 2012	Preparation of Mono-Disperse MOX Sphere

		(IGCAR)	Pandit A B	24.8 Lakhs		Role of Cavitation and its Prevention in Sodium Pump
		(IGCAR)	Pandit A B	21.5 Lakhs	2008 – 2012	Scale up of MOX Precipitation
		(IGCAR)	Pandit A B	38 Lakhs	2015-2018	Characterization of the regeneration process for liquid sodium cold trap in secondary system of fast
		BPCL	Pandit A B	25 Lakhs	2011-2014	Degradation of Industrial Wastewater
		Hindustan Unilever Ltd., Bangalore	Pandit A B	75 Lakhs	2013-2018	LDH Formation and Converging Diverging Cavitating
12	Patwardhan A V	Department of Atomic Energy	Patwardhan A V			Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane (HFSLM)
		Department of Atomic Energy	Patwardhan A V	Rs 72.4 Lakhs		"Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membranes"
13	Patwardhan A W	IGCAR	Patwardhan A W	Rs24.2 Lakhs	2007 – 2011	"Thermal Mixer Design"
		IGCAR	Patwardhan A W	Rs 24.9 Lakhs		"Flow Distribution in Inlet Plenum of Steam Generators"
14	Rathod V K	IGCAR	Rathod V K	24.57 Lakhs	2008 - 2011	Removal of dissolved TBP fro aqueous stream
		DST/FAST TRACK	Rathod V K	19.00 Lakh	2008 - 2011	Biodiesel from Waste Frying oil
15	Sontakke S M	DST	Sontakke S M	35 lakh	5 years	Development of anodic material for dye sensitized solar cell
16	Thorat B N	Rajiv Gandhi Commission for S&T, Government of Maharashtra	Thorat B N	25 lakhs	12 months	Ultrahealth: Water Fun Station
		Bill and Melinda Gates Foundation	Thorat B N	USD 100,000	18 months	Solar Grain Dryer
		Bill and MelindaGates Foundation	Thorat B. N.	USD 100,000	18 months	Solar Conduction Dryer

		Rajiv Gandhi Commission for S&T, Government of Maharashtra	Thorat B. N.	100 Lakh	2 years	Jaggery Granulation
		Bill and Melinda Gates Foundation	Thorat B. N.	USD 100,000	2013	Cassava Drying
		Gujrat Stevia Growers and Marketing Federation	Thorat B. N.	5	2013	Stevia Processing
		Gujarat Heavy Chemical Limited	Thorat B. N.	10	2015	Eco-friendly detergent
17	Vaidya P D	University Grants Commission	Vaidya P D	7.47 Lakhs	1st February 2011 to 31st January 2014	CO2 capture using novel amines
		Carbon Clean Solutions Pvt. Ltd.	Vaidya P D	12.31 Lakhs	1st October 2010 to 30th September 2011	Novel solvents for CO2 capture from flue gas
		DST	Vaidya P D	29.82 Lakhs		Diesel Production by Karanja-oil hydrotreatment
18	Yadav G D	DAE	Yadav G D	95		Self assembly of tethered nanoparticles :Macromolecule' for tailored nanomaterials
		DST-Indo-Finnish Project	Yadav G D	30		Sustainable catalytic chemical synthesis with carbon dioxide as feedstock (University of Oulu, Finland)
		Ministry of Chemicals and Fertilisers; Hindustan Insecticides	Yadav G D	167		Alternatives to DDT: Synthesis of New Molecules , Toxicological Studies and Scale -Up
		ONGC Energy Centre	Yadav G D	12		Some preliminary studies on HI synthesis
		ONGC Energy Centre	Yadav G D	860		ICT-OEC novel process for production of hydrogen

		DST- Indo-EU New Indigo Project	Yadav G D	50000		Green Water Tech (with University of Cantabria, Santander, Spain & University of Oulu, Finland)
		UK India Education and Research Initiative (UKIERI)	Yadav G D	25		Green processing technologies for poorly soluble drugs (with University of Bradford)
		Indo-US S & T Forum	Yadav G D	50		Centre on PROTECT: Program for Research on Thin-Films and nanostructured Emerging Coating Technologies (with SUNY Buffalo, NY)
		ONGC Energy Centre	Yadav G D	200		Molten salts for energy storage
19	Joshi J B	BRNS	Joshi J B	159.14 Lakhs		Development of ACE
		DAE-BARC	Joshi J B	221.00 Lakhs		Passive Decay Heat Removal system of AHWR
		DAE-IGCAR	Joshi J B			Fumeless Dissolution in Thermosiphon and Rotary Dissolver
		DAE-BARC	Joshi J B			CFD simulation of reactive (combustion) submerged gaseous jet under steady and unsteady state conditions
		DAE-BARC	Joshi J B			Studies in Synthesis and Characterization of Carbon Nanotubes by Catalytic Chemical Vapor Deposition
		DAE-BARC	Joshi J B			Studies on High Strength Carbon Fibre Composites
		DBT	Joshi JB	34	1997-2001	Design of Fermenters for Shear Sensitive Proteins and Enzymes.
		RIL	Joshi JB	3	1994-2001	Efficient scale-up of solar cookers
		Reliance Ind. Ltd.	Joshi JB	6	1998-2002	Development of new impellers designs for three phase stirred reactors

		Hindustan Polymides and fibres Ltd	Joshi JB	5	2002-2005	Solar Energy based refrigeration systems
		United Phosphorus Ltd.	Joshi JB	7	2002-	Miniaturization of liquid-liquid extraction Equipment
		BRNS	Joshi JB	150	2002-2010	Development of jet reactors
		Department of Atomic Energy	Joshi JB	150	2003-2010	Knowledge Based Engineering: Improvements in reactor design, heavy water production efficiency, nuclear waste management and development of novel separation processes.
		BRNS	Joshi JB	150	2007-2010	Development of Annular Centrifugal Extractors
		Department of Atomic Energy	Centre	7500	2008-2017	Chemical Engineering Education and Research
		Department of Biotechnology	Centre	2400	2007-2012	Energy Biosciences

Department of Dyestuff Technology

Sponsor	Title	Duration	Total amount (Rs.)	Principal Investigator	Research Fellows
Principal Scientific Advisor to GOI	Stand-off detection of explosives based on immunochemical Techniques	3 Year	3,73,26,000	Professor N. Sekar	Dr. Vikas S. Padalkar (Post Doctoral Fellow) Mr. Santosh B. Chemate (Junior Research Fellow)
BRNS	Advanced laser dyes with high quantum yield and high photostability	3 Year	21, 00,000	Professor N. Sekar	Mr. Ankush More (Junior Research Fellow), Mr. Shrikant Thakare (Junior Research Fellow)
DST	Colored fluorescent conducting	2 Year	10, 94,400	Professor N. Sekar	Mr. Manoj

	polymers for photovoltaic applications – feasibility phase				Jadhav (Junior Research Fellow)
AICTE	NIR Fluorescent Colorants for Biological Imaging in biomedical diagnostics	1 Year	19,70,000	Professor N. Sekar	----
UGC	Synthesis of red emitting coumarin laser colorants	3 Year	9, 00,000	Professor N. Sekar	Mr. Abhinav Tathe (Project Assistant)
AICTE-RPS	Synthesis of novel perimidine and quinaldine based NIR absorbing squarine dyes and study of their thermal and photophysical properties	3 Year	750000/-	Dr. G. S. Shankarling	Sushil khopkar
DAE-BRNS	Development and characterisation of selective coating for enhancement of radiation absorption of solar receivers.	2 Year	1,43,35,000/-	Dr. G. S. Shankarling/ Dr. V. D. Deshpande	Amruta Joglekar
DAE-BRNS	Synthesis and Purification of Spectroscopic grade Cuorbituril[7] for high power aqueous dye laser applications	3 Year	30,44,800 /-	Dr. G. S. Shankarling	Deepak Boraste
UGC	Graphene supported chiral reagent	3 Year	6,00,000	Dr. Surajit Some	----
BRNS	Tunable laser properties of dye decorated graphene derivatives	3Year	27,78,000	Dr. Surajit Some	Mr. Dattatray Appasha Pethsangave (Junior Research Fellow)
Science and Engineering Board of Research (SERB)	Design and Synthesis of D-(pi-A) ₂ Type Dyes With Troger's Base Architecture: The Effect Of Molecular Topology On The Performance Of Dye-Sensitized Solar Cells (DSSC)	36 months	29,90,000 (Project sanctioned but money awaiting)	Dr. Satyajit Saha	----
UGC-FRP	Cooperative Organocatalysis for Enantioselective Transformations	24 months	6,00,000 (money awaiting)	Dr. Satyajit Saha	----
CavinKare	Synthesis of Hair Dyes	1 Year	5,00,000	Professor N. Sekar	Mr. Prashant Mande
Transition Optical Corporation,	Synthesis of Azo and anthraquinone dyes.	1 Year	\$ 31000	Dr. G. S. Shankarling	Mr. Rishikant Sonune

USA					
Reliance Industries Ltd.	Characterisation of Ionic Liquids.	1 Year	Rs. 10,00,000	Dr. G. S. Shankarling	----

Department of Fibers and Textiles Technology

Sponsor	Title	Duration	Principal Investigator	Total amount	Research Fellows
FIST, DST, New Delhi		5 years	Professor R. V. Adivarekar	Rs. 150 lakhs	
MODROBS, All India Council for Technical Education, New Delhi	Modification of Synthetic Fibres and their colouration	5 years	Professor R. V. Adivarekar	Rs. 5.0 lakhs	
TEQIP-II		5 years	Professor R. V. Adivarekar	Rs. 80.55 lakhs	
Ethiopian Textile Industry Development Institute (ETIDI) of The Federal Democratic Republic of Ethiopia		3 Years	Professor R. V. Adivarekar	USD 19,98,665 /-	
Teqip-II	Development of mosquito repellent textiles	9 months (April to Dec 2014)	Professor Dr. M.D.Teli and Dr R D Kale	Rs. 13.14 lakhs	
UGC (UGC-Major)	Decolorization & recycling of coloured waste water of textile processing & dyestuff industry	2012-2015	Professor S. R. Shukla	Rs. 7.80 lakhs	
Centre of Excellence-Process Intensification-TEQIP-II (World Bank Sponsored)	Dyeing of Polyester and its blend using nano emulsions	2013-2015	Dr. R. D. Kale	16.40 lakhs	Mr. Vikrant Gorade – Ph.D. (Textile Chemistry) & Ms Prerana Kane (Ph.D.Tech.)
WELSPUN	Product Development Through Wet	1 Aug	Professor R. V.	Rs. 10.40 lakhs	Patankar

INDIA LTD	Processing	2014-31 July 2015	Adivarekar		Kausthubh
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Department of Food Engineering and Technology

Sponsor	Title	Duration	Amount	Principal Investigator	Co-investig ator
DST Govt. of India	Holistic approach for commercial processing of fruits and vegetables grown in western Maharashtra	2013-2016	Rs.129. 89 lakhs	Professor Smita S. Lele	
DBT, Govt. of India	DBT JRF Regional Meet	2013	Rs. 9.89 lakhs	Professor Smita S. Lele	
UGC Govt. of India	Studies in development of low glycemic index bhakri	2012-2014	Rs.1, 85,000/-	Dr. Shalini S. Arya	
DST/SERB-MOFPI, Govt. of India.	Studies in physico-chemical properties of plasma processed rice grains	2013-2014	Rs.22.18 lakhs	Dr. Uday S. Annapure	Dr. R. R. Deshmukh
Centre of Excellence under TEQIP	Process intensification for extraction of turmeric and pepper oleoresin by enzyme-assisted supercritical carbon dioxide	2013-2014	Rs. 27.00 lakhs	Professor Rekha S. Singhal	
University Grants Commission (UGC), Govt. of India	UGC-BSR one time grant for augmenting research facilities	2013-2014	Rs. 7.00 lakh	Professor Rekha S. Singhal	
Himedia Laboratories Pvt. Ltd.	Studies in probiotics	2012-2014	Rs.3.72 lakhs	Dr. Uday S. Annapure	
Tata Chemicals Ltd. Mumbai	Studies in extrusion Processing	2013-2014	Rs. 2.75 lakhs/-	Dr. Uday S. Annapure	
Unilever Industries Pvt. Ltd, Bangalore	Microbial fermentation	Jan 20, 2014 to Jan 19, 2015	Rs. 10.39 lakhs	Professor Rekha S. Singhal	

Tata Chemical Services	Studies on development of low GI multigrain atta	2013-14 (6 months)	Rs. 1, 20, 000/-	Dr. Shalini S. Arya	
Rutgers Centers for Global Advancement and International Affairs	Taste response study of amaranth-quinoa snacks by Indian population	February 2014 to December 2015	\$ 8000	Professor Mukund V. Karwe and Professor Rekha S. Singhal	
Tata Chemical Services	Characterization of edible salt	2014-15 (6 months)	Rs. 1.50 lakhs	Professor Rekha S. Singhal	
D. P. Beverages, Ireland	Understanding protein from different sources	2014-15 (6 months)	Rs. 6.47 lakhs	Professor Rekha S. Singhal	

Department of Oils, Oleochemicals and Surfactants Technology

Sponsor	Title	Duration	Total amount	Principal Investigator	Co- Principal Investigator(s)	Research Fellows
Rajeev Gandhi Science and Technology Commission, (Govt. of Maharashtra), Mumbai	Green Surfactants: Value Addition to Neem Oil and Cake	Two years	63.23 Lakhs	Dr. Amit Pratap		Mr. Bhavin Patel and Ms. Priyanka Sathe
Department of Science and Technology (DST), New Delhi	Value Addition to Biodiesel via Biolubricants	Three years	40.33 Lakhs	Dr. Amit Pratap		Mr. Chetan Waykole
Ministry of Consumer Affairs , Food & Public Distribution , Department of food & Public distribution	Stabilisation of Omega -3 Fatty acids in oil based products (Stabilisation of Omega -3 Fatty acids in edible oil blends/vanasp ati/margarine/s hortening/butt er like products using natural	3 years	15.68 lakhs	Dr. Jyotsna Waghmare and Dr. Amit Pratap		Ankita Kurhade, Harsha Ashtankar Ashish Gadhave, Ankeeta Shinde

	antioxidants					
Ministry of Science & Technology SERB-DST	Eco-Friendly economical Alternative fuel	2 years	12 lakhs	Dr. Jyotsna Waghmare		Swapnil Mane
TEQIP	Enzymatic process intensification for the manufacture of structure lipid to enhance the yield	1 year	20 lakhs	Dr. Jyotsna Waghmare		Asma Fakir, Sadanand Kadam, Snehal More
Pitambari Pvt.Ltd	A method development for separation of aroma from Jasmine (Mogra flower)	1 year	2.5 lakhs	Dr. Jyotsna Waghmare		Lakhan Lale
Reckitt benckiser (india) ltd	Bar soaps	6 months	1.6 lakhs	Dr.Jyotsna Waghmare		Gandhar Bhole
BIRAC-Bill and Melinda Gates Foundation	Hygienic Water-Free Toilet	1 year	Rs 25.00 Lakh	P. R. Nemade	V. H. Dalvi, S. Kasthurirangan, C. S. Mathpati, A. S. Misra, N. Jha	
SERB: Scheme for Young Scientists	Development of Polymerizable Ionic Liquid Membranes for Gas Separations	3 years	Rs 22.40 Lakhs	P. R. Nemade		
Rajiv Gandhi Science and Technology Commission	Pre-Treatment of Biomethanated Distillery Waste by Catalytic Wet Air Oxidation (CWAO) to Enhance Further	2 years	Rs 22.00 Lakhs	P. D. Vaidya	P. R. Nemade	

	Biomethanation					
TEQIP-Innovation Networking	Development of handheld sensor for detection of organophosphorus pesticides in water	1 year	-		P. R. Nemade	
BRNS	Graphene oxide based reverse osmosis membranes	3 years	Rs. 17.11 Lakh		P. R. Nemade	

M/s Pitambari products Pvt. Ltd., Navi Mumbai	Value Addition for Fatty Materials	Six Months	5.17 Lakhs	Dr. Amit Pratap		Mr. Yohesh Chaudhari and Mr. Rohan Mistry
M/s Reckitt Benckiser (India) Ltd., Gurgaon, Haryana	Antimicrobial Soap	Six Months	1.8 Lakhs	Dr. Amit Pratap and Dr. Jyotsna Waghmare		Mr. Gandhar Bhole and Mr. Ganesh Devsarkar
M/s Tetra Pack India Pvt. Ltd., Pune	Studies in Packaged Oils	Six Months	4.27 Lakhs	Dr. Amit Pratap		Mr. Akshay Shahane and Ms. Jagruti Jadhav
GAIL (India) Ltd.	Development of Catalyst for Conversion of Methane to Olefins	3 years	Rs 103.80 Lakhs	S. M. Sontakke	P. R. Nemade	Ph.D. (Tech): Chaudhari, Sushil M. Ph.D. (Tech): Sane, Priyanka

Department of Pharmaceutical Sciences and Technology

Sponsor	Title	Duration	Total amount	Principal Investigator	Co-Principal Investigator	Research Fellows
Department of Biotechnology (DBT)	Early Translational Study Of Orally Administered Nanoparticulate Carriers For	2013-2016 (3 years)	Rs. 1,01,49,000	Professor P. V. Devarajan		Mr. Sagar Bacchav

