INSTITUTE OF CHEMICAL TECHNOLOGY

(University under section 3 of the UGC Act 1956)
Elite Status & Centre of Excellence - Government of Maharashtra

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DBT-ICT CENTRE FOR ENERGY BIOSCIENCES

PROFESSOR ARVIND MALLINATH LALI
B. Chem, M. Chem, Ph.D Tech.(Chem. Eng.)
Professor (Chemical Engineering)
Head, DBT-ICT-Centre for Energy Biosciences

ABOUT US:

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 Prof. 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.

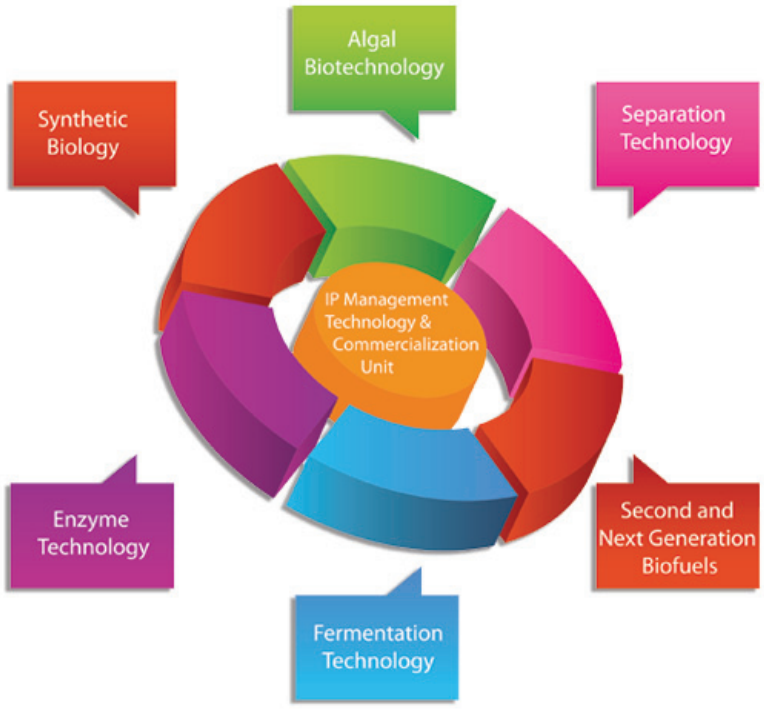
The Centre for Energy Biosciences has attracted a large number of industrial and academic collaborations as a result of its reputation of conducting cutting edge research and delivering viable and scalable solutions to the biotech industry. The 10 Ton/day biomass pilot plant set up by Industry in the 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.

AIMS:

- Envisage the end goals as clearly as possible at all times
- Put all multiple disciplines to work in close co-ordination
- Combine expertise at two ends of the spectrum i.e. molecular biology and engineering sciences
- Scale up and apply evolving principles/ideas progressively alongside development in order to make sure that efforts are time efficient and not wasted and the technology zeroes to viability at a faster rate



BIOFUELS TECHNOLOGY

Objectives

- Developing second and next generation sustainable biofuel technologies
- Development of biorefinery concept through multi-product processing
- Scaling up and implementing biofuel plants in decentralized manner

Approaches

- Innovative pre-treatment strategies
- Radical intensification for enzyme process
- Intensification of fermentation steps

Achievements

- Technology developed for pre-treatment of low & high lignin biomass
- Production of separate enzyme amenable cellulose and hemicellulose fractions along with lignin
- Novel two step continuous enzyme process with rapid reaction rates and reduction in enzyme dosage and reaction time
- More than 90 % yield of sugars from biomass
- High ethanol tolerant strains for C5 & C6 fermentation
- High cell density column fermenters
- More than 90 % theoretical yield
- Low cost Pervaporation & distillation system

Technology Highlights

- Continuous process throughout; low CAPEX & low plant footprint
- Biomass to ethanol in less than 24 hours
- Ethanol yield > 300 L/Ton biomass
- Technology components patent protected worldwide
- IGL Pilot plant operational from April 2012 and first phase commissioned successfully

ENZYME TECHNOLOGY

Objectives

- To develop viable processes for microbial/ enzyme catalyzed bio-transformations
- Develop stable immobilized biocatalyst preparations
- Production and cost effective purification of expressed biocatalyst
- Bioreactor designs for process scale-up
- Engineer/develop specific enzymes with desired activity profiles
- Develop suitable over-expression systems for selected biocatalysts

Approaches

- In silico biocatalyst structure-function relationship studies
- Reaction/ Biocatalyst engineering
- Integration of processes
- Process scale up
- Reactor engineering

FERMENTATION TECHNOLOGY

Objectives

- Identifying and designing microorganisms
- Lab scale optimization and production
- Large scale production

Approaches

- Modification of growth phases
- Media engineering
- Fermenter design
- Extractive fermentation
- Metabolomics & metabolic flux modeling

ALGAL BIOTECHNOLOGY

Objectives

- Explore algae as a source of biofuel feedstock/biodiesel/ value added products
- Develop knowledge, technology and process strategies for sustainable production of algae as feedstock for fuel & chemicals
- Photo bioreactor/Raceway pond designing for efficient scale up of algae as biofuel feedstock

Approaches

- Screening & selection of algae
- Growth and media engineering, consortia design, CO_2 mitigation
- Strain improvement by genetic modification/ metabolic engineering/ hybridization

- Photo bioreactor/Raceway pond designing
- Harvesting and processing

SYNTHETIC BIOLOGY

Objectives

- Synthesis of drop in biofuels (butanol, biodiesel, biohydrocarbons)
- Large scale bioproduction of amino acids
- Synthesis of furanics from biomass

Approaches

- Pathway analysis for redirecting fluxes towards biofuel production
- Construction of synthetic metabolic pathways for production of high value compounds
- Vector construction for shuttle/transient/integrative cloning and expression of genes
- Recombinational methods for over expression / silencing of genes
- Alleviating product toxicity in biofuel production by directed evolution for tolerant strains

BIOPROCESS TECHNOLOGY

Objectives

- Thermodynamic and hydro-dynamic characterization of various adsorbents for RPC, NPC, HIC, HCIC, IEX, Affinity, IMAC, SEC & mixed mode chromatography
- Design & development of separations of bio-based, natural, synthetic & semi synthetic products using adsorptive & chromatographic separation
- To improve the product purity, productivity and process economics (commercial viability) through designing of selectivity and process engineering
- Designing of membrane (UF, MF and NF) and extractive separation, crystallization and precipitation (use of smart polymers and poly/electrolytes) and to explore their possible integration with chromatographic separation
- Mechanistic and empirical models for adsorption and separation mechanisms
- Process monitoring through process optimization and product characterization
- Designing, engineering and scale up of chromatographic reactors (Packed bed, EBA, FBA, SMB, FMB, Segmented), skids as well as pilot and production plants

Approaches

- High Throughput Process Development (HTPD)
- Selectivity Engineering
- Process Integration and intensification
- Quality by Design (QbD)
- Reactor design and engineering
- PAT (Process Analytical Technology) and controls
- Design of adsorbents and affinity ligands
- Process and product characterization, Validation and risk analysis
- Computational fluid dynamics

IP MANAGEMENT TECHNOLOGY AND COMMERCIALIZATION UNIT

Objectives

- Capacity building within the centre in IP Management
- IP protection to technologies generated at the centre
- IP Management with regards to technology transfer and licensing

Approaches

- Filing of Indian, PCT's, and foreign patents
- Spreading awareness on IP issues
- Preparing MOUs, CDAs/ NDAs and MTAs

PRESENT SCENARIO

Currently the Centre has following human resource

Faculty	Professor - 1 Associate Professor - Nil Assistant Professor - 2 Research Scientist - 9 Research Associate - 3	15
Ph. D Scholars	PhD Bioprocess Technology PhD Biotechnology PhD Science PhD in Chemical Engineering	53
M. Tech Students	Bioprocess Technology Chemical Engineering	13
Support Staff		13

SUPPORT STAFF

Sr. No	Name	Designation
1	Vibha Raut	Instrumentation Engineer (Electrical/Electronics)
2	Swapnil Vartak	Instrumentation Engineer (Electrical/Electronics)
3	Shreya Chopdekar	Typist cum Clerk
4	Deepti Kataria	Typist cum Clerk
5	Megha Pujari	Office Assistant
6	Shilpa Tondlekar	Office Assistant
7	Subhash Mandavkar	Project Attendant
8	Nilesh Satve	Project Attendant
9	Krishna Monde	Project Helper
10	Sameer Gawade	Project Attendant
11	Santosh Yadav	Project Attendant
12	Sandeep Ghole	Project Attendant
13	Prashant Koli	Laboratory Attendant

MAJOR INSTRUMENTAL FACILITIES

Complete facilities provided to work in areas of DNA, Microbial Proteomics, Metabolomics and Metabolic Engineering, Downstream Processing & Separation technologies, Enzyme Technology, Fermentation Technology, Bioinformatics and Molecular Modeling

Name of Equipment	Units
GC with headspace sampler	1
GC with inert XL EI/CI MSD with Triple-Axis Detector	1
HPLC systems with UV, DAD, RI, ELSD and CAD detectors	9
HPLC-MS/MS (Q-TOF; Triple-Quad; Ion Trap)	3
SELDI	1
Preparative HPLC	2
Moisture Analyzer	1