	Pulmonary Targeting Of Anti-Tubercular Drug Combinations					
ICMR	Preclinical testing for safety of synthetic peptide 1of 80 kDA HAS for development of anti-fertility vaccine	2015-2018	Rs. 1200000	Professor P. V. Devarajan		Mr. Rohit Joshi
DST and Russian Foundation for basic research	Artificial sensory systems for optimising palatability of paediatric pharmaceutical formulations	2015-2017	Rs. 2527360	Professor P. V. Devarajan		To be appointed
DBT	Development and Evaluation of Fixed Dose Combination for Tuberculosis By using Hot Melt Extrusion technology	Jan 2013- Mar 2016	45 Lakhs	Professor P. D. Amin		Divakar R. Jaiswar
RGNF	Novel lipidic drug delivery system by HME	Nov-13 to Oct-18	12.85 lakhs	Professor P. D. Amin		Santosh Maruti Gejage
UGC	Continuous process for the production of solid lipid nanoparticles (SLN) as drug-carrier systems via hot-melt extrusion (HME)	Apr-15 to Mar-17	7.0 lakhs	Professor P. D. Amin		Santosh Maruti Gejage
UGC	Design, Synthesis and Biological Evaluation of 2-Phenyl-4,5-(substituted)thiophene 3-carboxylic acid derivatives as Anti-inflammatory	3 years	7.52 lakh	Ganesh U. Chaturbhuj		NA

	agents.					
AICTE	Design, synthesis and evaluation of peripherally restricted cannabinoid receptor 2 selective agonist for treatment of neuropathic pain	3 years	16 lakh	Ganesh U. Chaturbhuj		NA
BRNS	Design, synthesis and evaluation of 18F ligands for diagnosis of Alzheimer's disease	3 years	18,72,265/-	Professor M.S. Degani		Arun Bhusari
TEQIP	Microwave assisted Halogenation reactions using flow reactor	1 year	27,00,000/-	Professor M.S. Degani		-
AICTE	Extraction of phytochemicals by using green technology	3 years	25,00,000/-	Professor M.S. Degani		-
UGC-MRP	Design and synthesis of novel arylquinoline analogues as potential anti-tuberculosis agents	3 years	19,96,000/-	Professor M.S. Degani		-
U.I.C.T Golden Jubilee Research Fund Endowment	Neuroprotective effect of polyphenols against β -amyloid induced toxicity in PC-12 cells	1 year	70,000	Professor A. R. Juvekar		Amrita Chowdhury
Rajiv Gandhi Science and Technology Commission (RGSTC), Govt. of Maharashtra, 2014-2017	3D cell culture Technology for Developing Affordable Bioengineered Skin for Burn Patients	Three years (2014-2017)	Rs. 85,10,000 /-	Dr. Prajakta Dandekar Jain		Mr. Rohan Chhabra, RA

DBT	Synthesis and Cellular evaluation of Novel Palladacycle complexes for breast cancer	Three years (2015-2018)	Rs. 24,81,000 /-	Dr. Prajakta Dandekar Jain		Sanctioned, grant to be received
DAE-BRNS	CD44 Targeted Hyaluronic acid-siRNA Bearing COS Nanoplexes	Three years (2013-2016)	Rs. 16,95,000/-	Dr. Prajakta Dandekar Jain		Mr. Uday Koli, Ph.D. (Sci.)/ co-guide
DBT	NANOCOS™: - COS-siRNANanoplexes for inhibiting intracellular mycobacteria	Two years (2013-2014)	Rs. 19,99,000/-	Dr. Prajakta Dandekar Jain		Mr. Sathish Dyawanapelly, RA
Rajiv Gandhi Science and Technology Commission (RGSTC), Govt. of Maharashtra, 2014-2017	3D cell culture Technology for Developing Affordable Bioengineered Skin for Burn Patients	Three years (2014-2017)	Rs. 85,10,000 /-	Dr. Prajakta Dandekar Jain		Mr. Rohan Chhabra, RA
Indian Council of Medical Research	Quality Standards of Indian Medicinal plants and Preparation of Monographs thereon	Three years (2012-2015)	Rs.31,51,539/-	Professor K. S. Laddha		Mr. Awdhut Pimple
Rajiv Gandhi Science and Technology Commission	Developing technology for extraction and isolation of Anti-Arthritic drugs from plants indigenous to Maharashtra.	Two years (2013-2015)	Rs. 55,16,999/-	Professor K. S. Laddha		Mrs. Pooja Bowlekar Ph.D (Tech)
Rajiv Gandhi Science and Technology Commission	Extraction of Volatile oil from Orange Peels, Separation of Limonene from it and its Industrial Applications	One and half year (2015-2017)	Rs. 19,49,250/-	Professor K. S. Laddha		To be appointed
UKIERI (UK-India Education	Hot melt extrusion assisted solid	2012-2014	40,00,000/-	Professor G. D. Yadav	Professor V. B. Patravale,	Desai Preshita

and Research Initiative) funded by British council	dispersions for oral bioenhancement of poorly bioavailable drugs under collaborative project 'process analytics enabled green technologies for processing of poorly soluble drugs'				Professor P. V. Devarajan, Professor V. G. Gaikar	
AICTE	Process engineering for fabrication of micro/ nano particles	2012-2015	18,00,000/-	Professor V. B. Patravale		NA
DBT-ICMR	Rectal microbicide nanotherapeutics for HIV/ AIDS	2012-2015	65,42,400/-	Professor V. B. Patravale	Professor A. Bandivdekar	Mirani Amit
ICMR	Nanotechnology-based diagnostic module for detection of brucellosis	3 Years	18,44,524/-	Professor V. B. Patravale	Professor S. Maji	Vyas Swati
Department of Biotechnology	Development and evaluation of Fixed Dose Combination (FDCs) for Tuberculosis using Hot Melt Extrusion Technology	3 Year	45,78,000/-	Dr. Sadhana Sathaye		Devang Sarvaiya
Department of Science Technology	Evaluation of anti epileptic activity of medicinal plants in animal models of epilepsy	3 Year	30,11,782/-	Dr. Sadhana Sathaye		Pankaj Jain
All India Council for Technical Education (RPS)	Isolation standardization and pharmacokinetic profiling of herbal drug	3 Year	22,66,667/-	Dr. Sadhana Sathaye		Madhav Seervi

University Grand Commission	Design and Synthesis of Anti-diabetic agents	3 Years	12,40,000/-	Vikas N. Telvekar		Not appointed
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Sponsor	Title	Duration	Total amount	Principal Investigator	Research Fellows
Phoenix Pharmaceuticals	Oral Controlled Drug Delivery Systems	2012-2015 (3 years)	US \$ 31,000	Professor P. V. Devarajan	Mr. Prashant Mande
Phoenix Pharmaceuticals	Controlled Drug Delivery Systems	2013-2016 (3 years)	US \$ 34,000	Professor P. V. Devarajan	Mr. Rijo John
Phoenix Pharmaceuticals	Formulation of controlled and novel drug delivery systems	2014-2017 (3 years)	US \$ 34,000	Professor P. V. Devarajan	Mr. Harsh Joshi
Coromandel International	Synthesis of Reference Compounds for Impurity Profiling	Two year	13.5 Lakhs	Professor K. G. Akamanchi	
Kerry Ingredients India Pvt Ltd	-	9 months	Rs 13.18lac	Professor P.D. Amin	
Merck India Pvt Ltd		6 months	Rs 7.5 lac	Professor P.D. Amin	
VVF. Ltd	-	6 months	Rs. 4.5 lac	Professor P.D. Amin	
Coromandel International Pvt. Ltd.	Synthesis of impurities for Agrochemicals	1 year	13 Lakh	Professor K.G. Akamanchi	Name and degree (if registered)
Spring Bank Pharma, MA, USA	Medicinal chemistry services	1 year	Approx. 3,50,000/-	Professor M.S. Degani	-
Bajaj Health Care Pvt. Ltd.	Chemoenzymatic synthesis of anti-infective agents	Two years (2015-2017)	Rs. 33,00,000	Dr. Prajakta Dandekar Jain	Mr. Pramod Wagh
M/s. Total Herb Solutions P.ltd	Development of analytical method for Herbal drugs and formulations	6 months (2014 - 2015)	Rs. 50,000/-	Professor K. S. Laddha	-
ASG Biochem	Extraction and	2015	Rs. 1,00,000/-	Professor V. B.	

Pvt. Ltd.	quantification of DSGN from natural source using supercritical technology			Patravale	
Perrigo API India Pvt. Ltd.	Development and validation of dissolution methodology for pravastatin tablet USP using USP IV dissolution apparatus	2014-2015	Rs. 2,50,000/-	Professor V. B. Patravale	
Quantimmune solutions Pvt. Ltd.	Particle size and complexation analysis between mouse platelet factor 4 (mPF4) and low molecular weight heparin (LWH) using DLS	2014-2015	Rs. 4,00,000/-	Professor V. B. Patravale	
Emami Ltd.	Formulation development of analgesic and anti-inflammatory herbal formulations	2014-2015	Rs. 10,00,000/-	Professor V. B. Patravale	
Alkem Pharmaceutical Pvt. Ltd	Development of micro. /nacosuspension of an antimalarial moiety	2014	10,00,000/-	Professor V. B. Patravale	
Grand Challenges Explorations Grants Round 11, Bill & Melinda Gates Foundation	Nanovaccine for brucellosis using green technology	2013-2014	1,00,000 \$ INR ~60,00,000/-	Professor V. B. Patravale	Vyas Swati, Dhoble Sagar, Ghodke Vinod
Sahajanand Medical Technologies Pvt. Ltd.	Development of smart drug eluting stents	2013-2015	8,50,000/-	Professor V. B. Patravale	Agrawal Ankit
Sanzyme Pvt. Ltd	Development of controlled release formulations	3 years	18,00,000 Rs	Professor P. R. Vavia	

Nippon Synthetic Chemicals Pvt. Ltd.	Development of controlled release formulations	3 years	7,30,000 Rs	Professor P. R. Vavia	
ArEx Laboratories Pvt. Ltd	Development of controlled release veterinary formulations	2 years	-	Professor P. R. Vavia	

Department of Polymer and Surface Engineering

Sr. No.	Sponsor	Title	Duration	Total Amt. (Rs.)	Principal Investigator
1.	BRNS	High energy radiation assisted depolymerization of polyethylene terephthalate for coating applications	2 years	21,00,000	A. S. Sabnis
2.	BRNS	Development of volatile organic compound (VOC) free radiation indicator labels along with prototype product manufacturing.	3 years	25,00,000	S.T Mhaske
3.	DST, Govt of India	Biodegradable Food Packaging		32,73,000	S.T Mhaske
4.	TEQIP, CoE	Synthesis of Metal Oxide Nanoparticles		23,00,000	S.T Mhaske
5.	AICTE, New Delhi	Development of Conducting Polymer nanofibers by Electrospinning and Polymer Nano fiber composites for Fuel Cells	2013-2016	9,90,000	P. A. Mahanwar
6.	BRNS	Development of Heat Shrinkable cable and sheets for electrical and electronic application	2014-2017	35,00,000	P. A. Mahanwar
7.	RGST	Development of Controlled Release formulations of Agrochemicals	2015-2018	53,00,000	P. A. Mahanwar
8.	BRNS	Clay Filled LLDPE Nanocomposites Film For Modified Atmospheric Packaging with Improved Barrier Properties in Food Application	3 years		R.N Jagtap
9.	UGC-DRS	Controlled Radical Polymerization	5 years		R.N Jagtap
10.	BRNS	Green approach for recycling of e-waste through radiation processing	1 year		R.N Jagtap

Sr. No.	Sponsor	Title	Duration	Total Amt. In Rs.	Principal Investigator	Research Fellow
1.	Ateems Ltd Thailand	Development of a technology for extracting colour from Shellac	3 YEARS	8,00,000	S.T Mhaske	
2.	Jai corporation Ltd	PET waste Utilization	Dec 2012	20,00,000	S.T Mhaske	
3.	Gharda Chemicals Ltd.	Synthesis of Polyamide based Hot Melt Adhesive	2013-2014	24,00,000	S.T Mhaske	
4.	Hindustan Unilever Ltd	Development of Polymer blend for enhance performance in water filter application-	2015-2016	6,00,000	P. A. Mahanwar	Nikesh Samarth
5.	Kansai Nerolac Paints Ltd.	Developments carbonation methods	2 years	2,50,000	R.N Jagtap	
6.	Apcotex	Improvement of Barrier Properties of paper	6 months	2,50,000	R.N Jagtap	
7.	Asian Paints ltd.	Studies in anticarbonation coatings	2 years	1,20,000	R.N Jagtap	
8.	Momentive Ltd.Banglore	Determination of Weathering resistance of Emulsion paints	3 Years	2,00,000	R.N Jagtap	

Department of Chemistry

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Govt	Department of science	Development of CO and H ₂ insertion	2013-2015	4.38 Lakh

			and technology (DST-JSPS)	reaction using metal ion containing immobilize ionic liquid catalyst		
Personal	Principle Investigator	Govt	Science and Engineering Research Board (SERB).	Studies in asymmetric catalysis for synthesis of enantiomerically pure amines and alcohols	Dec. 2012 to Dec. 2015	37 Lakh
Personal	Principle Investigator	Govt	Department of Biotechnology (DBT)	Enzyme immobilization and its application in supercritical carbon dioxide for synthesis of valuable compounds	Aug. 2012 to Aug. 2015	24 Lakh
Personal	Principle Investigator	Govt	Department of Science and Technology (DST-Nano Mission).	Study of catalytic activity of nanosize metals and metal oxides prepared by novel or conventional routes.	2012-2015	166 Lakh

**GOVERNMENT FUNDED PROJECTS – ONGOING
PROFESSOR B. M. BHANAGE**

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Govt	Department of science and technology (DST-JSPS)	Development of CO and H ₂ insertion reaction using metal ion containing immobilize ionic liquid catalyst	2013-2015	4.38 Lakh
Personal	Principle Investigator	Govt	Science and Engineering Research	Studies in asymmetric catalysis for	Dec. 2012 to Dec. 2015	37 Lakh

			Board (SERB).	synthesis of enantiomerically pure amines and alcohols		
Personal	Principle Investigator	Govt	Department of Biotechnology (DBT)	Enzyme immobilization and its application in supercritical carbon dioxide for synthesis of valuable compounds	Aug. 2012 to Aug. 2015	24 Lakh
Personal	Principle Investigator	Govt	Department of Science and Technology (DST-Nano Mission).	Study of catalytic activity of nanosize metals and metal oxides prepared by novel or conventional routes.	2012-2015	166 Lakh

PROFESSOR R. V. JAYARAM

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Departmental	Principle Investigator	Govt.	TEQIP	Feb 2014	Microwave assisted Bifunctional catalysis for Tandem Reactions	Feb 2014 to Dec 2014	17,00,000

DR. ANANT KAPDI

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Govt	DST (Inspire Faculty	Mar. 2011	Application of Palladacyclic Complexes in	March 2011- February	25,00,000

			program me)		Aqueous Media	2014	
Personal	Principle Investigator	Govt	DST (Inspire Faculty programme)	Nov. 2012	Application of Palladacyclic Complexes in Synthesis.	November 2012- October 2017	83,00,000
Personal	Principle Investigator	Govt	Department of BioTechnology	Aug. 2015	Synthesis and Cellular Evaluation of Novel Palladacyclic Complexes for Breast Cancer'	August 2015- July 2018	25,00,000

SPONSORED PROJECTS BY PRIVATE AGENCIES

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Private	Alexander von Humboldt Foundation (Germany)	Multi-functional Nucleosides and Nucleotides via Palladium-Mediated Reactions Using Novel Palladacyclic Complexes with Promising Anticancer Activities	July 2015 to June 2018	38,00,000
Personal	Principle Investigator	Private	Rasayan Inc. (United States of America)	Green Approach towards the synthesis of substituted nucleosides	January 2013 to December 2015	15,00,000
Personal	Principle Investigator	Private	Gem Aromatics (Ind)	Greener Approach for synthesis of synthetically important molecules.	January 2013 to December 2013	2,00,000
Personal	Principle Investigator	Private	Reliance Ind. Pvt. Ltd.	Development of new external donors (especially long chain esters and	February 2015 to January 2016	10,90,000

				amides of fatty acid) for Homo-grade propene polymerization		
Personal	Principle Investigator	Private	Encore Pvt. Ltd.	Development of efficient processes for commercially useful drugs	August 2015 to July 2016	10,00,000

DR. SHRAEDDHA TIWARI

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Govt.	Department of Science and Technology (INSPIRE faculty scheme)	18th October 2013	Investigating Reactivity and Selectivity of Organic Reactions in Liposomes as Model Protocells	2013 to 2018	35,00,000
Personal	Principle Investigator	Govt.	Department of Science and Technology (Fast Track Scheme)	30th June 2014	Investigating Reactivity and Selectivity of Organic Reactions in Liposomes as Model Protocells	2014 to 2017	16,98,000

DR. VIJAY KUMAR. A

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
DST-INSPIRE	Dr. Vijay Kumar A.	Govt	DST	27th Nov, 2012	Organic Synthesis using Recyclable Metal and Carbon	Nov, 2012 to Nov, 2017	35 Lakhs

					Catalysts.		
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DR. DIPANWITA DAS

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Personal	Principle Investigator	Govt. sponsor	Department of Science and Technology	18th October, 2013	Transition metal mediated catalytic two and four electron reduction of O ₂ : synthesis, structure-reactivity correlation and mechanistic insights by trapping intermediates	October 2013 to October 2018	Rs. 35.00 lakh

DR. KAUSTUBH JOSHI

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Personal	Principal Investigator	Govt	DST, New Delhi	August 2013	Efficient QM/MM approach for Protein/Ligand Binding Free Energies: finding inhibitors for novel cathepsin K, an Osteoporosis target	August 2013 - July 2018	33.0 lakh

DR. SANGHAMITRA CHATTERJEE

Personal /Departmental	Principle Investigator / Co-Investigator	Sponsor – Govt./ Private	Name of Sponsor	Date of Sanction	Title	Duration	Amount sanctioned, in Rs.
Personal	Principal Investigator	Govt	Department of Science and Technology	10th November, 2014	Nanomaterial Based Electrochemical Sensors for Biomedical Applications	2014 to 2019	35,00,000

DEPARTMENT OF PHYSICS

Sponsor	Title	Duration	Total Amount	Principal Investigator	Research Fellows	Co-investigator
AICTE RPS (c)	Synthesis, Characterization And Study Of Properties of Nano-Fillers Based Polysiloxane Composites	2 years	20 lakhs	Dr. (Mrs.) V. D. Deshpande	Vrishali Murudkar	
UGC Major	Studies of Unique Morphological And Thermal Behavior of Reorganized Poly (Ethylene Terephthalate) And Its Nanocomposites With Organomodified Clay'	3 years	12 lakhs	Dr. (Mrs.) V. D. Deshpande	Amita Gaonkar	
BARC	Development and	2 years	1.5 Crores	Dr. (Mrs.) V.	Satish Dubey	

	characterization of selective coating for enhancement of radiation absorption of solar receivers			D. Deshpande		
DST - MoFPI	Studies in Physico-Chemical Properties of Plasma Processed Rice grains	2 yrs (26/12/2012 to 26/12/2014)	20.18 Lakh	Dr. U S. Annature		Dr. R.R. Deshmukh
DST Inspire	Development of Pt alloy based electrocatalyst for fuel cell	5 Yrs	35 Lakh	Dr. Neetu Jha		
DST Nanomission	Development of metal oxide graphene based supercapacitor	3 Yrs	25 Lakh 77 Thousand 6 hundred	Dr. Neetu Jha		Professor A.B. Pandit
SERB, Startup Grant for Young Scientist	Development of electrocatalyst support for fuel cell	3 Yrs	17 Lakh 40 Thousand	Dr. Neetu Jha		
BRNS, Young Scientist Research Award	Development of Carbon based nanocomposites for Supercapacitor	3 Yrs	11 Lakh 90 Thousand	Dr. Neetu Jha		
PRIVATE INDUSTRIES						
Universal Starch-Chem Allied Ltd	Studies in Synthesis of Biodegradable Polymer.	Dr. Neetu Jha	20.18 Lakhs	Dr. A.S. Sabnis	Sinkar Mayur	Dr. R.R. Deshmukh

Appendix 9

PROPOSED CENTRES OF EXCELLENCE

Campus Placement Cell: Dr. V. K. Rathod / Dr. A. Pratap

Centre for Continuous Education for Plant Personnel : Professor A. V. Patwardhan / Dr. A. W. Patwardhan

Centre for Crystallization, Filtration and Drying : Professor B. N. Thorat / Dr. C. S. Mathpati

Centre for Eco-friendly Plastic Processing and Recycling : Professor P.A. Mahanwar / Dr. S. T. Mhaske

Centre for Food Processing and Quality Assurance : Professor R.S. Singhal / Dr. Laxmi Ananthnarayan

Centre for Green Technology : Professor B. M. Bhanage / Dr. P.D. Vaidya

Centre for Herbal Technology and Natural Products : Professor K. S. Laddha / Dr. G. S. Shankarling

Centre for Interfacial Science and Engineering : Professor S. S. Bhagwat / Dr. P. R. Nemade

Centre for Metabolic and Genetic Engineering : Dr. N. Aruna / Dr. S. Reshamwala

Centre for Nano Drug Delivery : Professor V. B. Patravale / Dr. Prajakta Dandekar

Centre for Process Intensification and Innovation : Professor S. S. Bhagwat / Dr. S. Jogwar

Centre for Product Engineering : Professor K.G. Akamanchi / Dr. V. H. Dalvi

Centre for Promotion of Science and Technology : Dr. A. W. Patwardhan / Dr. A. Kapdi

Centre for Risk and Hazard Management in Process Industries : Professor B. M. Bhanage / Dr. P.D. Vaidya

Centre for Sustainable Energy Engineering : Professor S.S. Bhagwat / Professor A. B. Pandit

Centre for Sustainable Fertilizer Technology : Professor P.K. Ghosh / Dr. P.D. Vaidya

Centre for Undergraduate Research In Engineering (CURIE) : Professor V. G. Gaikar / Dr. S. T. Mhaske

Centre for Water Research : Mrs. K. V. Marathe / Dr. V. K. Rathod

Centre for Drug Discovery Engineering : Professor K.G. Akamanchi / Dr. V. N. Telvekar

Centre for Fibres and Textile Engineering : Professor M. D. Teli / Dr. R. D. Kale

Centre for Infectious Disease Control and Prevention : Professor P. V. Devarajan / Dr. S. S. Sathaye

Centre of Toxicological Studies : Professor N. Sekar / Professor A. R. Juvekar

Entrepreneurship Resource Centre : Professor B. N. Thorat / Dr. R. Jain

Internal Quality Assurance Cell : Professor V. G. Gaikar / Dr. S. P. Deshmukh

Information Processing Centre : Dr. P. R. Gogate / Dr. V. H. Dalvi

NAAC and NBA Activities : Dr. S.P. Deshmukh / Dr. A. Sabnis

New Campus : Professor K. S. Laddha / Professor V. G. Gaikar

Technology Transfer Cell : Professor P.K. Ghosh / Professor A. B. Pandit

Technology Incubation Centre : Professor P.K. Ghosh / Professor A. B. Pandit

Centre for Mathematical Sciences : Dr. A.K. Sahu

Appendix 10

Lab Space and Area

AREA OF DIFFERENT CLASSROOMS

MAIN BUILDING

Room No.	Area in sqm.
A-102	18.05X9.75=175.98 sqm.
A -103	5.85X9.75=57.04 sqm.
A-106	5.80X8.40=48.72 sqm.
A-152	6.15X8.40=51.66 sqm.
A-153	5.85X8.40=49.14 sqm.
A-156	5.90X9.75=57.52 sqm.
A-157	5.90X9.75=57.52 sqm.
A-203 & A-204	12.5X9.80=118.09 sqm.
A-210	6.40X6.00=38.40 sqm.
A-220 & A-221	6.40X12.30=78.72 sqm.
A-222 & A-224	6.40X10.30=65.92 sqm.
A-253	6.45X5.90=38.05 sqm.
Total Area	836.76 sqm.

LIBRARY BUILDING

Room No.	Area in sqm.
H-101	11.90X11.80=140.42 sqm.
H-102	10.20X11.80=120.36 sqm.
Total Area	260.78 sqm

ENGINEERING BUILDING

Room No.	Area in sqm.
E-205	17.35X10.15=176.10 sqm.
E-304	23.00X10.10=232.30 sqm.
E-305	9.90X4.30=42.57 sqm.
Total Area	450.97 sqm

CONSUMER CO-OP SOCIETY BUILDING

Room No.	Area in sqm.
G-101	13.35X6.60=88.11 sqm.
G-103	9.20X6.60=60.72 sqm.
G-301	11.55X13.45=155.35 sqm.
G-302	9.20X4.75=43.70 sqm.
Total Area	347.88 sqm.

O.F.W. BUILDING

Room No.	Area in sqm.
F-103	6.30X9.25=58.27 sqm.

Therefore total area of classrooms incl.drg.halls = (1)+(2)+(3)+(4)+(5)
 = 1,954.66 sqm.
 SAY= 1,955 sqm.

ADMINISTRATIVE AREA.

Room No.	Area in sqm.
General office cum Director office	36.00X10.00=360.00 sqm.
Accounts Section	10.00X7.60X1.50=114.00 sqm.
Stores Section	12.25X6.10=74.72 sqm.
Asst. Security officer cabin at entrance	@40.00 sqm.

Security guard rest room opp. to stores section	
Total Area	588.72 sqm.

VARIOUS FACULTY ROOMS

MAIN BUILDING (GROUND FLOOR)

Room No.	Faculty	Area in sqm.
A-172	V. C. Malse	6.25X4.30=26.87 sqm.
A-170	P. A. Mahanwar	6.25X3.80=23.75 sqm.
A-168	R. N. Jagtap	6.25X2.50=15.62 sqm.
A-165	D. D. Kale	5.25X4.25=22.31 sqm.
A-166	V. V. Shertukde	6.25X6.45=40.31 sqm.
A-161	N. C. Debnath	3.75X2.80=10.50 sqm.
A-108	G. D. Yadav	4.30X3.80=16.34 sqm.
A-109	V. G. Pangarkar	4.05X6.30=25.51 sqm.
A-113	S. B. Sawant	6.30X3.80=23.94 sqm.
A-116	J. B. Joshi	6.30X4.00=25.20 sqm.
A-119	Visiting Faculty	6.30X6.20=39.06 sqm.
A-123	V. G. Gaikar	6.30X3.80=23.94 sqm.
A-127	S. S. Bhagwat	6.50X4.00=26.00 sqm.
A-128	V. V. Mahajani	3.65X3.55=12.95 sqm.
A-129 B1	M. A. Shenoy	6.50X4.00=26.00 sqm.
A-144	Usha Sayed	6.30X5.95=37.48 sqm.
A-148	M. D. Teli	6.30X4.05=25.51 sqm.

MAIN BUILDING (GROUND FLOOR)

Room No.	Faculty	Area in sqm.
A-270	S. R. Shukla	6.30X4.00=25.20 sqm.
A-270	R. V. Adivarekar	6.65X6.15=40.89 sqm.
A-266	M. D. Teli	6.30X5.95=37.48 sqm.
A-259	P. D. Amin	3.70X3.15=11.65 sqm.
A-255	V. B. Patravale & P. V. Devarajn	6.40X3.00=19.20 sqm.
A-252	S. P. Warriar & S. A. Phadnis	6.40X2.85=18.24 sqm.
A-251	P. R. Vavia	6.40X2.85=18.24 sqm.
	M. S. Degani	3.70X3.20=11.84 sqm.
A-244	K. G. Akamanchi	7.55X3.80=28.69 sqm.
A-242	L. Rodrigues	
A-243A	A. R. Juvekar	4.20X3.30=13.86 sqm.
A-292	V. M. Kulkarni	
A-287	M. Y. Kamat	6.40X2.45=15.68 sqm.
A-290	T. N. Vasudevan	
A-281	J. S. Pai	6.20X6.40=39.68 sqm.
A-209	S. S. Lele	4.80X2.50=12.00 sqm.
A-209A	L. Anantnarayan	4.20X3.30=13.86 sqm.
A-209B	J. S. Pai	4.20X3.05=12.81 sqm.
A-214	P. J. Dubash	6.40X4.10=26.24 sqm.
A-227	A.K. Vanjara	3.70X3.30=12.21 sqm.
A-232	S. D. Samant	6.40X3.65=23.36 sqm.
A-234	R. S. Singhal & J. M. Nagarkar	6.40X6.15=39.36 sqm.
A-233	R. V. Jayaram & B. M. Khadilkar	9.30X6.30=58.59 sqm.

A-282	K. S. Laddha	6.00X2.50=15.00 sqm.
Total Area		974.11 sqm.

ADVANCE CENTRE BUILDING (GROUND FLOOR)

Room No.	Faculty	Area in sqm.
C-106A	A. W. Patwardhan	4.60X3.25=14.95 sqm.
C-106B	B. R. Gogate	4.50X3.25=14.62 sqm.
C-107	B. N. Thorat	4.50X3.80=17.10 sqm.
C-108	-	4.50X3.80=17.10 sqm.
C-102	N. V. Bhat	6.30X4.55=28.66 sqm.

FIRST FLOOR

Room No.	Faculty	Area in sqm.
C-208B	A. K. Kalkar	4.75X3.10=14.72 sqm.
C-208A	A. V. Deshpande	4.65X3.10=14.41 sqm.
C-206A	S. M. Pawde	4.55X3.10=14.10 sqm.
C-205	R. D. Mhaskar	4.60X3.90=17.94 sqm.
C-202C	C. J. Jahangirdar	3.95X3.10=12.24 sqm.
C-202A	V. D. Deshpande	3.30X3.50=11.55 sqm.
C-202B	R. R. Deshmukh	3.30X3.50=11.55 sqm.
C-202	A. V. Bambole	3.30X3.50=11.55 sqm.
C-203	A. K. Sahu	6.60X3.30=19.80 sqm.

SECOND FLOOR

C-302	M. R. Sawant	6.60X3.00=19.80 sqm.
C-305A	P. M. Dhadke	4.50X3.20=14.40 sqm.
C-308	S. G. Dixit	5.80X4.40=25.52 sqm.

C-201	T. E. Govindan	3.00X4.00=12.00 sqm.
Total Area		292.01 sqm.

OFW BUILDING (FIRST FLOOR)

F-206B	(HOD Room) Vacant	6.55X3.80=24.89
F-201	S. A. Momin	6.50X3.60=23.40
Total Area		48.29 sqm.

SECOND FLOOR

F-303	A. M. Lali	6.50X3.50=22.75
F-304	A. B. Pandit	6.50X3.50=22.75
F-305	D. N. bhowmick	6.45X3.50=22.57
F-306	K. V. Marathe	6.45X3.45=22.25
Total Area		138.61 sqm.

DYES BUILDING

N.Sekar	3.85X3.50=22.75 sqm.
HOD	5.30X5.15=27.29 sqm.
V. R. Kanetkar	5.30X5.30=28.09 sqm.
Total Area	65.77 sqm.

GENERAL ENGINEERING BUILDING (GROUND FLOOR)

E-105	H. M. Rao	6.75X4.20=28.35 sqm.
	P. Goswami	3.30X3.00=9.90 sqm.
E-101	S. P. Deshmuk	4.35X3.00=13.05 sqm.
Steno Room (Dias)	-	2.90X2.85=8.26 sqm.
Engineering Unit office	-	6.60X4.55=30.03 sqm.

E-101B (Workshop Staff Change Room)	6.80X6.80=46.24 sqm.
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FIRST FLOOR

M. A. K. Kerawala	4.30X2.50=10.75 sqm.
V. R. Gaval	4.30X3.95=16.98 sqm.
D. D. Sarode	4.30X3.20=13.76 sqm.
Tulpule	6.75X2.80=18.90 sqm.
Sujit Sahai+2 Adj. Vacant Cabins	3.35X2.80X3 Nos.= 28.14 sqm.
SECOND FLOOR	
A. C. Rao	5.80X3.25= 18.85 sqm.
Total Area	243.21 sqm.

AREA OF DIFFERENT SECTION

LABORATORIES

TEXTILE	
A-269	9.65X5.95= 57.41sqm.
A-267	9.65X5.90= 56.93 sqm.
A-264	12.30X6.30= 77.49 sqm.
A-265	9.65X6.20= 59.83 sqm.
A-262	6.30X9.05= 57.01 sqm.
A-263	9.65X9.05= 87.33 sqm.
A-140	18.65X56.25= 1049 sqm.
A-142	6.30X6.20= 39.06 sqm.
A-143	9.60X5.95=57.12 sqm.
A-146	9.60X5.95= 37.48 sqm.
A-145	9.60X5.95= 57.12 sqm.

A-149	$9.60 \times 5.95 = 57.12$ sqm.
Analytical A-154	$9.75 \times 5.75 = 56.06$ sqm.
Micro Analytical A-154A	$9.75 \times 6.10 = 59.47$ sqm.
Analytical A-155	$9.75 \times 5.80 = 56.55$ sqm.
Total Area	1924.56 sqm.

PHARMACEUTICAL	
A-260	$6.30 \times 5.95 = 37.48$
A-261	$9.65 \times 9.00 = 86.85$ sqm.
A-257	$9.65 \times 9.65 = 93.12$ sqm.
A-248	$12.70 \times 9.80 = 124.46$ sqm.
A-249	$9.80 \times 5.95 = 58.31$ sqm.
A-250	$12.25 \times 6.15 = 75.33$ sqm.
A-250A	$6.45 \times 6.15 = 75.33$ sqm.
A-243	$18.85 \times 6.70 = 126.29$ sqm.
A-241	$12.40 \times 5.80 = 71.92$ sqm.
A-240	$12.40 \times 15.30 = 189.72$ sqm.
A-239	$12.40 \times 6.35 = 78.74$ sqm.
A-239A	$12.40 \times 6.20 = 76.88$ sqm.
A-294	$6.35 \times 2.50 = 15.87$ sqm.
A-293	$9.90 \times 6.35 = 62.86$ sqm.
A-288	$6.45 \times 6.35 = 40.95$ sqm.
A-286	$6.35 \times 5.95 = 37.78$ sqm.
A-284	$6.35 \times 3.80 = 24.13$ sqm.
Total Area	1240.35 sqm.

FOOD AND FERMENTATION

Room No	Area in sqm
A-283	$8.12 \times 6.35 = 51.75$ sqm.
A-285	$6.35 \times 4.25 = 26.98$ sqm.
A-289	$16.5 \times 6.35 = 104.77$ sqm.
A-238	$12.5 \times 5.55 = 69.37$ sqm.
A-239	$12.5 \times 7.1 = 88.75$ sqm.
A-218	$6.4 \times 7 = 44.8$ sqm.
A-216	$6.4 \times 1.85 = 11.84$ sqm.
A-208	$6.4 \times 6.2 = 39.68$ sqm.
A-211	$9.2 \times 5.85 = 53.82$ sqm.
A-213	$9.2 \times 6.05 = 55.66$ sqm.
A-215	$9.2 \times 3.9 = 35.88$ sqm.
A-215A	$6.65 \times 5 = 33.25$ sqm.
A217	$5.0 \times 2.45 = 12.25$ sqm.

POLYMER CENTRE (FIRST Floor)

Area in sqm
$23.0 \times 6.35 = 146.05$
$9.9 \times 6.3 = 62.37$
$604 \times 304 = 4096$
Total area = 878.18 sqm

CHEMISTRY DEPARTMENT

Room No	Area in sqm
A-219	$22.05 \times 9.2 = 230.46$ sqm.
A-229	$12.5 \times 9.2 = 115$ sqm.

A-231	9.2X6=55.2 sqm.
A-227	6.45X6.25=40.31 sqm.
A-230	6.45X4.55=29.34 sqm.
A-309	9.25X6.2=57.35 sqm.
A-306	9.25X4.45=41.16 sqm.
A-305	9.25X9.0=83.25 sqm.
A-301	12.15X13.45=163.41 sqm.
TOTAL AREA	815.48SQM sqm.

CHEMICAL DEPARTMENT

Room No	Area in sqm
A-001	9.75X6.5=63.37 sqm.
A-003	6.5X6.25=40.62 sqm.
A-004	6.5X5.85=38.02 sqm.
A-005	9.8X5.95=58.31 sqm.
A-122	9.6X6.45=61.92 sqm.
A-124	9.6X5.95=57.12 sqm.
A-125	6.35X5.95=37.78 sqm.
A-126	12.3X6.35=78.1 sqm.
L D A LAB	12.3 X6.65=81.79 sqm.
A-118	9.6X6.2=59.52 sqm.
A-117	18.65X 18.6= 346.89 sqm.
A-115	14.45 X6.3=91.03 sqm.
A-112	9.6X7.9=75.84 sqm.
A-110	9.6X8.25=79.2 sqm.
A-107	8.4X 6.15=51.66 sqm.

A-109	20.5X9.2= 188.6 sqm. 8.85X2.5=22.12 sqm.
A-106	9.1X 5.6= 50.96 sqm.
A-102	6.35X3.5=22.22 sqm.
A-101	14.9X12.45=185.5 sqm. 6.5X 2=12.1 sqm.