Micro and Analytical balances	4
Karl-Fischer Autotitrator	1
Fluorescence Microscope	1
Infrared Spectrophotometer (FTIR)	1
UV-VIS Spectrophotometers	2
Complete ELISA station	1
Versa Doc and Gel Doc Imaging System	1
PCR and RT-PCR	1
Gel electrophoresis systems & Image analysis	1
Ion Chromatographic system with ECD and BioScan detectors	1
Spectrofluorometer	1
Nano Drop	1
Algal Stirred Photo Bioreactor	4
1000L and 5000L Raceway Ponds	1
Pulse Amplitude Modulated Fluorimeter (PAM)	1
Olympus Microscope Model IX51 with camera and software	1
Continuous Chromatography System. Simulated Moving Bed lab cum pilot scale high pressure Multicolumn System	1
Microwave reactor systems	2
Continuous microwave reactor system	1
3L to 10L Bioreactors	10
Parallel 6x1L Bioreactor Assembly	1
Multiple micro-Fermenter assembly	1
Off-gas analyzer for the fermentation systems	1
Gradient PCR	2
Thermal Activity Monitor	1
Anaerobic work stations	2
Elemental analyzer	1
Parr/High pressure reactors	3
Microbial Identification System	1
Phenotype Microarray System	1
Particle size analyzer	1
Mini-raceway ponds	10
Accelerated Solvent Extraction Systems	1
Nano spray for MS-QTOF System	1

PROFESSOR ARVIND MALLINATH LALI

B. Chem, M. Chem, Ph.D Tech.(Chem. Eng.)

Professor (Chemical Engineering)
Head, DBT-ICT-Centre for Energy Biosciences

SUBJECTS TAUGHT:

- Downstream Processing in Biotechnology
- Advances in Adsorptive & Chromatographic Separations
- Bioprocess Simulation Modeling and bioreactor Design
- Instrumentation & Process Control
- Adsorptive Separations
- Statistical Methods

RESEARCH INTERESTS :

- Bioenergy, biofuels and biomass to other chemicals,
- Purification of proteins, nucleic acids &other biomolecules, natural & synthetic APIs high value organic/inorganic chemicals,
- Continuous chromatography, modeling & adsorptive separations,
- Biocatalysis & bio transformations,
- Bioreactor design, mixing & dynamics of solid- liquid fluidized bed,
- Dynamics of gas-solid circulating fluidized bed,
- Process integration & intensification,
- Process development, characterization & scale up

RESEARCH STUDENTS:

Ph.D. Tech- 16
Ph.D. Sci.-24
M. Tech. - 4
M. Chem. Eng. - 2
Integrated Ph.D. - 1

RESEARCH PUBLICATIONS:

International - 46 (so far),
2 (in press)
Conference Proceedings -
17 (so far)
Book Chapters - 2 (so far)

PATENTS :

International – 47 pending;
6 granted
National- 20 pending

DR. ANNAMMA ANIL ODANETH

B.Sc. Microbiology, M.Sc. Technology
P.G. Diploma in Bioinformatics,
Ph.D. Applied Chemistry

Assistant Professor of Biochemistry

SUBJECTS TAUGHT:

- Protein and enzyme engineering
- Biocatalysts and enzyme technology

RESEARCH INTERESTS:

- Extractive biotransformation,
- Design & engineering of enzymes,
- Selective isolation & capture of natural bioactive molecules,
- Secondary agriculture & its products,
- Process integration & intensification,
- Process development, characterization & scale up.

RESEARCH STUDENTS:

Ph.D. Tech- 10
Ph.D. Sci. - 6 (Co-Guide)
M.Tech.-7

RESEARCH PUBLICATIONS:

International- 3 (so far)
Conference Proceedings -
4 (so far)

PATENTS:

International- 3 National- 6

DR. SANDEEP BHASKAR KALE

M. Sc. Tech. BPT, Ph.D. Tech (Chem. Eng.)
Assistant Professor of Bioprocess Technology

SUBJECTS TAUGHT:

- Unit operations in bioprocessing
- Bioanalytical techniques
- Advanced topics in adsorptive Chromatographic Separations

RESEARCH INTERESTS:

- Design and development of downstream processes for biopharmaceuticals, biological, natural products and synthetic API (extraction, biotransformation adsorptive and chromatographic separations, filtration, crystallization, lyophilisation & drying)
- Protein stabilization process characterization
- Process integration and intensification, optimization and controls, QbD, Analytical method development and characterization,
- Validation, Enzyme technology and biocatalysis, Fermentation, Scale-up.

RESEARCH STUDENT:

R.A- 1, Ph. D Tech- 9
Ph. D Sci. - 4, M.Tech.- 4

RESEARCH PUBLICATIONS:

International- 21
Conference Proceedings-5

PATENTS:

18 (so far)

DR. REENA PANDIT

B.Sc. Zoology, M.Sc. Marine Biology, Ph.D Marine Biotechnology
Research Scientist

SUBJECTS TAUGHT :

- Biochemistry
- Green Biotechnology

RESEARCH INTERESTS :

- Algal growth engineering for production of biofuel and biochemicals
- CO_2 sequestration & waste water management using micro and macroagal systems
- Genetic engineering of cyanobacteria for value added compounds

RESEARCH STUDENTS :

Ph. D Sci. – 6 (Co-Guided)
M.Tech.-6

RESEARCH PUBLICATIONS:

9 (so far)

Conference Proceedings -
17 (so far)

PATENTS :

National- 1 (so far)

DR. GUNJAN PRAKASH

B.Sc. General, M.Sc. Biosciences,
Ph.D Plant Biotechnology & Fermentation
Research Scientist

SUBJECTS TAUGHT:

- General Microbiology

RESEARCH INTERESTS:

- Genetic engineering of micoralgee for increasing the photosynthetic efficiency & abiotic stress resistance
- Metabolites production from microalgae and cyanobacteria and marine micro organisms
- Microbial fermentation for value added compounds secondary metabolite and production

RESEARCH STUDENTS:

Ph. D Sci. – 4
M.Tech.-4

RESEARCH PUBLICATIONS:

International -11 (so far)
National -2 (so far)
Conference proceeding - 26
Book Chapter - 1

PATENTS:

National- 2 (so far)

DR. POOJA JOSHI

B.Sc. General, M.Sc. Biosciences,
Ph.D. Plant Biotechnology
Research Scientist

SUBJECTS TAUGHT :

- Patents and IPR

RESEARCH INTERESTS :

- Plant Biotechnology
- IP Protection & Policy

RESEARCH PUBLICATIONS:

International - 3
National - 1
Book Chapter - 1

DR. ARUNA MAHESH

B.Sc. Biochemistry, M.Sc. Biotechnology,
Ph.D. Chemistry
Research Scientist

SUBJECTS TAUGHT:

- Biochemistry
- Molecular Biology

RESEARCH INTERESTS:

- Synthetic biology applications towards optimizing microbial pathways & synthesis of value added chemicals bioseparations

RESEARCH PUBLICATIONS:

International-4 (so far)

DR. ABHISHEK MULE

M.Sc. Microbiology, Ph. D Microbiology,
PDF Industrial Microbiology
Research Scientist

SUBJECTS TAUGHT :

- Microbiology
- Fermentation Technology

RESEARCH INTERESTS:

- Microbial Fermentations
- Xenobiotic Degradation
- Enzyme Production

RESEARCH PUBLICATIONS:
9 (so far)

Conference proceedings -
3(so far)

PATENTS:
4 (so far)

DR. SHAMLAN M. S. RESHAMWALA

M.Sc, Ph D.
Research Scientist

SUBJECTS TAUGHT:

- Bioformatics and statistical methods
- Recombinant DNA Technology
- Patents and IPR (along with Dr. Pooja Joshi)
- Design and analysis of experiments (along with Dr. Prakash Vaidya and Professor Prakash Bhate)

RESEARCH INTERESTS:

- Overexpression and secretion of recombinant proteins
- Enzyme engineering for improved catalysis and robustness
- Utilization of diverse feedstocks of biosynthesis of value added molecules.

RESEARCH PUBLICATIONS: 4

PATENTS: Indian - 1

DR. MANJU BISHAN SHARMA

B.Sc. General, M.Sc. Microbiology,
Ph.D. Microbiology
Research Associate

RESEARCH INTERESTS:

- Microbial Diversity
- Glycoside Hydrolases
- Anaerobic degertion

RESEARCH PUBLICATIONS:
International-5, 1- In press
Book Chapter - 2,

Conference Proceedings:
10 (so far)

DR. ASHISH MISRA

Ph.D. in Chemical & Biochemical Engineering
M.S. in Chemical & Biochemical Engineering
B.E. in Chemical Engineering

DBT-Energy Biosciences Overseas fellow

SUBJECTS TAUGHT:

- Biosystems Engineering

RESEARCH INTERESTS:

- Metabolic Analysis and Engineering

RESEARCH PUBLICATIONS: 7

DR. RUPALI WALIA

Ph.D. (Biochemical Engineering & Biotechnology)
DBT- Energy Biosciences Overseas Fellow

SUBJECT TAUGHT:

- Molecular biology and biotechnology

RESEARCH INTEREST:

- Design microbial platforms for biofuels & biorefinery

RESEARCH PUBLICATIONS: 4

DR. PAMELA JHA

Ph.D.
Research Associate

RESEARCH INTERESTS:

- Plant biotechnology, animal biotechnology, Environmental sciences

RESEARCH PUBLICATIONS:
Research papers - 4 (International),
Book Chapters (International-1, National-1)

MR. SANDIP KISAN KALE

P.G. Diploma in Patent Law,
M. Sci. (Organic Chemistry)

Research Associate

RESEARCH PUBLICATIONS:

Book Chapter-1

PATENTS : 1

DR. SANJEEV K CHANDRAYAN

Ph.D.

DBT-Energy Biosciences Overseas Fellow

RESEARCH INTERESTS:

- Enzyme engineering & Technology generation based on Thermostable Enzymes.
- Study of enzymology and physiology of thermophilic lignocellulolytic microbes.