POLYMER CETR (SECOND FLOOR)

Area in sqm
23.0X6.35=146.05 sqm.
9.9X6.3=62.37 sqm.
6.4X6.4=40.96 sqm.
TOTAL AREA= 1952.05 Sqm

PHYSICS DEPARTMENT

Room No	Area in sqm
C-105	9.1X9=81.9 sqm.
C-101	12.1X6.7=81.07 sqm. 12.1X6.65=80.46 sqm.
C-202	10.1X8.4=84.84 sqm.
C-206	9.1X9=81.9 sqm.
C-207	9.1X8.85=80.53 sqm.
C-208	15.25X9.1=138.77 sqm.
C-209	12.05X 8.9=107.24 sqm.
TOTAL AREA	736.71 sqm.

OFW DEPARTMENT

Room No	Area in sqm
F-104	$10.75 \times 8.7 = 93.52$ sqm.
F-104C	$14.15 \times 6.3 = 89.14$ sqm.
F-206	$14.35 \times 15.25 = 218.83$ sqm.
F-203	$15.75 \times 7.3 = 114.97$ sqm.
F-305	$15.25 \times 10.85 = 165.46$ sqm.
F-301	$14.45 \times 8.8 = 127.16$ sqm.
TOTAL AREA	809.08Sqm

General Engineering Department

Room No	Area in sqm
E-103	$11.11.45 = 130.53$ sqm.
M.E. LAB	$6.65 \times 4.05 = 26.93$ sqm.
E-104	$8.7 \times 8.6 = 74.82$ sqm.
WORKSHOP	$32.9 \times 13.3 = 437.57$ sqm.
E-206	$9.85 \times 8.7 = 85.69$ sqm.
TOTAL AREA	755.54 sqm.

DYES DEPARTMENT

Entrance lab	$16.05 \times 4.5 = 72.22$ sqm.
First floor	$16.05 \times 4.52 = 72.54$ sqm.
Central lab	$19.7 \times 10.75 = 211.77$ sqm.
East Side	$10.85 \times 10.8 = 117.18$ sqm.
Synthesis lab	$22.75 + 3.9 \times 12.80 = 341.12$ sqm.

Total area	814.83 Sqm.
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PPV DEPARTMENT

Room No	Area in sqm
A-164	6.25X6.25=39.06 sqm.
A-164 COLOR LAB	6.25X5.95=37.18 sqm.
A-163	14.45X6.25=90.31 sqm.
A-169	16.45X6.25=102.81 sqm.
A-171	8.1X6.25=50.62 sqm.
A-134	12.25X12.15=148.62 sqm.
A-129	12.45X12.25=152.51 sqm.

POLYMER CENTRAL BUILDING

Room No	Area in sqm
ROOM NO 1	12.9X9.9=127.71 sqm.
ROOM NO 2	6.9X6.6=45.54 sqm.
ROOM NO 3	6.9X6.4=44.16 sqm.
ROOM NO 3	4.15X3.15=13.07 sqm.
Total area of laboratories	10778.58 sqm.

Appendix 11

SCImago Journal Rank, Source Normalized Impact per Paper and Impact Factor

Source title	SJR 2014	Impact Factor 2014	SNIP
AAPS Journal	1.111	3.799	Not Available
AAPS PharmSciTech	0.707	1.641	Not Available
ACS Catalysis	3.277	9.312	Not Available
ACS Sustainable Chemistry and Engineering	1.106	4.642	Not Available
Acta Crystallographica Section E: Structure Reports Online	0.221	Not Available	Not Available
Acta Pharmaceutica	0.353	Not Available	Not Available
Advance Journal of Food Science and Technology	0.272	Not Available	Not Available
Advanced Materials Letters	0.14	Not Available	Not Available
Advanced Powder Technology	0.74	2.638	1.653
Advanced Synthesis and Catalysis	2.078	5.663	Not Available
Advances in Food and Nutrition Research	0.428	Not Available	Not Available
Advances in Polymer Technology	0.377	Not Available	Not Available
Agro Food Industry Hi-Tech	0.151	Not Available	Not Available
AIChE Journal	1.009	2.748	Not Available
American Journal of Food Technology	0.478	Not Available	Not Available
Analytical Letters	0.351	Not Available	Not Available
Analytical Methods	0.571	1.821	Not Available
Angewandte Chemie - International Edition	5.149	Not Available	Not Available
Annals of Human Biology	0.554	Not Available	Not Available
Annals of the University Dunarea de Jos of Galati, Fascicle VI: Food Technology	0.131	Not Available	Not Available
Annual Review of Chemical and Biomolecular Engineering	3.606	Not Available	Not Available
Applied and Environmental Microbiology	1.615	Not Available	Not Available
Applied Catalysis B: Environmental	2.088	7.435	2.12
Applied Clay Science	0.863	Not Available	Not Available

Applied Microbiology and Biotechnology	1.174	3.337	Not Available
Applied Organometallic Chemistry	0.538	Not Available	Not Available
Applied Surface Science	0.913	Not Available	Not Available
Applied Thermal Engineering	1.523	2.739	2.108
Arabian Journal of Chemistry	0.523	Not Available	Not Available
Arkivoc	0.23	Not Available	Not Available
Asian Dyer	0.1	Not Available	Not Available
Asian Journal of Pharmaceutical Sciences	0.266	Not Available	Not Available
Asian Journal of Pharmaceutics	0.199	Not Available	Not Available
Asian Pacific Journal of Cancer Prevention	0.641	Not Available	Not Available
Asian Textile Journal	Not Available	Not Available	Not Available
Asia-Pacific Journal of Chemical Engineering	0.337	0.789	Not Available
Australian Journal of Chemistry	0.548	Not Available	Not Available
Autoimmune Diseases	0.573	Not Available	Not Available
Beilstein Journal of Organic Chemistry	1.054	Not Available	Not Available
Biocatalysis and Agricultural Biotechnology	0.44	Not Available	Not Available
Biochemical Engineering Journal	0.977	2.467	1.162
Biochemical Genetics	0.362	Not Available	Not Available
Biofuels	0.706	Not Available	Not Available
Biomaterials	2.937	8.557	2.059
BioMed Research International	0.613	Not Available	Not Available
Biomedicine and Preventive Nutrition	0.285	Not Available	Not Available
BioNanoScience	Not Available	Not Available	Not Available
Bioorganic and Medicinal Chemistry Letters	0.821	2.42	0.859
Biophysical Reviews	0.807	Not Available	Not Available
Bioprocess and Biosystems Engineering	0.633	1.997	Not Available
Bioresource Technology	2.199	4.494	2.013
Biosensors and Bioelectronics	1.866	Not Available	Not Available
Biotechnology Advances	2.619	9.015	3.485

Biotechnology and Bioprocess Engineering	0.441	1.113	Not Available
Biotechnology Progress	0.725	2.149	Not Available
Biotechnology Reports	Not Available	Not Available	Not Available
BioTechnology: An Indian Journal	0.103	Not Available	Not Available
BMC Systems Biology	1.189	Not Available	Not Available
BTRA Scan	0.101	Not Available	Not Available
Bulletin of Materials Science	0.417	Not Available	Not Available
Canadian Journal of Chemical Engineering	0.477	1.231	Not Available
Cancer Biotherapy and Radiopharmaceuticals	0.531	Not Available	Not Available
Cancer Nanotechnology	0.466	Not Available	Not Available
Carbohydrate Polymers	1.445	4.074	1.902
Carbohydrate Research	1.445	1.929	0.824
Catalysis Communications	1.081	3.699	1.308
Catalysis Letters	0.823	2.307	Not Available
Catalysis Science and Technology	1.695	5.426	Not Available
Catalysis Today	1.213	3.893	1.426
Catalysts	0.655	Not Available	Not Available
Cellulose Chemistry and Technology	0.424	Not Available	Not Available
ChemCatChem	1.692	4.556	Not Available
Chemical and Biochemical Engineering Quarterly	0.359	Not Available	Not Available
Chemical and Process Engineering - Inzynieria Chemiczna i Procesowa	Not Available	Not Available	Not Available
Chemical Biology and Drug Design	0.716	Not Available	Not Available
Chemical Communications	2.444	6.834	Not Available
Chemical Engineering and Processing: Process Intensification	0.811	2.071	1.422
Chemical Engineering and Technology	0.651	2.442	Not Available
Chemical Engineering Communications	0.387	1.104	Not Available
Chemical Engineering Journal	1.585	4.321	1.905
Chemical Engineering Research and Design	0.976	2.348	1.647
Chemical Engineering Science	1.053	2.337	1.589

Chemical Society Reviews	12.253	33.383	Not Available
Chemistry - A European Journal	2.234	5.731	Not Available
Chemistry Central Journal	0.55	Not Available	Not Available
Chemistry Letters	0.561	Not Available	Not Available
Chemometrics and Intelligent Laboratory Systems	0.85	Not Available	Not Available
Chemosphere	1.409	Not Available	Not Available
Chinese Journal of Catalysis	0.476	Not Available	Not Available
Chirality	0.516	Not Available	Not Available
Chromatographia	0.531	1.411	Not Available
Clean Technologies and Environmental Policy	0.652	Not Available	Not Available
Clinical Pharmacology in Drug Development	0.401	Not Available	Not Available
Colloids and Surfaces A: Physicochemical and Engineering Aspects	0.793	2.752	1.219
Colloids and Surfaces B: Biointerfaces	1.099	4.152	1.453
Colourage	Not Available	Not Available	Not Available
Combinatorial Chemistry and High Throughput Screening	0.441	1.222	Not Available
Combustion Science and Technology	0.439	0.991	Not Available
Composite Interfaces	0.311	Not Available	Not Available
Computational Biology and Chemistry	0.464	Not Available	Not Available
Computer Aided Chemical Engineering	0.228	Not Available	Not Available
Computers and Chemical Engineering	1.126	2.784	1.625
Construction and Building Materials	1.486	Not Available	Not Available
Corrosion Engineering Science and Technology	0.368	Not Available	Not Available
Critical Reviews in Therapeutic Drug Carrier Systems	0.963	Not Available	Not Available
Current Computer-Aided Drug Design	0.35	Not Available	Not Available
Current Drug Targets	1.157	Not Available	Not Available
Current Nanoscience	0.333	Not Available	Not Available
Current Opinion in Biotechnology	2.798	Not Available	Not Available

Current Organic Chemistry	0.527	Not Available	Not Available
Current Pharmaceutical Design	1.087	Not Available	Not Available
Current Trends in Biotechnology and Pharmacy	0.158	Not Available	Not Available
Dalton Transactions	1.283	4.197	Not Available
DARU, Journal of Pharmaceutical Sciences	0.453	Not Available	Not Available
Desalination	1.761	3.756	2.145
Desalination and Water Treatment	0.433	1.173	Not Available
Designed Monomers and Polymers	0.607	Not Available	Not Available
Drug Delivery and Translational Research	0.568	Not Available	Not Available
Drug Development and Industrial Pharmacy	0.73	2.101	Not Available
Drug Discovery Today: Technologies	0.753	Not Available	Not Available
Drying Technology	0.627	Not Available	Not Available
Dyes and Pigments	0.943	3.966	1.352
Ecological Modelling	1.066	Not Available	Not Available
E-Journal of Chemistry	0.204	Not Available	Not Available
Electroanalysis	0.63	Not Available	Not Available
Energy and Fuels	1.313	2.79	Not Available
Energy Conversion and Management	1.842	4.38	2.705
Engineering in Life Sciences	0.675	Not Available	Not Available
Environmental Chemistry Letters	0.689	Not Available	Not Available
Environmental Microbiology	2.425	Not Available	Not Available
Environmental Progress and Sustainable Energy	0.519	1.403	Not Available
Enzyme and Microbial Technology	0.973	2.322	1.152
Eurasian Journal of Analytical Chemistry	0.157	Not Available	Not Available
European Journal of Integrative Medicine	0.258	0.777	0.566
European Journal of Lipid Science and Technology	0.672	1.812	Not Available
European Journal of Medicinal Chemistry	1.004	3.447	1.611
European Journal of Organic Chemistry	1.051	3.065	Not Available
European Journal of Pharmaceutics and Biopharmaceutics	1.309	3.85	1.533

European journal of pharmaceutics and biopharmaceutics : official journal of Arbeitsgemeinschaft für Pharmazeutische Verfahrenstechnik e.V	1.309	3.85	1.533
European Polymer Journal	1.023	3.005	1.436
Fibers and Polymers	0.416	Not Available	Not Available
Flavour and Fragrance Journal	0.763	1.97	Not Available
Fluid Phase Equilibria	0.929	2.2	1.22
Food and Bioproducts Processing	1.139	2.474	2.043
Food and Function	0.913	Not Available	Not Available
Food Bioscience	0.316	Not Available	Not Available
Food Chemistry	1.42	3.391	1.93
Food Hydrocolloids	2.004	Not Available	Not Available
Food Research International	1.345	Not Available	Not Available
Food Science and Biotechnology	0.367	0.653	Not Available
Frontiers in Microbiology	1.585	Not Available	Not Available
Frontiers in Pharmacology	1.338	Not Available	Not Available
Frontiers of Chemical Science and Engineering	0.28	Not Available	Not Available
Fuel	1.568	3.52	2.195
Fuel Cells	0.592	Not Available	Not Available
Fuel Processing Technology	1.571	Not Available	Not Available
Future Medicinal Chemistry	0.983	Not Available	Not Available
Gene	0.86	2.138	0.736
Genetic Testing and Molecular Biomarkers	0.483	Not Available	Not Available
Green Chemistry	0.118	8.02	Not Available
Green Chemistry Letters and Reviews	0.341	1.327	Not Available
Heterocyclic Communications	0.201	Not Available	Not Available
Hydrocarbon Processing	Not Available	Not Available	Not Available
Hydrometallurgy	1.247	Not Available	Not Available
Indian Chemical Engineer	0.142	Not Available	Not Available
Industrial and Engineering Chemistry Research	0.948	2.587	Not Available

International Journal of Pharmaceutics	1.19	3.65	1.474
JAOCS, Journal of the American Oil Chemists' Society	0.676	1.541	Not Available
Journal of Adhesion Science and Technology	0.379	0.961	Not Available
Journal of Applied Polymer Science	0.611	Not Available	Not Available
Journal of Biomedical Nanotechnology	0.716	Not Available	Not Available
Journal of Bioscience and Bioengineering	0.659	1.884	0.865
Journal of Biotechnology	0.983	2.871	1.083
Journal of Catalysis	2.455	6.921	2.242
Journal of Chemical and Engineering Data	0.965	2.037	Not Available
Journal of Chemical Sciences	0.343	Not Available	Not Available
Journal of Chemical Technology and Biotechnology	0.865	2.349	Not Available
Journal of Chemistry	0.208	Not Available	Not Available
Journal of Chromatographic Science	0.456	1.363	Not Available
Journal of Cleaner Production	1.588	3.844	2.364
Journal of Coatings Technology Research	0.46	1.298	Not Available
Journal of Controlled Release	2.159	7.705	1.977
Journal of Dispersion Science and Technology	0.293	0.795	Not Available
Journal of Fluorescence	0.473	1.927	Not Available
Journal of Food Engineering	1.354	2.771	1.887
Journal of Food Science and Technology	0.585	2.203	Not Available
Journal of Hazardous Materials	1.644	4.529	2.179
Journal of Heterocyclic Chemistry	0.285	0.787	Not Available
Journal of Luminescence	0.77	2.719	1.347
Journal of Molecular Catalysis A: Chemical	1.015	3.615	1.42
Journal of Molecular Catalysis B: Enzymatic	0.69	2.128	0.988
Journal of Molecular Liquids	0.595	2.515	1.104
Journal of Nanoscience and Nanotechnology	0.318	Not Available	Not Available
Journal of Organic Chemistry	1.777	4.721	Not Available
Journal of Pharmaceutical Sciences	0.909	2.59	Not Available
Journal of Physical Chemistry A	1.039	2.693	Not Available
Journal of Physical Chemistry B	1.285	3.302	Not Available

Journal of Physical Chemistry C	1.858	4.772	Not Available
Journal of Physics and Chemistry of Solids	0.632	1.853	1.01
Journal of Physics B: Atomic, Molecular and Optical Physics	0.964	1.975	Not Available
Journal of Polymer Materials	0.153	Not Available	Not Available
Journal of Polymer Research	0.608	1.92	Not Available
Journal of Radioanalytical and Nuclear Chemistry	0.43	1.034	Not Available
Journal of Renewable and Sustainable Energy	0.393	Not Available	Not Available
Journal of Scientific and Industrial Research	0.237	Not Available	Not Available
Journal of Sol-Gel Science and Technology	0.539	1.532	Not Available
Journal of Surfactants and Detergents	0.56	1.685	Not Available
Journal of the American Chemical Society	5.567	12.113	Not Available
Journal of the Science of Food and Agriculture	0.744	1.714	Not Available
Journal of the Textile Association	0.1	Not Available	Not Available
Journal of the Textile Institute	0.442	0.722	Not Available
Journal of Thermoplastic Composite Materials	0.458	Not Available	Not Available
Journal of Water Process Engineering	Not Available	Not Available	Not Available
LWT - Food Science and Technology	1.219	Not Available	Not Available
Materials Letters	0.85	Not Available	Not Available
Medicinal Chemistry Research	0.409	Not Available	Not Available
Melliand International	Not Available	Not Available	Not Available
Monatshefte fur Chemie	0.332	Not Available	Not Available
New Journal of Chemistry	0.925	Not Available	Not Available
Nuclear Engineering and Design	1.021	0.952	1.601
Organic and Biomolecular Chemistry	1.227	3.562	Not Available
Organic Process Research and Development	0.919	2.528	Not Available
Particulate Science and Technology	0.213	0.523	Not Available
Particuology	0.684	2.11	1.313
Petroleum Science and Technology	0.294	Not	Not

		Available	Available
Petroleum Technology Quarterly	0.105	Not Available	Not Available
Physical Chemistry Chemical Physics	1.606	4.493	Not Available
Physical Review A - Atomic, Molecular, and Optical Physics	1.828	Not Available	Not Available
Pigment and Resin Technology	0.28	0.788	Not Available
Polymer Degradation and Stability	1.201	3.163	1.856
Polymer Engineering and Science	0.5	1.52	Not Available
Proceedings of the National Academy of Sciences of the United States of America	Not Available	Not Available	Not Available
Process Biochemistry	0.905	2.516	1.357
Progress in Organic Coatings	0.902	2.358	1.53
RSC Advances	1.026	3.84	Not Available
Separation and Purification Technology	1.171	3.091	1.467
Separation Science and Technology	0.481	1.171	Not Available
Synlett	0.859	Not Available	Not Available
Synthesis (Germany)	0.103	Not Available	Not Available
Synthetic Communications	0.284	0.929	Not Available
Tenside, Surfactants, Detergents	0.24	0.981	Not Available
Tetrahedron Letters	0.72	2.379	0.776
Ultrasonics Sonochemistry	1.429	4.321	2.075
Water Science and Technology	0.541	1.106	Not Available

Appendix 12
List of Research Award by faculty & Students

Date	Name	Accomplishment
14/12/2015	ICT	FICCI Awards – Two awards
	Prof G D Yadav	National Eminence Award – in the sadabhishekam Mahotsavam of His Holiness Jayendra Saraswathi
	Prof.S S. Lele Prof.A.M. Iali	UAE-ICT distinguished Alumni Award -2015-Academic category
	Prof. Rekha Singhal	Professor Man Mohan Sharma Award for Science and Technology –Marathi Vidnyan Parishad- 2015
	Prof. A.B. Pandit	Elected for the Fellowship of TWAS 2015
	Prof . P .A. Mahanwar Dr. Sadhana Sathye Dr. V. K. Rathod	Elected as fellows of Maharashtra Academy of Sciences - 2015
	Prof. Vandana Patravale	OPPI Woman Scientist Award for the year 2015
	Dr. S. S. Arya	Selected as 2016 ILSI – International Life Science Institute- Malaspina International Scholar
	Prof. S. S. Bhagwat	Delivered an invited lecture at the Asian conference on colloid and interface science in Japan in November 2015
	Dr. Parag Gogte	Delivered invited lecture at AOSS- 2 – second Asia Oceania sonochemical society conference in Kulalampur, Malaysia in July 2015 Visited Istanbul under the INSA- Turkish academy of sciences exchange programme October 2015
	Dr. Anant Kapadi	Appointed as the Associate Editor of RSC advances - a royal society journal
	Dr. Akshay Rane	Went as a resource person for CSIR NET training programme held at ISC Mumbai
	Dr. Dipanwita Das Dr. Satyagit Saha	Received DST- SERB (Science and Engineering Research Board) start up research grant in Sep. 2015
01/07/2015	Dr. A. R. Kapdi	Received 54,000 Euro from the AVH foundation for the period of 3 years
15/05/2015	Prof. G.D.Yadav	A project proposal submitted to the Kolhapur Municipal Corporation for handling the pollution of the Rankala Lake of Kolhapur was approved
	Dr. Prakash Vaidya	received University of Liverpool - India Fellowship Award 2015

	Dr. D. V. Pinjari	Received Fulbright OLF Award 2015 sponsored by CIES and OIE (state Departments, Federal Government, USA) in January 2015
	Dr. V. B. Patravale	Received Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists - 2013 by Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) in January 2015
	Dr. Akshay Rane	Invited talk at an international conference ICMACS held at Don bosco College, Kannur, Kerela
15/01/2015	Prof. G. D. Yadav	American Chemical Society (ACS) published a Festschrift in Industrial and Engineering Chemistry Research Journal in honor
	Prof. G. D. Yadav	Elected as Chair of ACS India International Chemical Sciences Chapter
	Prof. G. D. Yadav	The Indian Chemical Council of Chemist gives Life Time Achievement award and a Gold Medal on 15 th December 2014 at Dhanbad
	Prof. G. D. Yadav	The Indian Institute of Chemical Engineers and Reliance Industries awarded "Dhirubhai Ambani Oration Award CHEMCON-2014, Chandigarh
	Prof. V. B. Patravale	Dr. P. D. Patil Best Pharmaceutical Scientist of the year Award – 2014 by (APTI) M.S.
	Prof. B. N. Thorat	VASVIK award in chemical Science and Technology
	Prof. Pandit	Wipro Earthian Award 2013.
	Prof. S. S. Bhagwat	8 th Bry Air Awards for excellence in HVAC and R (2013)
	Prof. A. M Lali	VASVIK award in Biological Science and Samshodhanvikas Kendra Technology award by Vividhalakshi Audyogik, Mumbai
	Prof. B. M. Bhanage	Prof. M.M. Sharma Sci. & Tech. Award" by Marathi Vidnyan Parishad for the year 2014
	Dr. J. M. Nagarkar	Elected as Fellow of Maharashtra Academy of Sciences
	Dr. Parag Gogate	Elected as Fellow of Maharashtra Academy of Sciences Received SCEJ Award for outstanding Asian researcher and engineers in Japan
	Dr. D.V. Pinjari	Young Engineer Award for 2014-2015 "Wipro Earthian Award 2013"by Wipro foundation Banglore and Dr. M. P. Chary Memorial Award 2013 by IICHe Elected as "Young associate" to Maharashtra Academy of Sciences.
	Dr. D.V. Pinjari	Swiss Government Excellence Scholarship and Fullbright Neharu International Fellowships for postdoctoral studies 2013-2014

	Dr. Sujit Jogwar	Late (Mrs.) Padma Kelkar endowment award
	Dr. Neetu Jha	DAE ICT Young research scientist award
	Dr. Parag Nemade	DAE ICT Young research scientist award A project grant through DBT-Bill and Melinda Gates foundation for the project Re-Invent the Toilet Challenge (RTTC)
	Dr. Ratnesh Jain	N. R. Kamath book Award for the book entitled Nanoparticle Drug Delivery : Perspective on the Transition from the Laboratory to Market' (Woodhead Publishing Series in Biomedicine, Elsevier, 2014)
31/05/2014	Prof. G. D. Yadav	Vice Chancellor, has been recommended an extension of his tenure as Vice Chancellor and R.T. Mody Distinguished Professor for a further period of five years i.e. up to 28 th May, 2019
	Prof. G. D. Yadav	Delivered a series of lectures at the Imperial College, London Elected as a member of the editorial board of Green chemistry, a RSC journal
	Prof. Pandit	Delivered M.G. Subbarao memorial lecture at NIT, Suratkal and Prof. Gopal Tripathi memorial lecture at IIT-BHU on 7 th February 2014 and 11 th April 2014 respectively
	Prof. Teli	Received the 'Textile Association India- Ratna' award on 9 th April 2014
	Dr. Ajit Kumar	Co author of two books (i) 'A basic course in real analysis and (ii) Calculus using sage'
	Dr. Parag Gogate	Outstanding Asian Engineer and Researcher award from the Society of Chemical Engineers, Japan (SCEJ) in March 2014
	Dr. Anant Kapdi	Received the DAAD scholarship for a Visiting Scientist to carry out collaborative research at Technische University at Munchen, Germany
16/01/2014	Prof. G. D. Yadav	Received the "B.P. Godrej Life Time Achievement Award" of IChE for the year 2013 on 27 th December 2013
	Prof. G. D. Yadav	Bestowed with I.C.C. D. M. Trivedi Lifetime Achievement Award for his Contributions to Indian Chemical Industry (Education & Research) for the year 2012.
	Prof. V. Patravale	Received a grant from Melinda Gates foundation for their work on eco-friendly nano vaccine for nasal immunization.
	Prof. P. Devarajan	Selected for Prof. C.J. Shishoo award for research in pharmaceutical sciences by the association of pharmacy teachers of India
	Prof. N. Sekar	Elected as the Members of the Maharashtra Academy of Sciences
	Dr. V.N. Telvekar	Elected as the Members of the Maharashtra Academy of Sciences

	Dr. S. T. Maske	Elected as the Young associate of the academy.
	Prof. A. M.Lali	The vasavik award in the category of biological sciences and technology from the Vividlakshi Audyogik Samshadan Vikas Kendra
	Prof. A. B. Pandit, Dr. S. P. Deshmukh Dr. D. V. Panjari	Received the Wipro Earthian award. They would be the Mentors of the municipal solid waste energy and environment project
16/07/2013	Prof. G. D. Yadav	Shri. D.M. Trivedi Lifetime achievement award of ICC in education and research
31/05/2013	Prof. N. Sekar	DST will be part of a bilateral three years programme between India and Argentina. He will be visiting the University of Beunos Aires in June 2013 to deliver a series of talks under this programme
	Prof. A.R. Juvekar	Received the best research paper award from the AI Ameen College of Pharmacy. This award was given to her in the 17 th Annual Convention of APTI at Manipal.
	Dr. G.U.Chaturbuj	Received a post doctoral fellowship for one year from the UGC under the Obama – Singh Knowledge Initiative scheme – 2012
	Dr. Anant Kapdi	Recipient of the Alexander Von Humboldt fellowship is at Germany from 25 th May – 25 th July 2013
	Dr. S.T. Maske	Received the Third National Award for Technology Innovation from the Ministry of Chemicals and Petrochemicals, Government of India
	Dr. Prajakta Dandekar Jain	Received the Biocare Award for Women Scientists for the year 2013 from the DBT
31/12/2012	Prof. S.S. Bhagwat	received IChE NOCIL Award for excellence in design of process equipment for 2012 on 27 th December 2012
	Prof. P.V. Devarajan	nominated as a member of on the board of scientific advisors of the Controlled Release Society of USA
	Prof. A.B. Pandit	The INSA Teacher Award-2012 (under the age of 55).
	Dr. A. W. Patwardhan	Elected as fellow of Maharashtra Academy of Sciences.
	Dr. Vandana B. Patravale	Got the BV DUPCP- Pharma Teacher Award for the year 2012
	Dr. Prajakta Dandekar Jain and Dr. Ratnesh Jain	Received DAE Young Scientist Award (2012). Young Associateship of the Maharashtra Academy of Sciences
	Dr. Anant Kapdi	The INSPIRE FACULTY AWARD Elected as a Young Associate of the Maharashtra Academy of Sciences He also received a return fellowship by Alexander Van

		Humboldt foundation to visit Germany
	Dr. Parag Gogate	Invited to deliver lectures at 18 th Advance Oxidation Technology Conference at Florida, USA. He has also been invited to deliver lectures at the process intensification workshop, Ireland
	Prof. G.D. Yadav	Appointed to the Council of Deemed Universities with the Minister of Human Research Development as the Chairman
03/07/2012	Dr. Ratnesh Jain	Jan-2012 Ramanujan Fellowship April 2012- Ramlingaswamy re-entry fellowship INSPIRE faculty fellowship
	Dr. Prajakta Dandekar- Jain	Dr. Jonh Kapoor Assistant Professor of pharmaceutical Technology Ramanujan Fellow, DST, GOI

Students

Professor G. M. Abyankar Research Presentation Award for Four Years

Year	Student Name	Department	Research Guide	Amt. in Rs.
2012-2013 (13.04.2012)	Ms. Neha Khurana	Department of Fibres and Textile Processing Technology	Professor R. V. Adivarekar	3,000/-
	Ms. Puja S. Sandhor	Department of Pharmaceutical Sciences and Technology	Professor A. R. Juvekar	3,000/-
	Mr. Karan Malhotra	Department of Chemical Engineering	Dr. C. S. Mathpati	3,000/-
	Ms. Clara B. Fernandes	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	3,000/-
	Ms. Megha V. Swami	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	3,000/-
	Mr. Munish Arora	Department of Fibres and Textile Processing Technology	Professor S. R. Shukla	3,000/-
	Mr. Kailas K. Sanap	Department of Chemistry	Professor S. D. Samant	3,000/-
	Mr. Jayant Sancheti	Department of Pharmaceutical Sciences and Technology	Dr. Sadhana S. Sathaye	3,000/-
	Ms. Asmita S. Phule	Department of Food Engineering and Technology	Dr. U. S. Annapure	3,000/-
	Mr. Ashish G. Waghmare	Department of Food Engineering and Technology	Dr. Shalini S. Araya	3,000/-
2012-2013	Mr. Anandkumar	Department of Chemical Engineering	Dr. P. D. Vaidya	1,400/-

(10.12.2012)	Jain			
	Ms. Anuja Kulkarni	Department of Food Engineering and Technology	Dr. Laxmi Ananthanarayan	1,400/-
	Ms. Ashwini Tilak	Department of Food Engineering and Technology	Professor Rekha S. Singhal	1,400/-
	Mr. Ashish Waghmare	Department of Food Engineering and Technology	Dr. S. S. Arya	1,400/-
	Mr. Saravanan Devendran	Department of Chemical Engineering	Professor G. D. Yadav	1,400/-
	Mr. Hitesh Badgujar	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	3,000/-
	Mr. Javed Sheikh	Department of Fibres and Textile Processing Technology	Professor M.D. Teli	3,000/-
	Mr. Machhindra Bhalerao	Department of Chemical Engineering	Professor A. V. Patwardhan	1,400/-
	Mr. Mandar Badve	Department of Chemical Engineering	Professor A. B. Pandit	3,000/-
	Ms. Nupur Nagvekar	Department of Food Engineering and Technology	Professor S. S. Lele	1,400/-
	Ms. Pradnya Vaingankar	Department of Pharmaceutical Sciences and Technology	Professor P. D. Amin	1,400/-
	Mr. Ravindra Kanawade	Department of Chemical Engineering	Professor P. D. Vaidya	3,000/-
	Ms. Sonali Niphadkar	Department of Chemical Engineering	Dr. V. K. Rathod	1,400/-
	Mr. Swapnil Pakhale	Department of Chemical Engineering	Professor S. S. Bhagwat	1,400/-
	Mr. Vaibhav Tidke	Department of Chemical Engineering	Professor B. N. Thorat	1,400/-
	Mr. Vasant Borude	Department of Fibres and Textile Processing Technology	Professor S. R. Shukla	3,000/-
	Mr. Vinit Bajaj	Department of Food Engineering and Technology	Dr. U. S. Annapure	1,400/-
	Mr. Vinod Gokarna	Department of Physics	Dr. V. D. Deshpande	3,000/-
	Mr. Yogesh Mirage	Department of Chemical Engineering	Professor A. V. Patwardhan	3,000/-
2013-2014	Mr. Rahul P. Rathod	Department of Food Engineering and Technology	Dr. U. S. Annapure	1,500/-

(30.3.2013)	Ms. Sonali B. Gaikwad	Department of Food Engineering and Technology	Dr. Shalini S. Arya	1,500/-
	Ms. Pavitra K.	Department of Food Engineering and Technology	Dr. Shalini S. Arya	1,500/-
	Mr. Pandurang Marpalle	Department of Food Engineering and Technology	Dr. Shalini S. Arya	1,500/-
	Mr. Hanuman P. Kalmode	Department of Dyestuff Technology	Professor P. M. Bhate	1,500/-
	Mr. Kamlesh S. Vadagaonkar	Department of Dyestuff Technology	Professor P. M. Bhate	1,500/-
	Mr. Vikas S. Padalkar	Department of Dyestuff Technology	Professor N. Sekar	3,000/-
	Mr. Abhinav B. Tathe	Department of Dyestuff Technology	Professor N. Sekar	3,000/-
	Mr. Dipak S. Tathe	Department of Polymer and Surface Engineering	Professor R. N. Jagtap	3,000/-
	Mr. Prashant Gupta	Department of Polymer and Surface Engineering	Professor R. N. Jagtap	3,000/-
	Ms. Poonam B. Saindane	Department of Polymer and Surface Engineering	Professor R. N. Jagtap	3,000/-
	Ms. Snehal K. Balurkar	Department of Polymer and Surface Engineering	Professor R. N. Jagtap	1,500/-
	Mr. Achyut S. Khire	Department of Pharmaceutical Sciences and Technology	Professor P. R. Vavia	3,000/-
2013-2014 (13.11.2013)	Ms. Rashmi H. Prabhu	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	2,500/-
	Ms. Prachi B. Kharkar	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	2,500/-
	Mr. Siddiki Afsar Ali K. H.	Department of Pharmaceutical Sciences and Technology	Dr. V.N. Telvekar	2,500/-
	Mr. Pravin N. Nikam	Department of Physics	Dr. S. M. Pawade	2,500/-
	Ms. Shashee Bheron	Department of Food Engineering and Technology	Dr. U. S. Annapure	2,500/-
	Ms. Mruniya S. Nahire	Department of Pharmaceutical Sciences and Technology	Professor S. S. Sathaye	3,000/-
	Mr. Atul K.	Department of Pharmaceutical	Professor S. S.	3,000/-

	Bhardwaj	Sciences and Technology	Sathaye	
	Mr. Abhilash S. Singh	Department of Chemistry	Dr. J. M. Nagarkar	2,500/-
2014-2015 (26.03.2014)	Mr. Chaitanya Krishna S.	Department of Food Engineering and Technology	Dr. U. S. Annapure	2,500/-
	Ms. Yamuna Devi R	Department of Food Engineering and Technology	Dr. U. S. Annapure	2,500/-
	Mr. Manoj Malik	Department of Physics	Dr. R. R. Deshmukh	2,500/-
	Ms. Rajshree L. Shinde	Department of Pharmaceutical Sciences and Technology	Professor P.V. Devarajan	2,500/-
	Ms. Shweta S. Chawla	Department of Pharmaceutical Sciences and Technology	Professor P.V. Devarajan	2,500/-
	Mr. Vilas N. Malode	Department of Pharmaceutical Sciences and Technology	Professor P.V. Devarajan	2,500/-
	Mr. Atul Kori	Department of Chemical Engineering	Dr. S. B. Kale	2,500/-
	Mr. Jayant P. Rathod	Department of Chemical Engineering	Professor A. M. Lali	2,500/-
	Ms. Chaitali Vira	Department of Chemical Engineering	Professor A. M. Lali	2,500/-
	Ms. Gaurangi A. Deora	Department of Chemical Engineering	Professor A. M. Lali	2,500/-
	Ms. Azza S. Naik	Department of Food Engineering and Technology	Professor S. S. Lele	2,500/-
	Ms. Preshita P. Desai	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	3,000/-
	Ms. Anuja K. Jain	Department of Physics	Dr. R. R. Deshmukh	3,000/-
	Mr. Sachin B. Jadhao	Department of Chemical Engineering	Professor A. B. Pandit	3,000/-
	2014-2015 (5.10.2014)	Ms. Deepavali R. Thanekar	Department of Pharmaceutical Sciences and Technology	Professor A. R. Juvekar
Mr. Chandrakant R. Holkar		Department of Chemical Engineering	Professor A. B. Pandit	2,500/-
Ms. Anomitra Dey		Department of Chemical Engineering	Dr. Ratnesh Jain	2,500/-
Ms. Sandhya		Department of Pharmaceutical Sciences and Technology	Professor P.V. Devarajan	1,500/-