RESEARCH PUBLICATIONS:

- Research papers- 4 (International)

Ph.D. (TECH)

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Khot Lalit	ICT, Mumbai	Flux analysis of metabolic pathways for biochemical system improvisation	Professor A.M. Lali
2	Sunkara Sunil	University of Wisconsin Madison, United States	Design of strategies to improve fermentation productivities: use of single and multiple substrate continuous fermentation systems	Professor A.M. Lali
3	Chatterjee Mandrita	ICT, Mumbai	Designing process for isolation and detoxification of proteins and sugar for therapeutic and diagnostic application	Professor A.M. Lali
4	Amritkar Vinod	ICT, Mumbai	Extraction and purification of therapeutic natural products using quality by design approach	Professor A.M. Lali
5	Pednekar Mukesh	ICT, Mumbai	Controlled chemo-enzymatic hydrolysis of polysaccharides	Professor A.M. Lali
6	Deore Gaurangi	ICT, Mumbai	Quality based designing of downstream process of purification of polyclonal and monoclonal antibodies	Professor A.M. Lali
7	Prashant Kumar	ICT, Mumbai	Downstream processing, characterization and application of proteins	Professor A.M. Lali
8	Degwekar Gautam	D. Y. Patil University, Navi Mumbai	Design of immobilized of cell systems	Professor A.M. Lali
9	Rao Suruchi	Macquarie University, Sydney	Isolation, cloning and functional characterization of cellulose specific carbohydrate binding modules (CBMs)	Professor A.M. Lali
10	Bajwa Singh Arjun	ICT, Mumbai	Engineering of *Corynebacterium glutamicum* for the production of Lamino Acids	Professor A.M. Lali
11	Gupta Anand	ICT, Mumbai	Chromatographic process for purification of small molecules from their structural analogs	Dr. S.B. Kale
12	Febin Pappachan	ICT, Mumbai	Isolation and hydrolysis of natural proteins for their application as supplements	Dr. S.B. Kale
13	Narnaware Sharad	ICT, Mumbai	Designing separation and transformation process for building vegetable phytorefinery for healthcare and nutraceutical products	Dr. S.B. Kale
14	Nair Sushitha	National Institute of Technology, Durgapur, West Bengal	Multi-objective parameter optimization of integrated fermentation and downstream processing of biomolecules	Dr. S.B. Kale
15	Redkar Gargi	ICT, Mumbai	Designing process for agro-based products	Dr. S.B. Kale
16	Koley Sushmita	ICT, Mumbai	Extraction and purification of natural products	Dr. S.B. Kale
17	Chavan Manoj	ICT, Mumbai	Valorization Strategies for agro based products	Dr. S.B. Kale

ONGOING STUDENTS FOR Ph. D. (SCI.)

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Shukla Hiral	M. S. University of Baroda, Baroda	Integrative butanol fermentation	Professor A.M. Lali
2	Pawar Hitesh	Pratap College, Amalner	Synthesis & furanics from Biomass Derived sugers	Professor A.M. Lali
3	Gangal Swanand	Mumbai University, Mumbai	Designing strategies to improve microalga lipid production for biofuels	Professor A.M. Lali
4	Patil Mallikarjun	Solapur University, Sholapur	Recovery and transformation of lignin to value added products	Professor A.M. Lali
5	Yadav Manish	University Department of Chemistry, Mumbai	Strategies for enzyme mediated synthesis of fatty acid esters	Professor A.M. Lali
6	Maurya Ritu	University Dept. of Chemistry, Kalina	Reactive separation of organic acids from fermentation broth	Professor A.M. Lali
7	Sarnaik Aditya	Mumbai University	Growth Engineering of cyanobacteria and optimizing conditions to upgrade the productivity	Professor A.M. Lali
8	Deb Shalini	Bangalore University	Metabolic engineering of *E. coli* for the production of isobutanol	Professor A.M. Lali
9	Kavadia Monali	Mithibai College Mumbai	Lipase mediated synthesis of designer lipids	Professor A.M. Lali
10	Asodekar Bhupal	K.M.C. College, Khopoli	Fractionation of high lignin content biomass	Professor A.M. Lali
11	Singh Nitesh Kumar	University of Mumbai, Mumbai	Extraction and purification of phenolic acid and conversion to value added products	Professor A.M. Lali
12	Patil Parmeshwar	PAU, Ludhiana	Characterization of holoceullose	Professor A.M. Lali
13	Rathod Jayant	Mumbai University, Mumbai	Molecular cloning, over expression and characterization of stress responsive genes for its functional analysis in green algae	Professor A.M. Lali
14	Sawant Sonal	Birla College, Kalyan	Engineering microbial host strains for heterologous production of value added chemicals	Professor A.M. Lali
15	Patil Smita	Ramnarain Ruia College Matunga, Mumbai	Study of photosynthetic efficiency of microalgae in experimental and designed conditions	Professor A.M. Lali
16	Gaikwad Sujata	Birla College, Kalyan	Deployment of nutrient regulation strategy for generation of sustainable oleaginous microalgae feedstock	Professor A.M. Lali
17	Vira Chaitali	Mumbai University,	Growth engineering of algae for biomass production	Professor A.M. Lali
18	Pillai Vijita	Mumbai University, Mumbai	Engineering Propionibacterium for organic acid production	Professor A.M. Lali
19	Palkar Juilee	Mumbai University, Mumbai	Dynamics of microalgal physiology with sewage as a sustainable fertilizer for biofuels	Professor A.M. Lali

20	Nainan Lucy	St. Xaviers Fort, Mumbai	Production of C3 metabolites in *E. coli*	Professor A.M. Lali
21	Krishnan Archana R.	G.N. Khalsa College of Arts, Sci. Commerce, Mumbai	Designing microbial cell factory for IPP pathway engineering	Professor A.M. Lali
22	Suveera Bellary	Mumbai University, Mumbai	Designing microbial conversion of lignin	Professor A.M. Lali
23	Sawant Sneha	Mumbai University, Mumbai	Strategies of reducing glucose intolerance in β-glycosidases	Dr. A. Anil
24	Vaze Rutuja	Birla College, Kalyan	Controlled protein hydrolysis for growth stimulating peptides	Dr. A. Anil
25	Choudhary Vikram	School of life Sciences, S.R.T.M. University, Nanded	Enzymatic deconstruction of lignocellulosic biomass	Dr. A. Anil
26	Iyer Padmini	Madras University S.R.M. College, Madras	Purification and controlled enzymatic hydrolysis of proteins	Dr. A. Anil
27	Warke Mrunal	University Of Pune, Pune	Biotransformations of ricinoleic acid into value added products	Dr. A. Anil
28	Victoria Juliet	Mumbai University, Mumbai	Saccharification and fermentation of holocellulose	Dr. A. Anil
29	Sathe Priyanka	TNAU, Coimbatore	Green Surfactants: value addition of neem cake & oil	Dr. S. B. Kale
30	S. P. Poornima Rao	St. Xaviers College, Mumbai	Fermentation using genetically modified *Eshcerichia coli* for production of alcohol and sugar alcohol	Dr. S.B. Kale
31	Sonawane Anup	Pune University, Pune	Development of sustainable biorefinery processes for secondary agriculture	Dr. S.B. Kale
32	Daware Sachdeo	Ahmednagar College of Arts, Science and Commerce, Ahmednagar	Chemical strategies for derivatization of natural product	Dr. S.B. Kale
33	Tiwari Richa	Ahmednagar College of Arts, Science & Commerce, Ahmednagar	Synthesis of dendrimer for catalysis and chromatographic separation	Dr. S.B. Kale

M. TECH

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Singh Gourav	VIT University Vellore	Separation of acetic acid from lignocellulosic biomass.	Professor A.M. Lali
2	Singh Vishwajeet	University Shool of Biotechnology	Membrane based recovery of sugars from different biomass.	Professor A.M. Lali
3	Velani Sneha	Sinhagad College of Engineering, Pune	Growing thraustochytrids for production of oil from biomass derived sugars	Professor A.M. Lali

4	Neha Sarda	KIT'S College of Engineering	Production, production and characterization of bi specific antibodies	Dr. S.B. Kale
5	Topkar Amey	KIT's College of Engineering, Kolhapur	chromatographic separation of small molecules	Dr. S.B. Kale
6	Nakhate Vikas	Government College of Pharmacy Amravati	Hybird process design for extraction and purification of natural product	Dr. S.B. Kale
7	Gorantyal Pooja	Jawaharlal Nehru Engineering College	QbD based media engineering for vancomycin production	Dr. S.B. Kale
8	Malde Ronak	Bombay College of Pharmacy	Supramolecular investigation of protein stabilization during its processing and formulation	Dr. S.B. Kale
9	Somawanshi Shivaprasad	S.S.D.J. College of Pharmacy Chandwad Nashik	High throughput screening of cellulase	Dr. A. Anil
10	Sagwal Shilpa	University Institute of Engineering & Technology (U.I.E.T) Kurukshetra University, Kurukshetra	Characterization of CBM's for improved cellulose hydrolysis	Dr. A. Anil
11	Damani Dhvani	D.Y.Patil University	Genome shuffling of cyanobacteria for biofuel production	Dr. G. Prakash
12	Wadkar Vishal	Sinhagad Institute of Pharmacy	Production of carotenoids (lutein and zeaxanthin) from microalgae	Dr. G. Prakash
13	Japhalekar Kshitija	Kolhapur Institute of Technology (KIT'S) College of Engineering, Kolhapur	Growth engineering of microalgae and cyanobacteria for carotenoids production	Dr. R. Pandit

INTEGRATED Ph. D

Sr.	Research Scholar	Previous Institution	Project	Supervisor
1	Das Arjit	Heritage Institute of Technology, Kolkata	Metabolic & fermentation engineering of thermophilic microorganisms for the enhanced 2-3 Butanedial production	Professor A.M. Lali
2	Agrawal Snehal	D.Y. Patil University, Mumbai	Integrated chromatographic & membrane processes for purification of bioactives	Dr. S.B. Kale

ONGOING RESEARCH PROJECTS

Sr.	Title	Funding Agency	Amount (Rupees in Lakhs)	Duration
1.	Green enzymatic fat-splitting technology for production of fatty acids and Acyl Glycerols	DST	1210.18	2014-2016
2.	Microbial biotransformation for aromatic chemicals	Nagar Haveli Perfumes & Aromatics	15.00	2014-2015
3.	Generation of purified phytoene from yeast cell mass	Wacker Chemie AG	14.49	2014-2015

4.	Improved production of biogas and bio-CNG from lignocellulosic biomass	MNRE, India	515.61	2013-2015
5.	DBT-ICT Centre for Energy Biosciences: New and extension proposals	DBT, India	1800.00	2013-2018
6.	Extension: Intellectual property management and technology unit 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	700.30	2013-2016
10.	Isolation, purification and stabilization of hCG, HMG, FSH, LH and other urine proteins, and stabilization	DBT-SBIRI	22.50	2013-2015
11.	DBT-ICT lignocellulosic sugar technology for production of food-grade glucose from agricultural biomass residues	Coca Cola Company USA	150.00	2013-2014
12.	Development and characterization of alternative affinity adsorbent for purification of therapeutic antibodies	DBT, India	68.46	2013-2016
13	Production of furan derivatives from glucose	India Gycols Ltd	150.00	2012-2014
14	Value addition to vegetable waste streams of GMI	General Mills, USA	40.80	2012-2014
15	Characterization of chromatographic adsorbents	Bio-Rad Laboratories India Pvt. Ltd.	22 .00	2011-2014
16	Extraction, purification of sorghum seed protein for delayed delivery of bioactives	AISRF, DBT	101 .00	2010-2014

PATENTS FILED 2013-2014

Sr.	Inventors	Title	Filing date	Application number
1.	Lali, Arvind Mallinath; Valte, Rajeshwar Dattatraya	Multistage membrane tree model for separation of binary mixtures	26th July 2013	2478/MUM/2013
2.	Lali, Arvind Mallinath; Matlani, Rekha Khushiramani; Sivadasan, Anil	Production of thermostable, xylose tolerant, beta-xylosidase in *E. Coli*	30th October 2013	3439/MUM/2013
3.	Lali, Arvind Mallinath; Pawar, Hitesh Suresh	Process for synthesis of furan derivatives from Saccharides using Solid acid catalyst and preparation thereof.	21st November 2013	3664/MUM/2013
4.	Lali, Arvind Mallinath; Matlani, Rekha Khushiramani; Sivadasan, Anil	Thermotolerant and xylose tolerant mutant β-xylosidase and sequence encoding there of.	29th November 2013	3761/MUM/2013
5.	Lali, Arvind Mallinath; Reshamwala, Shamlan M.S.	Recombinant *E. coli* strain and process for production of mannitol there from.	5th December 2013	3807/MUM/2013
6.	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Pednekar, Mukesh Prabhakar; Sigh, Niteshkumar Satish; Rathi, Abhijit; Iyer, Padmini; Deshmukh, Sharad	Process for extraction of polyphenols from biomass.	5th December 2013	3808/MUM/2013

7.	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Pednekar, Mukesh Prabhakar;	A process for production of soluble sugars from biomass	16th January 2014	154/ MUM/2014
8.	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Birhade, Sachinkumar Hiraman; Victoria, Juliet Joanna; Sawant, Sneha Chandrakant;	A process for fractionation of oligosaccharides from cereal bran	16th January 2014	155/ MUM/2014
9.	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Yadav, Manish Gyanendra.	Enzymatic process for synthesis of fatty acid ester of polyols	02nd May 2014	1526/ MUM/2014
10.	Lali, Arvind Mallinath; Odaneth, Annamma Anil; Vadgama, Rajesh Natwarlal; Tribhuvan, Nikhil Vilas	Enzymatic production of monoacylglycerol from oil	07th May 2014	1583/ MUM/2014
11.	Lali, Arvind Mallinath; Prakash, Gunjan; Shukla, Bhavya; Vira, Chaitali; Rathod, Jayant Pralhad.	Algal variants produced by genome shuffling	16th June 2014	1940/ MUM/2014

PATENTS GRANTED 2013-14

Sr. No.	Inventor	Title	Country/Application No. and Date	
1	Lali, Arvind Mallinath; Nagwekar, Pooja Devidas; Varavadekar, Jayesh Suman; Wadekar, Prathamesh Chandrashekher; Gujarathi, Swapnali Subhash; Valte, Rajeshwar Dattatray; Birhade, Sachinkumar Hiraman; Odaneth, Annamma Anil.	Method for preparation of fermentable sugars from biomass	USA	
			Application No.	Granted Date
			13/682,388 Divisional -I	13/12/2013
			13/682,361 Divisional-II	28/10/2013
			Pakistan	
			455/2010	3/9/2013
			Patent under prosecution in following countries Australia, Argentia, Brazil, Bangladesh, Malaysia, Pakistan, Paraguay, Philippines, USPTO, Venezuela, Uruguay, Sri Lanka, S. Korea, S. Africa, Indonesia, India, EPO, Vietnam	
2	Lali, Arvind Mallinath; Kale Sandeep B; Pakhale, Vinod D; Thakare Yogeshwar N.	Continuous counter current fluidized Moving Bed (FMB) and/or Expanded Moving Bed (EMB) PCT No: PCT/ IN2010/000133 Indian (Appl. No: 505/ MUM/2009)	Korea Application No. 10/2011/7022903	
			USA Application No. 13/255,890	
			Patent under prosecution in following countries Canada, EPO, India, China	
3	Lali, Arvind Mallinath; Varavadekar, Jayesh Suman; Wadekar, Parthamesh Chandrashekhar	Process for fractionation of biomass	Patent under prosecution in following countries EPO, India, Indonesia, USA, Malaysia, South Africa, Uruguay, Vietnam, Korea, Paraguay, Philippines, China, Sri Lanka, Bangladesh, Brazil, Argentina, Australia	

PUBLICATIONS

Sr. No.	Author and Title	Journal/Book	Vol. No.	Page	Year
1	Walia R, Dardari R, Chaiyakul M and Czub M. Porcine Circovirus-2 Capsid protein induces cell death in PK15 cells.	Virology	In press	-	2014
2	Jha P, Modi N, Jobby R, Desai N, Differential expression of antioxidant enzymes during degrdation of azo dye, reactive black 8 in hairy roots of *Physalis minima L.*	International Journal of Phytoremediation	In press	-	2014
3	Myung, S., Rollin, J., You, C., Sun, F., Chandrayan, S., Adams, M. W., & Zhang, Y. H. P. (2014). *In vitro* metabolic engineering of hydrogen production at theoretical yield from sucrose.	Metabolic engineering	24	70-77	2014
4	Chandrayan, Sanjeev Kumar, et al. "Hyperthermophile protein Behavior: Partially-Structured conformations of pyrococcus furiosus rubredoxin monomers generated through forced cold-denaturation and refolding."	PloS one 9.3	In press	-	2014
5	Esteves, A. M., Chandrayan, S. K., McTernan, P. M., Borges, N., Adams, M. W., & Santos, H. (2014). Mannosylglycerate and Di-myo-Inositol phosphate have interchangeable Roles during adaptation of pyrococcus furiosus to heat stress	Applied and Environmental microbiology	In press	-	2014
6	McTernan, Patrick M., Sanjeev K. Chandrayan, Chang-Hao Wu, Brian J. Vaccaro, William Andrew Lancaster, Qingyuan Yang, Dax Fu, Greg L. Hura, John A. Tainer, and Michael WW Adams. "Intact functional fourteen-subunit respiratory membrane bound [NiFe]-hydrogenase complex of the hyperthermophilic archaeon pyrococcus furiosus."	Journal of Biological Chemistry	In press	-	2014
7	Shamlan M.S. Reshamwala, Sandip K. Pagar,Vishal S. Velhal, Vijay M. Maranholakar, Vishal G. Talangkar1, Arvind M. Lali Construction of an efficient *Escherichia coli* whole-cell biocatalyst for d-mannitol production	Journal of Bioscience and Bioengineering	In press	-	In press
8	Prashant Kumar, Pei Wen Lau, Sandeep Kale, Stuart Johnson, Vishnu Pareek, Ranjeet Utikar, Arvind Lali, Kafirin Adsorption on Ion-Exchange resins: Isotherm and kinetic studies	Journal of Chromatography A	1356	105-116	2014
9	Hitesh Pawar and Arvind Lali, Microwave assisted organocatalytic synthesis of 5-hydroxymethyl furfural in a monophasic green solvent system	RSC Advances	51(4)	26714-26720	2014

SEMINARS/LECTURES/CONFERENCES/SYMPOSIA/WORKSHOPS/SUMMER OR WINTER TRAINING SCHOOLS ATTENDED/ORAL OR POSTER PRESENTATIONS

FACULTY

PROFESSOR A.M. LALI

- Attended 4th Annual European Algal Biomass 2014 Conference at Seville, Spain from 5th to 7th May 2014.
- Attended 11th Annual World Congress on Industrial Biotechnology Conference from 12th May to 15th May 2014 at Pennsylvania Convention Centre Philadelphia USA.
- Attended International Seminar on "Sustainable industrial algae production & related business opportuni-ties by ONGC & CLEEN Ltd., (Finland) at New Delhi on 27th March 2014.
- Attended the "Brainstorming workshop on R& D in Biogas" on 24th March at MNRE, New Delhi.
- Delivered a lecture at the International Bioenergy Conference 2014 on "Biological Conversion Tech-nologies" organized by Professor Tucker of the University of Nottingham on 11th to 13th March 2014 at Manchester Central Convention Complex, Manchester UK.
- Delivered lecture on "Biomass technologies current scenario" at National Chemical Laboratory, Pune on 13th January 2014.
- Attended workshop on Agri-biomass on 12th January 2014 at National Chemical Laboratory, Pune.