	Pranatharthiharan			
	Mr. Manoj N. Mali	Department of Polymer and Surface Engineering	Professor S. T. Mhaske	1,500/-
	Ms. Savita H. Bansode	Department of Polymer and Surface Engineering	Professor P. A. Mahanwar	1,500/-
	Ms. Shobha V. Desai	Department of Chemical Engineering	Professor S. S. Bhagwat	1,500/-
	Mr. Sachin V. Patil	Department of Oils, Oleochemicals and Surfactants Technology	Dr. A. P. Pratap	1,500/-
	Ms. Anita K. Sanap	Department of Dyestuff Technology	Dr. G. S. Shankarling	1,500/-
	Mr. Kishor G. Thorat	Department of Dyestuff Technology	Professor N. Sekar	1,500/-
	Mr. Chandrahas R. Vishwasrao	Department of Food Engineering and Technology	Dr. Laxmi Ananthanarayan	1,500/-
2015-2016 (26.3.2015)	Mr. Divakar R. Jaiswar	Department of Pharmaceutical Sciences and Technology	Professor P. D. Amin	2,000/-
	Mr. Avinash B. Gangurde	Department of Pharmaceutical Sciences and Technology	Professor P. D. Amin	2,000/-
	Mr. Jaywant N. Pawar	Department of Pharmaceutical Sciences and Technology	Professor P. D. Amin	2,000/-
	Ms. Shilpa Dawre	Department of Pharmaceutical Sciences and Technology	Professor P. V. Devarajan	2,000/-
	Mr. Darsheen J. Kotak	Department of Pharmaceutical Sciences and Technology	Professor P. V. Devarajan	2,000/-
	Mr. Prashant P. Mande	Department of Pharmaceutical Sciences and Technology	Professor P. V. Devarajan	2,000/-
	Ms. Priyanka Prabhu	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	2,000/-
	Ms. Shweta S. Lotankar	Department of Pharmaceutical Sciences and Technology	Dr. S. S. Sathaye	2,000/-
	Mr. Madhav Seervi	Department of Pharmaceutical Sciences and Technology	Dr. S. S. Sathaye	2,000/-
	Ms. Preeti Wavikar	Department of Pharmaceutical Sciences and Technology	Professor P. R. Vavia	3,000/-
2015-2016	Ms. Shanooba P M	Department of Food Engineering and Technology	Professor S. S. Lele	3,000/-
	Mr. Sandeep A.	Department of Food Engineering and	Professor R.	2,000/-

(26.3.2015)	Chaudhari	Technology	S. Singhal	
	Ms. Sunayana A. Jadhav	Department of Food Engineering and Technology	Dr. S. S. Arya	1,000/-
	Ms. Pankhuree Singh	Department of Food Engineering and Technology	Dr. S. S. Arya	1,000/-
	Mr. Nitin B. Gawali	Department of Pharmaceutical Sciences and Technology	Professor A. R. Juvekar	2,000/-
	Mr. Mayank R. Patel	Department of Pharmaceutical Sciences and Technology	Professor P. R. Vavia	2,000/-
	Ms. Jayashree K. Mali	Department of Pharmaceutical Sciences and Technology	Dr. V. N. Telvekar	1,000/-
	Mr. Sudeep S. Pukale	Department of Pharmaceutical Sciences and Technology	Professor V. B. Patravale	2,000/-
	Mr. Sanket P. Valia	Department of Fibres and Textile Processing Technology	Professor M. D. Teli	3,000/-
	Ms. Vrushali M. Kulkarni	Department of Chemical Engineering	Dr. V. K. Rathod	3,000/-

Appendix 13
Department of Chemical Engineering

Sr. No.	Faculty	Awards and Honours	Year
1	Bhagwat SS	IChE NOCIL Award	2012
		Prof. R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem. Engg.)	2013
		First prize in Bry-Air asia awards for the HVAC & R	2013
		CSMCRI-Chemcon Distinguished Speaker Award Chemcon	2014
2	Yadav GD	Padma shri Award	2016
		Adinath Life and Plant Sciences Foundation Award	2015
		Khosla National Award (IIT-Roorkee)	2012
		Karveer Bhushan, Rotary Club of Karveer Kolhapur for contributions to profession and society	2015
		Life Time Achievement Award and Gold Medal, Indian Chemical Council	2014
		IPCL Award for Best M Tech Thesis (Student : Abhijit Talpade, Guide:Prof G.D. Yadav), Indian Society for Technical Education, Dec. 2014	2014
		D. M. Trivedi Lifetime Achievement Award for Contribution to Indian Chemical Industry (Education & Research) for the year 2012- Indian Chemical Council	2013
		Dr B.P. Godrej Life Time Achievement Award by Indian Institute of Chemical Engineers	2013
		IGCW Award for contributions to Green Chemistry in India	2011
Dr C.V. Raman Award for Excellence in Teaching and Research in Engineering and Technology, IES Bhopal, Dec. 13, 2011	2011		
3	Gaikar VG	IChE-D.O.S.T. Dr. S.K. Sharma Medal and CHEMCON Distinguished Speaker Award	2013
4	Pandit AB	J.C.Bose, fellow, Govt. of India	2015

		Prof. R.A. Rajadhyaksha Best Teacher Award of UDCT,	2011
		Best Reviewer Award, Elsevier UK	2011
		IES C.V. Raman Award for Best Engineering Teacher	2010
		INSA, Best Teacher Award	2012
		Wipro Earthian Award	2013
		Best Teacher Award (Final Year B. Tech.)	2012
		Vishvakarma medal of Indian National Science Academy	2015
		Fellow, The world Academy of Sciences	2015
5	Lali AM	UAA-ICT Distinguished Alumnus Awards in Academics	2015
		Vasvik Award in Biological Sciences & Technology by Vividhlaxi Audyogik Samshodhan Vikas Kendra, Mumbai,	2013
6	Joshi JB	Padma Bhusan award	2014
7	Thorat BN	The VASVIK Award in the field of Chemical Sciences and Technology	2012
		Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) for Innovation, Solar Grain Dryer	2013
		Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) for Innovation, Cassavatech (Drying of cassava)	2013
		Dell Social Innovation Award of USD 60,000 (Sixty thousand US Dollar) for developing "Solar Conduction Dryer",	2013
		Award for Excellence in Drying and Promotion of the Nordic Drying Conferences in Asia at 5 th Nordic Drying Conference, Helsinki, Finland,	2011
		Adinath Life and Plant Sciences Foundation Award	2015
		IChE NOCIL Award	2015
8	Rathod VK	Young Scientist Maharashtra Academy of Sciences	2013
		Fellow of Maharashtra Academy of Sciences (FMSc)	2015

9	Patwardhan AW	R. A. Rajadhyaksha Best Teacher Award on the basis of evaluation by students at ICT:	Second Year B. Chem. Engg: 2011 – 2012, 2013 – 2014 Second Year B. Tech.: 2009 – 2010
		Fellow, Maharashtra Academy of Sciences	2012
		Herdillia Award of I. I. Ch. E. for excellence in Basic Research	2013
10	Dalvi VH	Best Teacher Award	2011
11	Gogate PR	Anil Kumar Bose Medal of the Indian National Science Academy (INSA),	2011
		Invited lecture and Session Chair at Advanced Oxidation Technologies Conference (18) at Jacksonville, Florida, USA	2012
		Young Associate of Indian National Academy of Engineering	2012
		Chartered Engineer and Member, Institution of Chemical Engineers, UK	2013
		Member, International Organizing committee and Invited Lecture/Session Chair, 19th Advanced Oxidation Technologies Conference at California, USA,	2013
		Member, Editorial Board, Advances in Environmental Research – An international journal,	2013-2015
		The SCEJ Award for Outstanding Asian Researcher and Engineer given by The Society of Chemical Engineers, Japan,	2013
		Hindustan Lever Biennial Award for the Most Outstanding Chemical Engineer of the Year Under The Age Of 45 Years of Indian Institute of Chemical Engineers,	2013
Fellow, Maharashtra Academy of Sciences,	2014		
12	Jain RD	N. R. Kamath Book Award for book entitled Nanoparticulate Drug Delivery: Perspectives on the Transition from Laboratory to	2014

		Market ^{cs} , (Woodhead Publishing Series in Biomedicine), Woodhead Publishing (Elsevier),	
		DAE Young Scientist Award	2012
		Young Associateship from Maharashtra Academy of Sciences for the contribution and Engineering and Technology	2012
		Ramalinga swami Fellowship, Department of Biotechnology, Govt. of India, March,	2012
		INSPIRE Faculty Fellowship, Department of Sciences and Technology and Indian National Sciences Academy, Govt. of India, June,	2012
		Ramanuajn Fellowship, Department of Sciences and Technology, Govt. of India, August,	2011
		Alexander von Humboldt Postdoctoral Research Fellowship by Alexander von Humboldt Foundation, Germany	2011
13	Pinjari DV	Awarded Fulbright OLF Award 2015 by OIE and CIES (State Departments, US Federal Government, Washington, USA)	2015
		Awarded Young Engineers Award	2014-2015
		Awarded Wipro Earthian Award by Wipro foundation, Bangalore (India)	2013
		Young Associate, Maharashtra Academy of Science	2013
		Awarded M. P. Chary Memorial Award	2013
		Swiss Government Excellence Scholarship program.	2013-2014
		Awarded Dr. K. H. Gharda Best PhD Thesis Award	2013.
		Awarded Ambuja Cement Best Thesis Award	2013
14	Sontakke SM	Awarded DST Inspire Fellowship. DST, Govt. of India.	2013
15	Vaidya PD	Best Teacher Award at Institute of Chemical Technology	2014
16	Jogwar SS	Smt. Padma Kelkar Endowment Award for Encouragement to New Chemical Engineering Faculty, 2014.	2014
		DST INSPIRE Faculty Fellowship, 2013-2018.	2013-2018

	Doctoral Dissertation Fellowship, University of Minnesota, 2010-11	2010-2011
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Department of Chemistry

Sr. No.	Faculty	Awards & Honours
1	Prof. B. M. Bhanage	Fellow of the Royal Society of Chemistry, UK (FRSC)
		Prof. M.M. Sharma Science and Technology Award (Rs 1 lakh and Citation) for contributions in research by Marathi Vidyan Parishad
		Selected on Advisory Board on the RSC Journal "Catalysis Science and Technology"
		Awarded Bronze Medal for the contribution in the field of Chemical Sciences by Chemical Research Society of India (CRSI) on 5th Feb 2012 in RSC-CRSI symposium Trivandrum Kerala
		ISCMA Outstanding Professor Award by Indian Speciality Chemical Manufacturers Association for excellence in academic field for the year 2012.
2	Prof. R V Jayaram	Best Woman Teacher Award (2015) – Association of Chemistry Teachers, India
		Resource person, Orientation-cum-Selection Camp for selecting Indian team for International Chemistry Olympiad
		Team Leader – 43 rd International Chemistry Olympiad
3	Prof. S. D. Samant	President, Association of Chemistry Teachers (2013 – 2016)
4	Dr. J. M. Nagarkar	Fellow of Maharashtra Academy of Sciences (F.MASc.)
		Received "Expert Featured Research Article Honorarium" of \$500 for an article entitled "Properties of vegetal oil based creams in skin care" the article was published in Cosmetics and Toiletries

5	Dr. Anant Kapdi	Biography selected in Marquis Who's Who in the World, 2014
		DAAD Fellowship for Scientists (2nd June 2014 to 15th July 2014) - with Professor Moniek Tromp in Catalysis Research Centre, Technische Universitat Munchen, Germany.
6	Dr. Vijay Kumar	Biography selected in Marquis Who's Who in the World, 2015
		Israeli Science Foundation (ISF) Postdoctoral Fellowship at BenGurion University of Negev.2011.
		Sri Gopala Kishan Vepachedu Memorial Best Senior Research Fellow Award for outstanding publications at IICT, Hyderabad, 2011

Department of Fibres & Textile Processing Technology

Sr. No.	Faculty	Awards & Honours
1	Prof. M. D. Teli	Hon. Fellow of Textile Association of India
		Fellow of the Maharashtra Academy of Sciences
		Academic excellence award given by Textile Association of India in May 2011
		Served on the Elite Panel of SAC's (Sustainability Apparel Coalitions).
		Chief Guest for SDC on 6 th June 2014.
		Served as a member of UGC sponsored curriculum design workshop.
		ShikshanRatanPurskar
2	Prof. S.R. Shukla	Fellow of the Maharashtra Academy of Sciences
		ShikshanRatanPurskar
		K.H. Gharda reward of research contribution 2009
		NarottamSekhsaria Best Teacher Award 2009
		GC- SBR One time Grant for guiding more than 15 Ph Ds-

		2011
		One Ph.D. (Tech.) thesis and Two M.Sc. (Tech) theses were selected for the " Best Thesis Award " of U.D.C.T. (1992-93, 1999-2000, 2003-2004)

Department of Oils, Oleochemical & Surfactants Technology

Sr. No.	Faculty	Awards & Honours
1	Prof. P. R. Vavia	Best Teacher's Award, University Institute of Chemical Technology at undergraduate level, 2010.
		Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2012.
		Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2014
		Prof. P. R. Vavia awarded VASVIK Award in the category of Biological Sciences & Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015
2	Dr. C.S. Madankar	S.R. Bhatnagar Memorial Research award, 2013 by the Oil Technologist Association of India for the research work carried out in the field of lubricants, petrochemicals and allied products.
		Canadian Commonwealth Scholarship by the Canadian Bureau for International Education (CBIE) on behalf of Foreign Affairs and International Trade Canada (DFAIT) in Department of Chemical Engineering, University of Saskatchewan, Canada for 6 months with Prof. A.K. Dalai, U of S, Canada, 2011-12.
3	Dr. P. R. Nemade	DAE-Young Scientist Research Award
		BIRAC and Bill and Melinda Gates Foundation's Re-Invent The Toilet Challenge
4	Dr. Amit P. Pratap	"RBGV Swaika Memorial Award" during the 68th Annual Convention of Oil Technologists' Association of India and International Conference on Emerging Trends in

		Oleochemicals and Lipids Expo-2013 national August 8-10, 2013 at CSIR-Indian Institute of Chemical Technology, Hyderabad
		Prof. R K Khanna Memorial Award” for the best research paper entitled “ <i>Effect of Glycerol and Soybean Oil as a Carbon Source on the Production of Mannosylerythritol Lipids by Pseudozyma antarctica (ATCC 32657)</i> ” published in Journal of Lipid Science and Technology (JLST), Vol. 43 No. 1, Jan-Mar 2011, 16-19 for the calendar year 2011.
		Praharaj Manoj Memorial Award” for securing First Rank from all the branches of M. Sc. (Tech), Semester I and Semester II examinations held in May 2000.
		National Open Merit Scholarship” for the academic year 1996 – 97 and 97 – 98 for securing Second Rank in the Merit List at B. Sc. (Chemistry) examination held in April 1996.
		Selected as ‘Junior Research Fellow’ under the scheme entitled ‘Processing and Utilization of Gamma Irradiated Oilseeds’ sponsored by Board of research in Nuclear Sciences (BRNS), Mumbai.
5	Dr. D. V. Pinjari	Fulbright OLF Award 2015 by OIE and CIES (State Departments, US Federal Government, Washington, USA)
		Young Engineers Award 2014-2015 by The Institution of Engineers (India)
		Wipro Earthian Award 2013 by Wipro foundation, Bangalore (India)
		Young Associate, Maharashtra Academy of Science (2013)
		M. P. Chary Memorial Award 2013 for research and technological contribution (below 35 years). The M P Chary Memorial Award was constituted by <u>Indian Institute of Chemical Engineers (IChE), India</u>
		Dr. K. H. Gharda Best PhD Thesis Award 2013
		Ambuja Cement Best Thesis award
		Department of Science and Technology Inspire Faculty

		Award 2013-2018
		University Grant Commission, Government of India D S Kothari Postdoctoral Fellowship 2013-2016

Department of Polymer & Surface Engineering

Sr. No.	Faculty	Awards & Honours
1	Dr. S. T. Mhaske	3 rd National Award for Technology Innovation in “Green Polymeric Materials & Products” By Dept. of Chemicals and petrochemicals, Ministry of Chemicals and fertilizers. Govt. of India.
		Young Associate of Maharashtra Academy of Sciences. Govt. of Maharashtra
		Secretary, IPI, Mumbai
2	Prof. P.A. Mahanwar	Received award of Fellow of Maharashtra Academy of Science, Pune, 2015.

Department of Pharmaceutical Sciences & Technology

Sr. No.	Faculty	Awards & Honours	Year
1	Prof. K. G. Akamanchi	UGC-Visiting Fellow - Sardar Patel University, Vallabh Vidyanagar, Gujarat.	2013
		Appointed as Independent Director on the Board of Aarti Drugs Ltd.	2013
2	Prof. P. D. Amin	Indian Women Scientist in Chemical Industry News, 2011	2011
		Fellow of Maharashtra Academy of Science.	2014
3	Prof. G. U. Chaturbhuji	UGC Raman Fellowship- for Post-Doctoral Research from Northeastern University, Boston, USA.	2013
4	Prof. M. S. Degani	Felicitated by Indian Chemical Council as Woman Scientist in March 2012	2012
		Fellow of Maharashtra Academy of Sciences, 2012	2012
5	Prof. P.V. Devarajan	AAiPS Distinguished Educator and Researcher Award	2011

		Industrial Research Award for Women Scientists	2011
		Professor C. J. Shishoo Award. Research in Pharmaceutical Sciences, conferred by the Association of Pharmaceutical Teachers of India, 2013	2013
6	Prof. P.D. Jain	Ramanujan Fellowship from DST, Govt. of India	2011
		Young Associate of Maharashtra Academy of Sciences for the contribution in Engineering and Technology, 2012	2012
		DAE Young Scientist Research Award, Department of Atomic Energy, Govt. of India, 2012	
		BioCARE Research Award for Women Scientist, DBT, 2013	
7	Prof. A. R. Juvekar	Awarded Milstein award 2014 from International Cytokine and Interferon Society (ICIS), Bethesda, USA.	2014
8	Prof. V. B. Patravale	Fellow of Maharashtra Academy of Sciences award (2011)	2011
		BVDUPCP- Pharmacy Teacher of the year Award 2012	2012
		Grant Awardee – ‘Nanovaccine for Brucellosis using Green Technology’; Grand Challenges Explorations Grants Round 11, Bill & Melinda Gates Foundation, (2013)	2013
		Dr. P. D. Patil Best Pharmaceutical Scientist of the year Award – 2014	2014
		Association of Pharmaceutical Teachers of India (APTI), Maharashtra State (2014)	2014
		Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK)	2014
		Apex Committee’s Smt. Chandaben Mohanbhai Patel Industrial Research Award for Women Scientists – 2013 (2015)	2013
9	Prof. V. N. Telvekar	The “Better Opportunities for Young Scientists in Chosen Areas of Science & Technology (BOYSCAST)” fellowship	2014
10	Prof. P. R. Vavia	VASVIK Award in the category of Biological Sciences & Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015	2014

DBT-ICT Centre for Energy Biosciences

Sr. No.	Faculty	Awards & Honours	Year
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1	Prof. A. M. Lali	UAA-ICT Distinguished Alumnus Awards in Academic, 2015.	2015
		Vasvik Award in Biological Sciences & Technology by Vividhlaxi Audyogik Samshodhan Vikas Kendra, Mumbai, 2013	2013
		IChE Sartorius India Chemcon Distinguished Speaker, 2008	2008
		Fellow, Maharashtra Academy of Sciences, 2007	2007
		IChE NOCIL award for excellence in design or development of process plant or equipment, 2006	2006
		Several awards for best poster presentations and for best oral presentations	
		Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.	2015
		Head, DBT-ICT Centre for Energy Biosciences	
		Chairman, TEQIP Industry Institute Interaction Cell	
		Chairperson : Research Recognition Committee (Bioprocess Technology)	
		Chairperson: Research Recognition Committee (Biological Sciences)	
2	Dr. S. B. Kale	Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.	2015
		Chair and Convener, Bioprocessing INDIA 2014 conference, 17-20th December 2014	2014
		Consultant to Catapro Technologies, Nashik, 2014	2014
		Resource person, faculty development program, PSG, Coimbatore	
3	Dr. Annamma A Odaneth	Resource person, Summer Winter School Scheme (SWSS) Kolhapur Institute of Technology's College of Engineering and to deliver lecture on 6th June 2015.	2015
		Resource person for seminars conducted at Biomass And Bioenergy Research Center, National Key Laboratory Of Crop Genetic Improvement, Huazhong Agricultural University, Wuhan, Hubei, China on 23rd April 2015	2015
		Resource person for Refresher Course in	2015

		Biosciences on January 12, 2015 at - 'New Era in Biological Sciences' at the Birla College of Arts, Science and Commerce, Kalyan under the aegis of UGC-Academic Staff College, University of Mumbai.	
		Resource person for seminar on "Transforming enzymatic transformations" on Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, UK. on 21st November 2014	2014

Appendix 14

Institute of Chemical Technology, Mumbai Industry Sponsored Faculty Positions

1. R.T. Mody Professor of Chemical Technology and Director (1933)
2. Sir Dorabji Tata Reader in Pharmaceutical Chemistry (1943)
3. Singhanee Reader in Chemical Engineering (1936)
4. Singhanee Lecturer in Chemical Engineering (1936)
5. Singhanee Lecturer in Pharmacy (1943)
6. Singhanee Lecturer in Paint Technology (1946)
7. Singhanee Associate Lecturer in Chemical Engineering (1936)
8. Singhanee Associate Lecturer in Food Technology (1945)
9. Sir Homi Mehta Reader in Oil Technology (1943)
10. Sir Homi Mehta Associate Lecturer in Food Technology (1943)
11. Darbari Seth Professor of Inorganic Chemical Technology (1995)
12. BPCL Professor of Chemical Engineering (2001) Changed to Bharat Petroleum Distinguished Professor of Chemical Engineering
13. V.V. Mariwala Chair in Chemical Engineering (2004)
14. J.G. Kane Chair of Oil Technology (2008)
15. M. M. Sharma Distinguished Professor of Chemical Engineering (2009)
16. Narotam Sekhsaria Distinguished Professor of Chemical Engineering (2009)
17. R. A. Mashelkar Chair of Chemical Engineering (2009)
18. K. V. Mariwala - J. B. Joshi Chair of Chemical Engineering (2009)
19. Gunavati Kapoor Chair in Pharmaceutical Technology (2009)
20. Dr. John Kapoor lecturer in Pharmaceutical Technology (2010)
21. RCF Professor of Chemical Engineering (2012)
22. Dr. B. P. Godrej Distinguished Professor of Green Chemistry and Sustainability Engineering

Appendix 15**List of MOUs****MOU from National Academics/Industries**

Sr. No.	Name of Company	Year in which it has signed	Departments	National/ International
1	Bharat Petroleum Corp. Ltd. (BPCL)	March, 2000	Department of Chemical Engineering	National
2	Bhabha Atomic Research Centre, Department of Atomic Energy, Govt. of India	March, 2003	Department of Chemical Engineering	National
3	Reliance Industries Ltd *	February, 2007	ICT	National
4	International Centre for Genetic Engineering and Biotechnology, (ICGEB) New Delhi	February, 2007	DBT-ICT Centre for Energy Biosciences	National
5	Homi Bhabha National Institute	April, 2007	Department of Chemical Engineering & Department of Pharmaceutical Sciences and Technology	National
6	Shri V.V. Mariwala Chair in Chemical Engineering	August, 2007	Department of Chemical Engineering	National
7	Department of Biotechnology, Govt. of India	March, 2008	Department of Chemical Engineering	National
8	Department of Atomic Energy, Govt. of India	March, 2008	Department of Chemical Engineering	National
9	Professor M.M. Sharma Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
10	Dr. R. A. Mashelkar Chair in Chemical Engineering	April, 2008	Department of Chemical Engineering	National
11	Shri Narotam Sekhsaria Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
12	Dystar India Pvt. Ltd	March, 2010	Department of Fibres and Textile Processing Technology	National
13	Lanxess India Private Limited	April, 2010	ICT	National
14	Hindustan Petroleum Corporation Ltd.	May, 2010	ICT	National
15	General Mills Operations LLC *	May, 2010	DBT-ICT Centre for Energy Biosciences	National
16	Tata Chemicals Limited	May, 2010	ICT	National
17	Chemtrols Industries Limited	May, 2010	ICT	National

18	Ishaan Industries	May, 2010	Department of Polymer and Surface Engineering	National
19	Indian Institute of Technology, Bombay	May, 2010	ICT	National
20	Department of Atomic Energy, Govt. of India	May, 2010	Department of Chemical Engineering	National
21	TERI University	July, 2010	Department of Chemical Engineering	National
22	Biotech Consortium India Limited	August, 2010	DBT-ICT Centre for Energy Biosciences	National
23	Shri Kishore V. Mariwala - Professor J.B. Joshi Chair in Chemical Engineering	October, 2010	Department of Chemical Engineering	National
24	University of Mumbai	November, 2010	ICT	National
25	Veer mata Jijabai Technological Institute (VJTI)	January, 2011	ICT	National
26	Sah Petroleums Limited (SPL)	February, 2011	Department of Polymer and Surface Engineering	National
27	FRP Institute *	March, 2011	Department of Polymer and Surface Engineering	National
28	Pidilite Professor M.M. Sharma Distinguished Doctoral Fellowship	March, 2011	Department of Chemical Engineering	National
29	Aker Powergas Pvt. Ltd. *	May, 2011	ICT	National
30	Ishaan Industries	May, 2011	Department of Polymer and Surface Engineering	National
31	North-East Institute of Sciences and Technology *	May, 2011	ICT	National
32	Science for Society (Shri Vaibhav Tidke)	June, 2011	Department of Chemical Engineering	National
33	Bombay Textile Research Association, Mumbai	June, 2011	Department of Fibres and Textile Processing Technology	National
34	Bayer Crop Science Ltd.	July, 2011	Department of Chemical Engineering	National
35	Hindustan Insecticides Ltd.	July, 2011	ICT	National
36	Saffron Eagle Biofuels	August, 2011	DBT-ICT	National
37	Rashtriya Chemicals and Fertilizers Ltd. (RCF)	October, 2011	Department of Chemical Engineering	National
38	Central Institute for Research on Cotton Technology	December, 2011	Department of Fibres and Textile Processing Technology	National
39	RCF Chair – Professor of Chemical Engineering	March, 2012	Department of Chemical Engineering	National
40	Queensland University of Technology, Australia	March, 2012	ICT	National

41	Bio-Rad Laboratories India Pvt. Ltd.	April, 2012	DBT-ICT Centre for Energy Biosciences	National
42	Wool Research Association, Thane	April, 2012	Department of Fibres and Textile Processing Technology	National
43	M/s Sanzyme Limited (Formerly Uni-Sankyo Limited)	May, 2012	DBT-ICT Centre for Energy Biosciences	National
44	Trilok Food India	July, 2012	Department of Food Engineering and Technology	National
45	Triple Pee Solution Pvt. Ltd. *	July, 2012	Department of Food Engineering and Technology	National
46	Akzo Nobel India Ltd. (ANIL)	September, 2012	Department of Polymer and Surface Engineering	National
47	Saife Vetmed Pvt. Ltd.	November, 2012	Department of Pharmaceutical Sciences and Technology	National
48	Yokogawa, Middle East	November, 2012	ICT	National
49	Privi Organics Pvt.	November, 2012	DBT-ICT Centre for Energy Biosciences	National
50	CSIR-Central Drug Research Institute (CDRI)	November, 2012	ICT	National
51	Homi Bhabha National Institute, Mumbai	November, 2012	ICT	National
52	Indian Institute of Chemical Technology, Hyderabad	November, 2012	ICT	National
53	National Environmental Engineering Research Institute (NEERI), Nagpur	November, 2012	ICT	National
54	National Chemical Laboratory, Pune	November, 2012	ICT	National
55	Shivaji University, Kolhapur	November, 2012	ICT	National
56	GlaxoSmithKline Consumer HealthCare Ltd., Gurgaon	November, 2012	ICT	National
57	India Glycols Ltd. Uttarakhand	December, 2012	DBT-ICT	National
58	College of Engineering, Pune	February, 2013	ICT	National
59	Cellworks Research India Pvt. Lt.	February, 2013	DBT-ICT	National
60	Dr. Netar Prakash Scholarship (Avensa)	March, 2013	ICT	National
61	Sir Dorabji Tata Reader in Pharmaceutical Chemistry	March, 2013	Department of Pharmaceutical Sciences and Technology	National

62	Unilever Industries Pvt. Ltd.	April, 2013	ICT	National
63	Tata Chemical Ltd. for “Darbari Seth Chair of Inorganic Chemical Technology Endowment”	May, 2013	Department of Chemical Engineering	National
64	CSIR-Indian Institute of Petroleum (IIP)	May, 2013	ICT	National
65	North Maharashtra University, Jalgaon	June, 2013	ICT	National
66	Kirloskar Integrated Technologies Ltd.	July, 2013	ICT	National
67	EID Parry (India) Ltd.	Oct, 2013	ICT	National
68	Institute of Science, Mumbai	January, 2014	ICT	National
69	Glenmark Research Centre(Non Disclosure Agreement)	February, 2014	ICT	National
70	Reliance Technology Group (Non Disclosure Agreement)	February, 2014	ICT	National
71	Tata Institute of Social Sciences	April, 2014	ICT	National
72	ONGC Energy Centre Trust	15th October, 2014	ICT	National
73	BURSA Technical University	24th February, 2015	ICT	National
74	Indian Oil Corporation Ltd.	16th April, 2015	ICT	National
75	Asian Paints Limited	16th May, 2015	ICT	National
76	National Institute of Warangal	25th March, 2014	ICT	National
77	Kanoria Chemicals & Industries Limited	30th January, 2015	ICT	National
78	Sinhgad Technical Education Society, Pune	7th January, 2014	ICT	National
79	Shri. Mayur B. Khairat	31st October, 2014	DBT-ICT Center for Energy Biosciences	National
80	Evonik Industries Pvt. Ltd.	11th February, 2014	DBT-ICT Center for Energy Biosciences	National
81	Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy Bhabha Atomic Research Centre (BARC) Trombay, Mumbai - 400 085	21st November, 2013	ICT	National

82	Dr K K G Menon Memorial Lecture Endowment	24th April, 2015	ICT	National
83	Enhancement of the Endowment Corpus of Bharat Petroleum Distinguished Professorship in Chemical Engineering	27th January, 2015	Department of Chemical Engineering	National
84	L'oreal India Pvt. Limited	12th June, 2013	ICT	National
85	Agilent Technologies	1st January, 2014	ICT	National
86	Zim laboratories ltd	16 th June, 2014	ICT	National
87	Department of Biotechnology. Ministry of Science and Technology Government of India. New Delhi	13 th July, 2014	ICT	National
88	Godrej industries Ltd.	2nd February, 2015	ICT	National
89	Mrs. Pushpal Ramesh Mantri	15th January, 2015	ICT	National
90	Central pulp & Paper Research institute (CPPRI)	3rd March, 2015	ICT	National
91	Godrej Consumer Products Limited	23rd June, 2015	ICT	National
92	Unilever industries Privet limited	25th February, 2015	ICT	National
93	Evonik India Pvt. Ltd	1st July, 2015	ICT	National
94	Bharat Petroleum corporation limited	7th August, 2015	ICT	National
95	BPCL Senior Research Doctoral Fellowship	27th August, 2015	ICT	National
96	Marathi Vidnyan Parishad	23rd November, 2015	ICT	National
97	University of Petroleum and Energy studies, Dehradun	7th December 2015	ICT	National
98	Siemens Limited	4th December, 2015	ICT	National

MOU International Academic and Industries

Sr. No.	Name of Company	Year in which it has signed	Departments	National/ International
1	University of Saskatchewan	March, 2008	DBT-ICT Centre for Energy Biosciences	International
2	Dow Chemical International Pvt. Ltd.	July, 2008	Department of Chemical Engineering	International
3	Queensland University of Technology, Australia	July, 2008	DBT-ICT Centre for Energy Biosciences	International
4	Borouge Pte Ltd.	July, 2009	Department of Chemical Engineering and Department of Polymer and Surface Engineering	International
5	Deakin University, Australia *	2010	ICT	International
6	Microsoft Corporation	2010	ICT	International
7	University of Illinois at Urbana-Champaign	October, 2010	ICT	International
8	Groupe Des Ecoles Des Mines (GEM)	December, 2010	ICT	International
9	Royal Melbourne Institute of Technology (RMIT)	February, 2011	ICT	International
10	University of Bradford	February, 2011	ICT	International
11	University of British Columbia *	February, 2011	ICT	International
12	Eli Lilly and Co.	May, 2011	Department of Pharmaceutical Sciences and Technology	International
13	Merck Specialties Pvt. Ltd.	July, 2011	Department of Chemical Engineering	International
14	South Illinois University, Edwardsville *	November, 2011	ICT	International
15	ONTARIO Universities International	November, 2011	ICT	International
16	British Council Division, India British High Commission	January, 2012	ICT	International
17	The University of Nottingham	January, 2012	DBT-ICT	International
18	Coca Cola Ltd.	November, 2012	ICT	International
19	Ethiopian Textile Industry Development Institute (TIDI), Ethiopia	February, 2013	Department of Fibres and Textile Processing Technology	International
20	Washington State University, USA	March, 2013	ICT	International

21	Michigan State University, USA	June, 2013	ICT	International
22	ADDIS ABABA Science and Technology University, Addis Ababa, Ethiopia	Sept, 2013	Department of Fibres and Textile Processing Technology	International
23	Queensland University of Technology, Australia	Nov, 2013	DBT-ICT Centre for Energy Biosciences	International
24	Universidad De Valencia (Spain)	February, 2014	ICT	International
25	MAS FABRICS (PRIVATE) LIMITED, Colombo	6th August 2014	ICT	International
26	The Coco-Cola Company, Delaware, United States of America.	27th June 2014	ICT	International
27	Essilor International (ESSILOR R&D CENTRE-Singapore)	3rd October 2014	ICT	International
28	ESSILOR AMERA PTE LTD, Singapore	24th November 2015	ICT	International

Appendix 16

List of Programs Conducted at Institute of Chemical Technology, Mumbai					
Sr. No	Date/Duration	Department	Activity	Coordinator	Objective
List of Programs Conducted at ICT by the departments					
1	Wednesday, December 05, 2012	Department of Fibre & Textile Processing Technology	Conferece	Prof. M. D. Teli	International Conference on Building Sustainable Value Chain through Green Technology Flourish Or Perish
2	12-14 January, 2013	Department of Chemical Engineering	Lecture Series	Dr. V. H. Dalvi	A three day event 'Exergy Master Class & Lecture Series 2013' festival
3	16-17 January, 2013	Department of Pharmaceutical Sciences & Technology	Symposium	Prof. Mariam S. Degani	International Conference on Drug Discovery for Infectious Diseases and Cancer(DDIDC)
4	03-04 April, 2013	Department of Physics	Workshop	Dr. (Mrs.) V. D. Deshpande	Workshop on Modern Trends in Polymer Science and Technology(MTPST 2013)
5	10-13 January, 2013	Department of Physics	Conference	Prof. R. R. Deshmukh	To attend '6th Young Researchers' Conferecne' and '7th Young Innovators' Choice Competition ('YRC-YICC' 2013)
6	Saturday, September 28, 2013	Department of Foods Engineering & Technology	Seminar	Dr. Rekha Singhal	To exchange and share knowledge on scientific aspects of processing of traditional foods
7	29-30 Oct 2013	Department of Dyestuff Technology	Symposium	Prof. N. Sekar	To discuss the frontier areas in the functional application of colorants
8	08-10 Novemebr, 2013	Department of Chemistry	Seminar	Prof. R. V. Jayaram	National Seminar on Chemistry Education & Research and National Convention of Chemistry Teachers
9	23-24 Novemebr, 2013	Department of Chemical Engineering	Workshop	Dr. Ratnesh Jain	To educate and inform about advances in biomaterial and Nanotechnology
10	17-18 January 2014	Department of Polymer & Surface Engineering	Conference	Dr. S. T. Mhaske	Organizing at National Conference on Advances in Polymer & Coating-Rangotsav 2014
11	Thursday, January 23, 2014	Department of Fibre & Textile	Workshop	Dr. R. V. Adivarekar	To enhance & give hands on experience to research on sport tech.
12	23-24 Jan, 2014	Department of Mathematics	Conference	Dr. Ajit Kumar	Look at the existing situations of Mathematic and industry collaboration and look for solution to explore the interaction between the two community