DR. SANDEEP KALE

- Delivered a lecture at Faculty Development Program at PSG College of Technology, supported by TEQIP on June 26th June 2014.
- Delivered lecture on Connected Innovation for Secondary Agriculture at Hi-Tech Agriculture & Food Processing Conference and Exhibition" organized by Maharashtra Chamber of Commerce, Industry & Agriculture (MACCIA), from 22nd to 25th February, 2014 at Aurangabad.

DR. ANNAMMA ANIL

- Participated at the International Bioenergy Conference 2014 on "Biological Conversion Technologies" organized by Professor Tucker of the University of Nottingham on 11th to 13th March 2014 at Manchester Central Convention Complex, Manchester UK.
- Delivery a lecture at 20th Annual India Oil and Gas Review Summit (IORS 2013) and International Exhibition organized by Oil Asia Publication Pvt Ltd on 3rd September 2013 title "Bioenergy by it is biomass option for liquid transport fuels/chemicals".

DR. REENA PANDIT

- Attended European Algae Biomass Conference, Seville, Spain 6th-7th May 2014.
- Attended Indo-UK Scientific seminar on Prospectus and challenges in algal biotechnology, 19th-21st February 2014, IIT Guwahati

DR. GUNJAN PRAKASH

- Attended 4th International Conference on Algal Biomass, Biofuels and Bioproducts held at New Mexico, USA from 15th-18thJune 2014.
- Gunjan Prakash, Bhavya Shukla, Chaitali Vira, Jayant P. Rathod, Arvind M. Lali. Cyanobacterial genome shuffling: Old wine in new bottle for rapid complex phenotypic (strain) improvement. 4th International Conference on Algal Biomass, Biofuels and Bioproducts, Santa Fe Convention Center, New Mexico, USA,15th - 18th June 2014.

DR. ARUNA MAHESH

- Attended India-Korea work shop on"Bioenergy Incorporating Biofuels Biorefineries",

Trivandrum on 9th -10th September 2013.

DR. ABHISHEK MULE

- Gave a talk on Recombinant DNA Technology, Unveiling life beyond DNA discovery organized by B.N. Bandodkar College Thane on13th July 2013.

DR. ASHISH MISRA

- Attended India-Korea workshop on "Bioenergy Incorporating Biofuels Biorefineries", Trivandrum on 9th-10th September 2013.

DR. MANJU SHARMA

- Attended Bioprocess India Conference 2013 held at IIT Delhi from 5th-7th December 2013

DR. PAMELA JHA

- Workshop on "Applications in Bioinformatics" organized by ACTREC, Navi Mumbai, Jan 23th-24th, 2014.
- Jha, P. and Desai, N. (2014). Evaluation of remediation of textile dye, Acid Red 114 by hairy roots of Ipomoea carnea J. & assessment of degraded dye toxicity with the HaCaT cytotoxicity test (Oral). 35th PTCA (I) Annual Meeting and National Symposium on "Advances in Plant Molecular Biology & Biotechnology", Mar. 10th-12th, IISER, Pune, Maharashtra, India

MR. SANDIP K. KALE

- Attended two days Interactive Workshop on "Intellectual Property Rights" (IPR) held on 22nd and 23rd February 2014 at MSME-DI, Sakinaka, Mumbai organized by MSME Development Institute, Ministry of MSME, Govt. of India.

STUDENTS POSTER PRESENTATION

- **SNEHA C. SAWANT**
  Annamma Anil & Arvind M. Lali Comparative *In Silico* Interaction Studies of β-glucosidase and its Mutants With Cellobiose & Glucose. Accelerating Biology … omputing Life, C-DAC, Pune. 18th -20th February 2014 Best Poster Award.

- **JULIET VICTORIA**
  Sachin kumar Birhade, Annamma Anil, Arvind. M. Lali. Intensification of Cellulose Enzymatic Hydrolysis. 27th International Carbohydrate Symposium, Indian Institute of Science, Bangalore. 12th -17th January 2014.

- **CHAITALI VIRA**
  Gunjan Prakash, Jayant P. Rathod, Reena Pandit, Arvind M. Lali, Isolation and characterization of Sedoheptulose-1, 7-*bisphosphatase from chlamydomonas reinhardtii* CC-503. 4th International Conference on Algal biomass, biofuels and bioproducts, Santa Fe Convention Center, New Mexico, USA,15th - 18th June 2014.

- **JAYANT PRALHAD RATHOD**
  Gunjan Prakash, Chaitali Vira, Arvind M Lali, Genetic engineering of marine *Parachlorella kessleri* to overexpress *trehalose phosphate synthase* gene for mitigation of high light stress. 4th International Conference on Algal Biomass, Biofuels and Bioproducts, Santa Fe Convention Center, New Mexico, USA,15th – 18th June 2014.

- **HARSHITA LONDHE**
  Rekha Matlani, Sandeep Kale, Arvind Lali.,'In-silico characterization of β-Xylosidases obtained from geobacillus thermodenitrificans' poster presented at Symposium on accelerating Biology (Centre for Development of Advanced Computing (C-DAC)at Pune) on 18th - 20th February 2014.

- **SNEHA SAWANT**
  Annamma Anil, Arvind Lali. Screening and Identification of Thermostable β-glucosidases. 66th Annual Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th -30th December 2013.

- **SACHINKUMAR BIRHADE**
  Valte Rejeshwar, Annamma A, Lali A. Kinetic Modeling of Enzymatic Hydrolysis of Holocellulose, 66th Annual

Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th-30th December 2013

- **CHOUDHARI V.G.**
  Lali A.M.,Anil A.O. Substrate specific enzyme concoction for effective hydrolysis.66th Annual Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th -30th December 2013.

- **MUKESH PEDNEKAR**
  Sachinkumar Birhade., Annamma Anil., Arvind Lali. Optimization of Cellooligosaccharides Production Using Response Surface Methodology. 66th Annual Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th - 30th December 2013.

- **SACHINKUMAR BIRHADE**
  Annamma A, Lali A. Membrane Assisted Enzymatic Saccharification of Cellulose. Bioprocessing India- 2013, IIT Delhi on 5th -7th December 2013. Best Poster Award.

- **MUKESH PEDNEKAR**
  Sachinkumar Birhade., Annamma Anil., Arvind Lali. Process Development for Cello-oligosaccharides Production. Bioprocessing India- 2013, IIT Delhi on 5th -7th December 2013.

- **ARCHANA KRISHNAN**
  Aruna Mahesh and Arvind Lali Study of Pseudomonas putida as a model system for synthetic biology. Poster presented at Asian Congress of Biotechnology on 15th December 2013.

- **HARSHITA LONDHE**
  Rekha Matlani, Sandeep Kale, Arvind Lali, 'Purification of β-Xylosidases obtained from *geobacillus thermodenitrificans*' poster presented at Bioprocessing India 2013 Conference (IIT Delhi) on 5th -7th December 2013.

ORAL PRESENATION

- **SURUCHI RAO**
  Mukesh Pednekar, Annamma Anil, Arvind Lali. Influence of Carbohydrate Binding Modules (CBMs) on Cellulose disintegration. 27th International Carbohydrate Symposium, Indian Institute of Science, Bangalore. 12th -17th January 2014.

- **SNEHA C. SAWANT**
  Annamma Anil, Arvind Anil. Influence of β-glucosidases on cellulose hydrolysis. 27th International carbohydrates symposium, Indian Institute of Science, Bangalore. 12th – 17th January 2014.

- **SACHINKUMAR BIRHADE**
  Annamma A, Lali A. Innovations for Enzymatic Conversion of Holocelluloses into Fermentable Sugars. 27th International Carbohydrate Symposium, Indian Institute of Science, Bangalore. 12th -17th January 2014.

- **MUKESH PEDNEKAR**
  Sachinkumar Birhade., Annamma Anil., Arvind Lali. Controlled Enzymatic Hydrolysis of cellulose 27th International Carbohydrate Symposium, Indian Institute of Science, Bangalore.

- **SURUCHI RAO**
  Annamma Anil, Arvind Lali. Proteomics Analysis of Biomass Degrading Enzymes secreted by filamentous fungi Penicillium funiculosum. 66th Annual Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th -30th December 2013.

- **MRUNAL A. WARKE**
  Annamma Anil, Arvind Lali. Biotransformation of Ricinoleic acid to γ-decalactone using Yarrowia lipolytica. 66th Annual Chemical Engineering Congress (CHEMCON 2013), Institute of Chemical Technology, Mumbai. 27th -30th December 2013.

- **PRASHANT KUMAR**
  Narnaware Sharad, Kale Sandeep and Lali Arvind,

Second Generation Isothiocyanate Antioxidant (Sulforaphane): Isolation and Design of its Bionano/ Microparticles using Hydrophobic Proteins for Delayed Delivery, Biosangam 21st to 23rd November 2013, Allahabad.

- **CHATTERJEE MANDRITA** Kale Sandeep, BhoriAbijar and Lali Arvind, Development of Efficient and Scalable Process for Removal of Endotoxins and Purification of hCG from Human Urine, Biosangam 21st to 23rd November 2013, Allahabad
- **GAURANGI DEORE** Rutuparna Karkare, Sandeep Kale and Arvind Lali, Novel Protein Alternative Adsorbent Based Affinity Purification of Mono and Polyclonal Antibodies in Stable form, Biosangam 21st to 23rd November 2013, Allahabad.
- **MANOJ P. CHAVAN AND SANDEEP B. KALE** Bioprocessing for Valorization of Food Industry Wastes, Biosangam 21st to 23rd November 2013, Allahabad.

EVENTS ORGANIZED

- Science day celebration on 20th February 2014.
- BBSRC-DBT Kick off meeting was organized on 24th and 25th February 2014.

COLLABORATIONS

INDUSTRIAL COLLABORATIONS

- Bio-Rad Laboratories, India
- Agilent Technologies, India
- G. E. Healthcare, India
- India Glycols Limited, India
- Privi Organics Limited, India
- Kirloskar Integrated Technologies Limited, India
- Snowtech Equipments Private Limited, India
- Kanoria Chemicals & Industries Limited, India
- Vidyan Biocommerce Private Limited, India
- Abhay Cotex Private Limited, India
- Abhay Natural Sugars Private Limited, India
- Cell works Research India Pvt. Limited, Bangalore
- ACME Synthetic Chemicals Private Limited, Mumbai
- Diachrom Biotechnology GmbH, Switzerland
- Hyflux Ltd., Singapore
- Katra Phytochem (India) Pvt. Ltd.
- Privi Biotechnologies Pvt. Ltd.
- Wacker Chemie AG, Munich, Germany
- Evonik India
- Camlin Fine Sciences Ltd, Mumbai.
- Godrej Agrovet Ltd, Mumbai
- Thermax Ltd, Pune

ACADEMIC COLLABORATIONS

NATIONAL

- International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi
- CSIR-National Institute for Interdisciplinary Science & Technology, Trivandrum, India
- Centre for Advanced Bioenergy Research, Indian Oil Corporation Limited, India
- The Energy and Resources Institute (TERI), New Delhi
- CSIR-Central Salt & Marine Chemical Research Institute (CSIR-CSMCRI), Bhavnagar, India
- Tata Institute of Social Sciences, Mumbai (TISS)
- University of Agricultural Sciences, Dharwad (UASD)

INTERNATIONAL

- Centre for Tropical Crops and Biocommodities, Queensland University of Technology, Brisbane, Australia
- Centre for Energy, The University of Western Australia, Perth, Australia
- Department of Chemical Engineering, Centre

for Process System Computations, Curtin University, Perth, Western Australia
- CSIRO Energy Transformed Flagship, North Ryde, New South Wales, Australia
- NSW Department of Primary Industries, New South Wales, Australia
- Centre for Biomolecular Sciences, University Park, The University of Nottingham, UK
- School of Biological Sciences, Queens University of Belfast, UK
- Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth
- Centre for Synthetic and Systems Biology and School of Biological Sciences, The University of Edinburgh, Edinburgh, UK
- Bangor University, Bangor, Gwynedd, UK
- The University of York Wentworth Way, York, UK
- Institute for Cell and Molecular Biosciences, Newcastle University, UK
- Department of Biological and Medical Sciences, Oxford Brookes University, UK

CONSULTATION LIST

a)	Purification of Antibiotics	Strides-Acrolabs, Bangalore
b)	Enzymatic and Microbial Biotransformation and Bio-based Chemicals	Privi Organics Pvt Ltd, Navi Mumbai
c)	Lignocellulosic Ethanol	India Glycols Ltd. Kashipur
d)	Biotransformation and Purifications of Fatty Acids	Acme Synthetic Chemicals
e)	Adsorptive and Chromatographic Separations	Mitsubishi Chemicals India Pvt. Ltd., Delhi
f)	Natural Products Purification and Qualification	Abhay Cotex Pvt. Ltd., Jalna
g)	Enzymatic Production of Ascorbyl Plamitate	Camlin Fine Sciences Ltd.
h)	Soy Protein Pilot Plant	Kanoria Chemicals and Industries Ltd.

Ph. D. STUDENTS THESIS SUBMITTED

Sr.	Name	Course	Title of Project	Supervisor
1	Gujarathi Swapnali	Ph.D. (Tech)	Purification & recovery of inclusion body proteins	Professor A.M. Lali
2	Valte Rajeshwar	Ph.D. (Tech)	Development of system for the production of essential amino acid(s)	Professor A.M. Lali
3	Kadam Sandip	Ph.D. (Tech)	Dovetailing of unit processes for downstream processing of carbohydrates	Professor A.M. Lali
4	Wadekar Prathamesh	Ph.D. (Tech)	Recovery and downstream chemistry of lignocellulosic lignin	Professor A.M. Lali
5	Birhade Sachinkumar	Ph. D (Tech)	Reaction engineering of enzymatic hydrolysis of holocellulose	Professor A.M. Lali
6	Rathi Abhijit	Ph. D (Tech)	Design and scale-up of enzymatic biotransformations	Professor A.M. Lali
7	Sawdekar Parikshit	Ph. D (Sci)	Improved process designs for fermentative production of lactic acid/acetic acids	Professor A.M. Lali
8	Vadgama Rajesh	Ph. D (Sci)	Designing lipases for hydrolysis and synthesis	Professor A.M. Lali

M. TECH. STUDENTS THESIS SUBMITTED

Sr.	Name	Course	Title of Project	Supervisor
1	Parmar Hemant	M. Tech.	Fermentative production of lactic acid by LAB	Professor A.M. Lali
2	Londhe Harshita	M. Tech.	Purification and physic-molecular characterization of recombinant proteins	Dr. S.B. Kale
3	Kori Atul	M. Tech.	Development of strategies for stabilization of protein/peptide through molecular investigations	Dr. S.B. Kale
4	Baukhandi Shradha	M. Tech.	Designing & evaluation of process for extraction and hydrolysis of proteins for supplements	Dr. S.B. Kale
5	Tapadia Mrunmai	M. Tech.	Extraction and separation of biomolecules from placenta/umbilical cord	Dr. S. B. Kale
6	Lodha Saurabh	M. Tech.	Reaction kinetics of lipase mediated reactions	Dr. A. Anil
7	Tribhuvane Nikhil	M. Tech.	Effect of processing parameters on proteins structure and functionality	Dr. A. Anil
8	Shukla Bhavya	M. Tech.	Sugar production from different cyanobacterial species under various stress conditions	Dr. G. Prakash
9	M. Khaja Riazuddin Nawaz	M. Tech.	Fermentative production of propionic acid from Propiaribacterium Fendemxichi *Scebsp* Shermanii	Dr. G. Prakash
10	Digrase Rahul	M. Tech. (Green Technology)	CO_2 mitigation using closed photobioreactor for algal biomass production as a feeds to for biofuel production	Dr. R. Pandit
11	Eshwar Arun	M. Tech. (Green Technology)	Reaction engineering for oligosaccharide hydrolysis of lignocellulosic biomass	Dr. R. Pandit
12	Rohra Nanda	M. Tech. (Green Technology)	Evaluating cyanobacteria as a biochemical platform studying photophysiology and genetic engineering	Dr. R. Pandit
13	Raut Amol	M. Tech. (Green Technology)	Enzymatic transformations for glycerol	Dr. R. Pandit
14	Tijori Kiran	M. Tech.	Development of strategies for enhancement of oil/ value added compound in microalgae	Dr. R. Pandit

M. CHEM. STUDENTS THESIS SUBMITTED

Sr.	Name	Course	Title of Project	Supervisor
1	Wagh Adhirath	M. Chem.	Biomass deconstruction and conversion technology	Professor A.M. Lali
2	Belgi Nitesh	M. Chem.	Scale up of chromatographic separation	Professor A.M. Lali

Ph.D. STUDENTS WHO WERE AWARDED Ph.D. DEGREE

Sr.	Name	Course	Title of Project	Supervisor
1	Khatri Rachana	Ph.D.(Sci.)	Strategies for downstream processing of natural products	Professor A.M. Lali
2	Chhaya Abhishek	Ph.D.(Sci.)	Process development for the production of biofuels using fermentation technology	Dr. R.Matlani
3	Badgujar Swati	Ph.D.(Sci.)	Strain improvement for higher butanol production	Dr. R.Matlani
4	Sivadasan Anil	Ph.D.(Sci.)	Hemicellulase engineering	Dr. R.Matlani

MEMBERSHIP OF IN-HOUSE COMMITTEES

PROFESSOR ARVIND M. LALI

- 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)

ACADEMIC AND CENTRE MANAGEMENT

Sr.	Committee	Member
1	F & A	Dr. Reena Pandit
2	Admission and Academics	Dr. Abhishek Mule
3	GB/SAC/ Chair fellow	Dr. Gunjan Prakash, Dr. Pooja Joshi
4	General Administration	Dr. Rupali Walia
5	BPT/ Lectures lode	Dr. Sandeep B. Kale Dr.Pamela Jha
6	Stores/ Electronics/ Communication	Dr. Sanjeev Chandrayan
7	Softwares/Licensing	Dr. Ashish Mishra
8	RRCs	Dr. Shamlan Reshawala
9	Projects Management	Dr. Manju Sharma
10	General upkeep & discipline	Dr. Annamma Anil, Dr. Aruna Agrawal, Dr. Aruna Mahesh
11	Attendant/Clerks/Accountant/ Non- teaching staff management	Dr. Aruna Mahesh
12	Instruments & Maintenance	Mrs. Vibha Raut Mr. Swapnil Vartak
13	Lab Upkeep + Safety + Disposal	Dr. Sandeep Kale Dr. Shamlan Reshamwala Dr. Ashish Misra

GROUP PHOTO

DBT-ICT Centre for Energy Biosciences

DBT-ICT-CEB Faculty / Non Teaching Staff And Students

DBT-ICT CEB Faculty Group

First row (from left to right): Dr. Aruna Mahesh, Mrs. Vibha Raut, Dr. Pooja Joshi, Dr. Manju Sharma, Professor Arvind.M.Lali, Dr. Rupali Walia, Dr. Ashish Misra, Mr. Sandip Kale **Second row (from left to right):** Dr. Abhishek Mule, Mr. Swapnil Vartak, Dr. Pamela Jha, Dr. Aruna Agrawal, Dr. Reena Pandit, Dr. Annamma Anil, Mrs. Swapnali Gujarathi, Dr. Sandeep Kale, Dr. Sanjeev Chandrayan **Third row (from left to right)** Dr. Shamlan Reshmwala, Mr. Sayyed Mohd. Abbas, Ms. Farha Anjum