13	25-26th February 2014	Department of Chemistry	CSIR-UGC NET/SET workshop for chemistry M.Sc. & PhD Students	Dr. Shraeddha Tiwari	Orientation Courses for CSIR-UGC NET/SET exam for M.Sc. And PhD Student
14	18-19 March 2014	Department of Chemistry	Laboratory Safety Workshop	Dr. Shraeddha Tiwari	To inculcate Safety principles & aspects in students
15	3rd & 4th March 2014	Department of Chemistry	Rasayanam 2014 & Catschol 2014 Worskshop	Prof. M. D. Teli	Research Presentations & Poster Presentations
16	28 - 29 March 2014	Department of Chemistry	Workshop	Prof. S. D. Samant	To introduce teaching learning modes to young faculty of ICT
17	May 5-9 & May 23,24, 28-30, 2014	Department of Pharmaceutical Sciences & Technology	Capacity Development of Faculty	Dr. Prajakta Dandekar	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner and impart to them the techniques to cope up with daily stress
18	July 03-08, 2014	Department of Pharmaceutical Sciences & Technology	Capacity Development of Faculty	Dr. Prajakta Dandekar	To help the faculty members understand and address the crucial issue of appropriate mentoring in a holistic manner and impart to them the techniques to cope up with daily stress
19	27-28 September, 2014	Department of Chemical Technology	Workshop	Dr. Sujit Jogwar	To make the aspiring engineers aquented with the conceptual knowledge of the "Industrial Automation - PLC & SCADA" Workshop
20	16-18 October, 2014	Department of Dyestuff Technology	Symposium	Dr. N. Sekar	To bring together in the functional application of colorants(NSFAC 2014)
21	17 to 20 Dec, 2014	DBT-ICT	Conference	Dr. Sandeep Kale	Organizing conference "Bioprocessing INDIA 2014" with theme of Bioprocessing: panacea to Bioenergy, Nutrition and Healthcare
22	Saturday, November 15, 2014	Department of Pharmaceutical Sciences & Technology	Workshop	Prof. V. B. Patravale	to attend "Advanced Scientific Writing Skills Workshop", in collaboration with Achiever's League, USA.
23	Wednesday, December 10, 2014	Department of Chemistry	Workshop	Prof. S. D. Samant	Association of Chemistry Teachers (ACT) and Homi Bhabha Centre For Science Education (HBCSE) Organizing Second International Conference On Education In Chemistry (ICEC – 2014), at HBCSE
24	Monday, February 23 and Tuesday, February 24, 2015	Department of Pharmaceutical Sciences & Technology	Conference	Dr. (Mrs.) Vandana B. Patravale	The 14th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems

25	Monday, March 16, 2015	Department of Chemistry	Workshop	Dr. Sanghamitra Chatterjee	Applications of Electrochemistry in Photo Voltaic Devices, Nanotechnology and Energy Research
26	February 13 & 14, 2015	Department of Polymer and Surface Engineering & Technology	conference	Prof. P A Mahanwar	APC Rangotsav 2015 Conference.
27	15th-16th December 2014	Department of Polymer and Surface Engineering & Technology	Seminar	Prof. P A Mahanwar	Two day meet on " Health, Safety, Cleanliness, hiegene at work place,
28	February 4th, 2015	Department of Pharmaceutical Sciences & Technology	Seminar	Prof. P.V. Devarajan	Biological and Physical Characterization of Drug Delivery Systems
29	6th January 2015	ICT	Seminar	ICT-TA	Institute. Our main purpose in getting the TEDx platform here is to innovate, ideate and acquaint students of the Institute of Chemical Technology with developments in Technology, Entertainment and Design under the TED licence by organising TEDxICTMumbai where x = independently organised event
30	17th-20th December 2014	DBT-ICT Centre	conference	Prof A M . Lali	
31	10-Apr-15	Polymer & surface engg	Workshop	Dr. P.A. Mahanwar	Advances in Analytical Techniques for Plastics Polymer composites & Packaging Industries
32	28th and 29th Dec. 2015	TEQIP	Meeting for collaboration of universities in the state of Maharashtra	Prof. V. G. Gaikar	To conduct meeting for collaboration of University in the State of Maharashtra
33	24-28 Oct 2015	Department of Chemical Engineering	Enhancement & R& D (Workshop)	Organising workshop at ICT	Dr. Rekha Singhal
34	26-27 March, 2015	Department of Fibres & Textile Processing Technology	Conference conducted at ICT	Dr. Sujata Pariti	To share knowledge about textile processing with students 2. To make available platform for exchange of knowledge among students and for display of competitive spirit among students
35	29th to 30th Oct. 2015	Department of Dyestuff Technology	Conference conducted at ICT	Prof. N. Sekar	Paradigm of functional applications of Colorants
36	4th Dec to 5th Dec 2015	All Department	Management Capacity Enhancement	Dr. U. S. Annature	To organise and conduct a training program on NBA for ICT faculty Members

37	19/01/2016 to 20/01/2016	Department of Polymer & Surface Engineering	Conference conducted at ICT	Prof. S. T. Mhaske	The objectives of conference is to provide platform for the scientist, technologist, academics to knowledge an various field of polymer & surface coating
38	9th to 10th Feb. 2016	DPST	Workshop	Prof. Archana Juvekar	To organise an International Workshop on "Drug Safty- Pharmacovigilance"

List of Programs Conducted For Non-Teaching Staff

1	19th March, 2013	Department of Chemistry	Laboratory Safety workshop	Dr. J. M. Nagarkar	To increase the awareness towards laboratory safty and give training in fire fighting and first aid
2	18 November 2013 to 31 March, 2014	All Departments	Staff Development	Yogesh Raut	To enhance the skills of Staff(Advace+Basic) Batch
3	Session I: 18-19, Session II: 20-21, Session III:23-24 June 2014	Department of Pharmaceutical Sciences & Technology	Staff Development	Prof. V. B. Patravale	Methods for self motivation, Understanding stress, Tips for tackling stress- (Yoga,praanaayaam,meditation,alterna te therapies like reflexology, etc.)

Appendix 17

Projects Sponsored by the Industry/Corporate Houses

Company/Principal Investigator	Amt. in Rs.
Abbott Healthcare P.Ltd./Prof.P.V.Devrajan	603800.00
AISHE/MHRD	45000.00
ALKEM LABORATORIES LTD./PROF. V.B.PATRAVALE	505620.00
ALMET CORP/M.S.DEGANI	19950.00
Amines & Plasticizer Ltd./Dr.S.S.Bhagwat	230310.00
AMOGH CHEMICALS/ V.N.TELVEKAR	*
Antiobesity / Activity/ Dr. S.S.SATHAYE	*
Asian Paints Ltd / Prof.R.N.Jagtap	*
Avents Pharma/ KGA	*
Avik Pharm/ K.G.A.	*
Ayush / Laddha	137150.00
Bajaj Healthcare Ltd\Prof.P.D.Amin	128552.00
Bajaj Health / P.D.Amin	*
Balance Industrial Project/Adivarkar	475047.00
Balance Industrial Project./ Dr K.S.Laddha	50562.00
Balance Industrial Res Project/S.S.B	*
Balmer Lawric/ A.W.P.	*
BASF LTD/ Prof. R.V.Adivarekar	*
Bayer Cropscience Ltd / Scholarship	100000.00
BAYER PHARMACEUTICALS/P R VAVIA	*
Bbjaj Health Care/ M.S.Degani	5308.00
Bill Gates Founadation/solar Grain Dryer	*
Bill Gates Foundation/casava Tech/prof.B.N.T.	*
Bill Gates Foundation / Prof V.B.Patravale	*
Bioprocessing INDIA 2014	3241048.00
Bio-Rad Lab/ Prof. A.M.Lali	198987.00
BIRAC/DR.P.R.NEMADE	644000.00
BIRAC/ Prof A.M.Lali	54656.00
Boether Ingelheim/ V.B.Patravale	*
Book Grants	94000.00
BPCL/ Prof V.G.Gaikar & Prof A.B.Pandit	*
B.P.International / S.S.B	*
Cadbury India / R.S.S.	*
Carbon Clean Solutions Pvt Ltd / Dr. P.D.Vaidya	*
Cargill Foods/ Dr.A.P.Pratap	*
Chemcom 2013	*
Chemference-2012	490000.00
Chemtrols Ind. Ltd/ A.M.Lali	*
CICS/TRAVEL GRANT	44395.00

Coca Cola Co./Prof A.M.Lali	*
Contingency/ Mr. B. Nagaraj /RNJ	*
Coromandel International Ltd/ Prof.K.G.Akamanchi	*
Crompton Greaves Ltd Dr S.T.Mhaske	*
CV Raman African Fellow/R. S. Singhal	*
C V Raman Fellow / Dr. Ndidi Ngwuluka	160000.00
Cyril Health Care Pvt Ltd/ Prif. P.R.Vavia	54940.96
Degusa Huel Corp./M.D.Teli	27426.50
Dow Chemical/ Dr.G.D.Yadav	*
Dow Chemicals / R.S.S.	*
DP BEVERAGES LTD./PROF.R.S.SINGHAL	387642.00
Dr.N.Vedaraman	10409.00
Dr. Paleps M.R.Foundation/ Dr.Sathaye	*
Drug Monitoring Research Institute/Dr.A.R.Juvek	*
DSM India/ P.R.Gogate / V.K.Rathod	34500.00
DST-DDIDC-Prof.P.V.Devarajan	100000.00
D.S.T./ Indo-Finland/G.D.Yadav	*
Dy.Secretary, CSIR Complex, New Delhi	36638.00
EBC/SCHOLARSHIP/2008-2009	*
EBC/Scholarship/2009-2010	2400.00
Enersave Technologies Pvt.Ltd./prof.S.S.Bhagat	*
ESSILAR/Dr.G.S.Shankarling	*
Evonik Degussa India Pvt Ltd	141723.00
Ex-Sev/scholarship	2520.00
Extech Process Eng/Dr. V.K.Rathod	*
FAMY CARE LTD./DEEPAK PINJARI	*
FDC LTD/Prof.K.G.A.	16079.00
Finance & Accounts Officer, University of Mumbai	868283.00
Fund for Science & Engineering Research	283946.00
G.C.Chemic Pharmic Ltd/ P.D.Amin	28863.00
Gem Aromatics Pvt Ltd / Dr.Anant Kapadi	*
General Mill III/ Prof A.M.Lali	*
General Mills-Part-II /Prof. A.M.Lali	140400.00
General Mills-Part-I/Prof.A.M.Lali	*
Gharda Chemical Ltd/Dr Mhaske	*
Gharda Chemicals/Dr.U.S.Anaapure	*
GHCL LTD./PROF.B.N.THORAT	*
Glaxo Smithkline Consumer Health Care Ltd	13500.00
GLENMARK GENERICS LTD/DR.SATHAYE	*
Glenmark Pharma.Ltd/ Dr. S.S.Sathaye	*
Godavari Biorefineries Ltd/ Dr.A.S.Sabnis	*
GODFREY PHILIPS/DR. LRODROGUES	*
Godfrey Philips (I) Ltd / S.T.Mhaske	*
GODFREY PHILIPS INDIA/PROF.R.S.SINGHAL	*

Godrej Agrovvet Ltd./prof.A.M.Lali	8595540.00
GSK Ltd/Prof. S S Bhagwat & Prof. Pratap	*
GUJARAT AMBUJA/NCD	*
Gujrat Stevia Growers & Mark.Fed/Prof.B.N.Thorat	*
Hardcastle Petrofer Pvt. Ltd./Dr.S.Sathaye	*
Hayashibara/ P.V.D.	*
Himedia Laboratories Pvt Ltd / DR.U.S.Annpure	*
Hind Lever Ltd / L.Rodrigues	*
Hindustan Insecticides Ltd/ Prof. G.D.Yadav	360376.00
Hindustan Unilever Ltd / Prof P.A.Mahanwar	301962.00
Hostel Maint	81200.00
H&R JOHNSON INDIA / PROF R.N JAGTAP	*
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ICI India Ltd/ T.T.P./ Dr.P.A.Mahanwar	1339.00
ICT-ETIDI	25016513.00
ICT NANOBIO 2013 WORKSHOP	*
ICT-OEC/Cooper-Clorine-PhaseII/Prof G.D,Yadav	15658853.00
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Ict / Oect/Phase II / Patent Fees	5190311.00
ICT Roche Ltd / Dr Yatin Gokarn	80397.00
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Inventa Research Pvt Ltd/ ADr. S.T.Mhaske	*
IPCA LAB LTD/ Prof S.S.Bhgwat	*
ISHAAN INDUSTRY/ Prog.R.N.Jagtap	*
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ITW (I) LTD/ PRATAP	*
JAIN IRRIGATION/Prof.R.N.Jagtap	*
Jayant Agro-Organics Ltd/ Dr. Ap.Pratap	*
Jayant Oil / A.Pratap	*
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KAMANI OIL IND/ RSS	50000.00
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Kansai Nerolac Paints / Prof R.N.Jagtap	*
KIRAN PIPE INDUST/ DR.S.T.M	*
Kirloskar Oil Eng Ltd/prof A B Pandit	*
Komal Exotic Spices Pvt.Ltd./Dr.S.S.Arya	170000.00
K.Tech (India) Limited	*
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Laxmi Organic Industries Ltd.	150000.00
Lotus Surgicals Pvt.Ltd./Prof.P.R.Vavia	*
Lubrizol Advaced Materials (I) Pvt Ltd/ Prof Vavia	136650.00

MABPHARMA P. LTD/DR.P.V.DEVARAJAN	*
MARUDHARA PACK PROD/ S.T.M	
Merck Pvt.Ltd./Dr.P.D.Amin	358260.00
Micro Labs/ P.R.Vavia	*
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Ministry of Foods/m. Y.K.	*
Momentive Speciality Chemicals / Dr R.N.Jagtap	*
M.P.C.B./Prof.B.N.Thorat	*
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Nagar Haveli Perfumes & AromaTICS/ Dr Annamma Anil	267700.00
Nanoxpert Technologies/dr.Ratnesh Jain	101327.00
NEW PROJECT/PROF.A.B.PANDIT	*
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Nichrome Flex/M. Y.K.	*
Nippon Synthetic Chemical/Prof.P.R.Vavia	846458.00
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NSFAC 2013 Dr.N. Sekar	50000.00
NSFAC-2014/ Dr N Sekar	142750.00
NTPC/SSB	*
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Omni Activity/ S.S.S.	113753.00
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Other	*
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Pidilite-Rajesh Prabhu-Contg/ Prof R.N.Jagtap	50000.00
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Pitambari Products Pvt.Ltd./Dr.J.Waghmare	126405.00
Polyfibre Ind.Pvt Ltd/Dr Mhaske & Prof. Shukla	*
Polymer Tech Internation/ Dr. Sadhana Sathye	*
PRAJ IND-LTD/ Prof.D.N.B.	*
PT PHARMACON PVT.LTD./P.D.AMIN	156630.00
QPIC PRODUCT P. LTD./DR.U.S.ANNAPURE	*
Rajashri Sahumaharaj Scholarship	123461.00
Rasayan Inc / Dr Anant Kapadi	699358.00
Rashtriya Chemical Ltd./Nemade/Sarode	98077.00

RECKITT BENCKISER/AMIT PRATAP	179618.40
Recognition Of Dystar Lab	50000.00
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Reliance Ind / G.D.Y.	
Reliance Ind Ltd/ Prof A.B.P.	*
Reliance Industries Ltd / Anant Kapdi	781007.00
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Rudra Centre/ Dr. A.R.Juvekar	*
RUSAN PHARMA/P.R.V	*
SAHAJANAND/V.B.PATRVALE	45000.00
Salpra Pharm /M.S.D	*
Sarbi Engineering & WHG Pvt.Ltd./Dr.A.P.Pratap	*
Sawaria Polymes\prof. R.N. Jagtap	*
Sawariya Polymers /Prof R.N.Jagtap	*
SBC/ Non-Plan	*
SBC SCHOLARSHIP YEAR 2009-10	*
SC/SCHOLARSHIP/2009-10	*
SEKHSARIA/PVD	*
SHL/Dr. V H Dalvi	*
Shree Umiya Surgical Pvt.Ltd./Prof.R.N.Jagtap	*
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S.T.Scholarship 2009-10	*
ST/Scholarship/ Year 2010-11	*
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Tata Chem / P.D.A.	22449.00
Tata Memorial Centre/prof K.G.Akamanchi	*
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Tech.Information Forecasting & Assessment Council	187200.00
Technoforce Solution Ltd/ Prof J.B.Joshi	*
Techno Force Solutions Pvt Ltd /CSM/PDV	100000.00
Tetra Pack India Pvt.Ltd./ Dr.A.P.Pratap	388968.00
Total Herb Solution Pvt. Ltd./ Dr. K. S. Laddha	*
Transitions, Opticals Inc/ Dr G.S.Shankarling	1068655.63
Tulsi Chemicals & Paints Pvt Ltd/ Prof R.N.J.	*
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ULTIMATE/A.B.Pandit	79526.00
Uni Sanyo Ltd /Prof.P.R.Vaiva	*
Universal Starch Chem/A.Sabnis/R.R.Deshmukh	*
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V.S.S.U.T.Burla, Odisha	450000.00
VVF(I) Ltd Prof S.S.Bhagwat	*
VVF PVT.LTD./PROF.P.D.AMIN	69093.00
Welspun India Ltd./Prof.R.V.Adivarekar	266715.00
Zim Laboratories Pvt.Ltd./prof.P.V.Devarajan	800000.00
Total	79280934.49
Unilever India Pvt Ltd /Prof A.W.Patwardhan	1612170.00
Unilever Ind Ltd/ Mini. Yell/ Dull/ R.V.Adivreka (2)	*
UNILEVER IND. LTD./PROF.R.S.SINGHAL	710123.00
UNILEVER IND -PVTY LTD/ PROF R.V.ADIVEREKAR (1)	239214.00
Unilever Industries P Ltd (Prof V.G.Gaikar)	2050400.00
Unilever Industries Pvt Ltd/S.S.Bhagwat	552190.00
Unilever Industries/R.V.Adivarekar.3	*
Unilever Insutries P.Ltd./Prof.R.V.Adivarekar (4)	303372.00
Total	5467469.00
	84748403.49

* Project Amount yet to be Received