Second & Next Generation Biofuels

First row (from left to right): Dr. Annamma Anil, Professor Arvind M. Lali **Second row (from left to right):** Netish Belgi, swapnali Gujarathi, Prathemesh Wadekar, Gourav Singh, Parmeshwar Patil **Third row (from left to right):** Lalit Khot, Mallikarjun Patil, Ritu Maurya, Vishwajeet Singh, Adirath Wagh, Bhupal Asodekar

Enzyme Technology

First row (from left to right): Dr. Sanjeev Chandrayan, Dr. Annamma Anil, Professor Arvind M. Lali **Second row (from left to right):** Rutuja Vaze, Juliet Victoria, Snehal Sawant, Monali Kavadia, Shivprasad Somvanshi **Third row (from left to right) :** Shilpa Sagwal, Manish Yadav, Valeri Rodrigues, Suruchi Rao, Mrunal Warke, Vikaram Chaudhary, Nitesh Kumar Singh

Synthetic Biology

First row (from left to right): Lucy Nainan, Suveera Bellary, Dr. Aruna Mahesh, Dr. Rupali Walia, Sonal Sawant, Shalini Deb, Sneha Sawant
Second row (from left to right): Aditya Sarnaik, Archana Krishnan, Arjun Singh Bajwa, Suruchi Rao Dr. Ashish Misra, Dr. Sanjeev K. Chandrayan, Dr. Shamlan Reshamwala

Separation Technology

First row (from left to right): Neha Sarda, Priyanka Sathe, Mandrita Chatterjee, Snehal Agrawal, Poornima Rao, Dr. Pamela Jha, Harshitha Londhe, Dr. Sandeep Kale, Anup Sonawane, Ronak Malde, Sharad Nanaware **Second row (from left to right):** Sushmita Koley, Gaurangi Deore, Richa Tiwari, Gargi Redkar, Suveera Bellary, Prashant Kumar, Manoj Chavan, Sachdeo Daware, Bhavin Patel, Anand Gupta, Febin Pappachan

Fermentation Technology

First row (from left to right): Gautam Degwekar, Hiral Shukla, Sneha Velani, Poornima Rao, Dr. Aruna Goenka Agrawal, Dr. Manju Sharma, Dr. Abhishek Mule, Suhas Gore, Arijit Das

Algal Biotechnology

First row (from left to right): Dr. Gunjan Prakash, Professor Arvind M. Lali, Dr. Reena Pandit **Second row (from left to right):** Jayant Rathod, Nanda Rohra, Swanand Gangal, Smita Patil, Juilee Palkar, Sujata Gaikwad, Chaitali Vira **Third row (from left to right):** Rahul Digrae, Siddharth Singh, Bhavya Shukla, Kiran Tijore, Aditya Sarnaik

M.Tech (BPT) 1St Year Group Photo

Supporting Staff Group Photo

First row (from left to right): Suhas Chile, Nilesh Satve, Shreya Chopadekar, Professor Arvind M. Lali, Subhash Mandavkar **Second row (from left to right):** Deepti Kataria, Shilpa Tondelkar, Megha Pujari, Sandip Ghole, Imran Khan, Santosh Yadav, Kalpesh Gugale, Mangesh Kesarkar

CENTRE OF EXCELLENCE IN PROCESS INTENSIFICATION FOR PROCESS INDUSTRIES (COE-PI) (TEQIP PHASE-II)

PROFESSOR SUNIL S. BHAGWAT

B. Chem. Eng (Mumbai, 1984),M. Chem. Eng. (Mumbai,1986),Ph.D.(Tech)(Mumbai,1989)

Head, Professor of Chemical Engineering

Coordinator, Centre of Excellence in Process Intensification For Process Industries (COE-PI) (Teqip Phase-II)

ABOUT ICT

The Institute of Chemical Technology (ICT), a Deemed University under Section 3 of UGC Act of 1956, was a Lead Institution under the Technical Education Quality Improvement Program (TEQIP) Phase –I of the Government of India. The purpose of TEQIP is to enhance capacities of institutions to become dynamic, quality conscious, efficient and responsive to rapid economic and technological developments occurring at both, and the national and international levels. ICT made impressive progress under Phase –I. In the second phase of TEQIP too, ICT has been selected for funding by MHRD, GoI, for the period July 2012-Dec 2014 with a total outlay of 12.5 Cr of which Rs. 3.75 is for equipments, 1.25 Cr for learning resources and rest is for different academic and human resource development activities. A Centre of Excellence in Process Intensification in Process Industries also has been sanctioned by MHRD, under the TEQIP program with total grant of Rs. 5.0 Cr.

ABOUNT CENTRE OF EXCELLENCE IN PROCESS INTENSIFICATION (COE-PI) :

The Center of Excellence in Process Intensification has been established under TEQIP-II, sponsored by MHRD, GoI. The Centre has taken up research activities to help industries to modify their processes with an objective of achieving reduction in the energy consumption and environmental impact. The center works on real life problems, train research students as well as improve the undergraduate education by incorporating principles of process intensification.

The center is carrying out interdisciplinary research which includes Chemical Engineering, Polymer Science and Engineering, Textiles, Food Engineering and Technology, Basic chemistry, Oils and Oleochemicals, Dyestuff Technology branches. The center will thrive to improve the existing chemical processes in terms of reduction in number of steps, equipment, time, and space and energy.

COE-PI, TEQIP PAHSE-II TEAM OF ICT

Head & Coordinator	Name	Email ID
Head of the Institute	Professor G. D. Yadav, Vice-Chancellor	gd.yadav@ictmumbai.edu.in
COE Coordinator	Professor S.S. Bhagwat	ss.bhagwat@ictmumbai.edu.in

PROJECT MODAL OFFICERS

Procurement	Professor K.S. Laddha	ks.laddha@ictmumbai.edu.in
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	Professor Radha Jayaram	rv.jayaram@ictmumbai.edu.in
Industry-Institute Interaction	Professor A.B. Pandit	ab.pandit@ictmumbai.edu.in
	Dr. S.T. Mhaske	st.mhaske@ictmumbai.edu.in

STEERING COMMITTEE

Sr.	Name	Designation	Email
1	Professor S. S. Bhagwat	Coordinator	ss.bhagwat@ictmumbai.edu.in
2	Professor N. Sekar	Principal Investigator	n.sekar@ictmumbai.edu.in
3	Professor B. M. Bhanage	Principal Investigator	bm.bhanage@ictmumbai.edu.in
4	Professor V. G. Gaikar	Member	vg.gaikar@ictmumbai.edu.in
5	Dr. P. D. Vaidya	Member	pd.vaidya@ictmumbai.edu.in
6	Dr. Shirish Karve	Member (Industry)	shirish.karve@gmail.com
7	Dr. M. G. Palekar	Member (Industry)	deepak_palekar@atul.co.in
8	Dr. Ravi Mariwala	Member (Industry)	ravi.mariwala@gmail.com

COE-PI OFFICE STAFF

1. Sachin Udmale (Upto March, 2014)
2. Supriya Gavali (From March, 2014)
3. Ganesh Kulkarni (From March, 2014)

VARIOUS RESEARCH PROJECTS UNDERTAKEN

Sr.	Faculty Name	Department	Project Name
1	Dr. C. S. Mathpati	Chemical Enggineering	Design aspects of two-opposed-jet micro-extractor: Experimental and Computational Fluid Dynamics
2	Dr. V. K. Rathod	Chemical Enggineering	Extraction of Natural Ingredients Using Novel Extraction Techniques
3	Professor N. Sekar	Dyes stuff TEchnology	Microwave Assisted/enzyme mediate extraction/ Synthesis of Bioactive colorants lutein/lycopene/ indigoid/azulenes
4	Dr. J. S .Waghmare	Oils, oleo chemicals & surfactants Technology	Enzymatic Process Intensification for the manufacture of structure lipids to enhance the yield
5	Dr. P. R. Gogate	Chemical Enggineering	Process Intensification of Crystallization Using Sonochemical Reactors

6	Dr. S. T. Mhaske	Polymer & Surface Enggineering	Process development of Nanostructure Metal oxides by sonochemical techniques
7	Professor B. M. Bhanage	Chemistry	Microwave,Ultrasound,Solar energy assisted preparation of Metal Oxide Nanomaterials
8	Professor M. S. Degani	Pharmaceutican Science & Technology	Microwave assisted halogenations reactions using flow reactor
9	Dr. R. D. kale	Fiber & Textile	Dyeing of Polyester & it's blend using Nano-emulsions
10	Dr. R. V. Jayram	Chemistry	Process intensification through catalytic process-Microwave Assisted Bifunctional Catalysis for Tandem Reactions
11	Professor R.S.Singhal	Food Enggineering & Technology	Development of ecofriendly and Cost Effective Extraction Technologies using Supercritical Carbon Dioxide
12	Professor V. G. Gaikar	Chemical Enggineering	Microwave Assisted Process Intensification : Experimental investigation for vapour phase catalytic reaction
13	Dr. P.D.Vaidya	Chemical Enggineering	Sorption-Enhanced Reforming process

RESEARCH ASSISTANTS

Sr.	Name	Project Title	PI
1	Anand Panditrao Chavan	Design aspects of two-opposed-jet micro-extractor : Experimental and Computational Fluid Dynamics	Dr. C. S. Mathpati
2	Aniket Sanjay Waval	Design aspects of two-opposed-jet micro-extractor : Experimental and Computational Fluid Dynamics	Dr. C. S. Mathpati
3	Anju Ashok Ingle	Design aspects of two-opposed-jet micro-extractor : Experimental and Computational Fluid Dynamics	Dr. C. S. Mathpati
4	Archana Sopan Aher	Extraction of Natural Ingredients Using Novel Extraction Techniques	Dr. V. K. Rathod
5	Ashwinkumar Rajkumar Wasnik	Microwave Assisted/enzyme mediate extraction/ Synthesis of Bioactive Colorant lutein/lycopene/ indigoid/azulenes	Professor N. Sekar Period
6	Asma Dadasha Fakir	Process Intensification for the manufacture of structure lipids to enhance the yield	Dr. J. S .Waghmare
7	Avinash Suryakant Mhetre	Process Intensification of Crystallization Using Sonochemical Reactors	Dr. P. R. Gogate
8	Harshawardhan Arvinda Kulkarni	Design aspects of two-opposed-jet micro-extractor : Experimental and Computational Fluid Dynamics	Dr. C. S. Mathpati
9	Hitesh Kumar Singh	Process development of Nanostructure Metal oxides by sonochemical techniques	Dr. S. T. Mhaske

10	Jayendra Pandit Ahire	Microwave,Ultrasound,Solar energy assisted preparation of Metal Oxide Nanomaterials	Professor B. M. Bhanage
11	Kavita Jaywant Lanjekar	Extraction of Natural Ingredients Using Novel Extraction Techniques	Dr. V. K. Rathod
12	Kiran Jagannath Lute	Extraction of Natural Ingredients Using Novel Extraction Techniques	Dr. V. K. Rathod
13	Manjeshwari Pahalsingh Sonar	Extraction of Natural Ingredients Using Novel Extraction Techniques	Dr. V. K. Rathod
14	Mayuri Rameshrao Vaidya	Process Intensification of Crystallization Using Sonochemical Reactors	Dr. P. R. Gogate
15	Neha Pradeep Agre	Microwave assisted halogenations reactions using reactor	Professor Mariam Degani
16	Parth Hariom Kapoor	Process development of Nanostructure Metal oxides by sonochemical techniques	Dr. S. T. Mhaske
17	Prerna babaji Kane	Dyeing of Polyester & it's blend using Niño-emulsions	Dr. R. D. kale
18	Priya Satish Singh	Process intensification through catalytic process-Microwave Assisted Bifunctional Catalysis for Tandem Reactions	Dr. R. V. Jayram
19	Puneet Pradeep Jain	Microwave assisted halogenations reactions using flow reactor	Professor M. S. Degani
20	Sadanand Shankar Kadam	Enzymatic Process Intensification for the manufacture of structure lipids to enhance the yield	Dr. J. S. Waghmare
21	Snehal Baban More	Enzymatic Process Intensification for the manufacture of structure lipids to enhance the yield	Dr. J. S. Waghmare
22	Supriya Shailendranath Patil	Microwave Assisted/enzyme mediate extraction/ Synthesis of Bioactive colorants lutein/lycopene/ indigoid/azulenes	Professor N. Sekar
23	Vikrant Gopal Gorade	Dyeing of Polyester & it's blend using Nano-emulsions	Dr. R. D.kale
24	Priyanka Ram Patil	Microwave Assisted/enzyme mediate extraction/ Synthesis of Bioactive colorants lutein/lycopene/ indigoid/azulenes	Professor N. Sekar

PROFESSOR V. G. GAIKAR
Coordinator, ICT-DAE Centre for Chemical Engineering Education and Research
Institute Coordinator, Technical Education Improvement Quality Program (TEQIP-II)
Coordinator, Innovation Networking of Institutes in Maharashtra (TEQIP-II)

ICT-DAE CENTRE

for

Chemical Engineering Education and Research

Advisory Board

Dr. Sekhar Basu,
Director , BARC, Chairperson

Professor G.D. Yadav,
Vice-Chancellor,ICT, Co- Chairperson

Dr. P. R. Vasudeva Rao
IGCAR

Dr. D. S. Shukla
BARC

Professor J B. Joshi
HBNI

Professor V.G. Gaikar,
Coordinator, ICT,

Dr. L.M. Gantayet,
Coordinator, BARC

Shri S.K. Ghosh,
BARC

Dr. R. Natarajan,
IGCAR

Professor A.B. Pandit
ICT

Professor V. G. Gaikar,
Coordinator,
ICT-DAE Centre

Professor G.D. Yadav,
Vice –Chancellor
ICT, Mumbai

Professor A.B. Pandit
Dean, RCRM

Professor S. S. Bhagwat
Head, Department of
Chemical Engineering

Dr. Ashwin W.
Patwardhan

Professor Anand V.
Patwardhan

Dr. C.S. Mathpathi

Professor Sudhir. V. Panse

Professor J. B. Joshi

Dr. V. H. Dalvi

Professor B. M. Bhange

ICT-DAE CENTRE FOR CHEMICAL ENGINEERING EDUCATION AND RESEARCH

The Institute of Chemical Technology (ICT) and the Department of Atomic Energy (DAE) instituted the ICT-DAE Centre for an interdisciplinary Ph.D. programme in Chemical Engineering to undertake R&D projects in the areas of common interest and related to nuclear, fuel cycle and advanced technologies. Under the Centre, the faculty members of the Departments of Chemical Engineering, Chemistry and physics, collaborate with the DAE Research Institutions, namely, Bhabha Atomic Research Centre (BARC) and Indira Gandhi Centre of Atomic Research (IGCAR) which are premier multidisciplinary R&D organizations engaged in research with the objective of generating knowledge and techniques for nuclear power production, advancement of science, use of radioisotopes in industry, health and agriculture as well as research in frontier areas of science and technology. BARC and IGCAR have pursued research and development in chemical engineering in a rigorous way for many years in the areas defined by DAE's mission oriented programmes as well as projects of national interest. DAE and ICT took this initiative for imparting doctoral education in chemical engineering with multidisciplinary character through the ICT- DAE Centre. DAE has to develop several innovative technologies to tackle the problems of efficient nuclear fuel utilisation in the second and third stages of nuclear power programme. This requires a pool of qualified, motivated and talented young research scientists with multidisciplinary expertise. The number of Ph.D. level chemical engineers is small in this country and the number of chemical engineers entering DAE is even less.

ICT-DAE Centre supports a interdisciplinary PhD programme with candidates drawn from Chemical Engineering, Metallurgical and Mechanical Engineering disciplines at the Bachelors and Masters Levels, and also from Chemistry, Physics and Mathematics streams with Masters degree. The Masters Degree holders in Engineering spend a minimum duration of 3 years, the Bachelors degree holder in Engineering 4 years and M.Sc. degree holder in science stream 5 years for earning the Ph.D. degree. The students are selected on the basis of written test and interviews conducted jointly by ICT and DAE.

The Ph.D. scholars take up research projects primarily defined by BARC and IGCAR. However, there is a certain degree of flexibility for selecting research projects outside the areas of relevance to DAE.

CURRENT PROJECTS WITH ICT-DAE CENTRE IN COLLABORATION WITH BARC AND IGCAR

	Title of the project and duration	Amount sanctioned	Collaborator
Name of Investigator: V. G. Gaikar			
1	Development of metal selective macrocyclic ligands supported on a solid matrix	88.4 lakhs	BARC
Name of Investigator: C. S. Mathpati			
2	Thermal hydraulic studies related to coolants for new generation reactors	80 lacs	BARC
Name of Investigator: A.B. Pandit			
3	Modelling and Simulation of Solid Fuel Burning Device		
4	Cavitation aided multiphase process: Extraction		
Name of Investigator: A. V. Patwardhan			
5	Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane	72.4 lacs	BARC

Name of Investigator: A.W. Patwardhan			
6	Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane (Co-investigator)	72.4 lacs	DAE
Name of Investigator: J. B. Joshi			
7	Studies in Synthesis and Characterization of Carbon Nanotubes by Catalytic Chemical Vapor Deposition	97 L	BARC

	Title of the project	Current Students	Status
Name of the Investigators: V.G. Gaikar			
1	Molecular Modelling studies for designing of extractants for metal ion separations	Jyotsna S. Arora	a. Hydration studies of zirconyl cation with and without the presence of chloride ions has been completed at B3LYP level and the computed geometrical parameters are compared with literature XRD values. b. Quantum Mechanical studies using the implicit solvation model were successfully completed to study the selectivity of antimony(V) and antimony(III) over cobalt(II) and zirconium(IV) using thiourea loaded on CMPS. c. Adsorption studies for selectivity of antimony(V) and antimony(III) on thiourea immobilized CMPS and correlation of modeling studies with experiments. d. Five new ligands are designed for the selective separation of bismuth(III) against copper(II). e. Semi empirical as well as DFT studies have been performed to study the interaction of bismuth(III) and copper(II) with the designed extractant.
2		Meena Singh	a. Solvation studies of Neodymium nitrate with different concentrations of nitric acid have been performed. b. This study is helpful in determining the coordination structure of Neodymium ion in water. c. Molecular dynamic simulations have been performed to study the behavior of TODGA in organic phase (dodecane) with different concentration of nitric acid. d. These studies have been done to see how TODGA molecule interacts with the molecules of nitric acid and water. e. These simulations also helpful in studying the aggregation behavior of TODGA molecules in dodecane.
3		Vishal Sawant	a. Citric acid and its derivative loaded on CMPS functional polymer are designed and synthesized for selective separation of lanthanides and actinides as well as cesium and strontium. b. Mesoporous silica was synthesized for synthesis of silica based extractant
4	Novel Reactor Design for synthesis of different oleochemicals	Pravin Bote	a. Experimental part of continuous hydrolysis of raw castor oil is completed with complete conversion of triglycerides. b. System is optimized for different parameters like flow rate, temperature and concentrations. c. New setup for the continuous cracking of sodium ricinoleate (screw conveyor) is installed and tested for the reaction.

			d. Simulation of screw conveyor on SOLIDWORKS for mixing studies. Model has been developed in the SOLIDWORKS and is simulated for mixing. Simulation for heat transfer across the reactor is going on.
Name of the Investigators: Mathpati C. S., Patwardhan A. W.			
5	Thermal hydraulic studies related to coolants for new generation reactors (Full Report in Appendix I)	Sona C.S.Gajbhiye, Sawant, S. Divya, R.	Corrosion experiments were conducted for different metals in purified FLiNaK salt and also in Chloride salts (KCl-MgCl2). Among the different metals studied, Ni- Mo based low Cr Hastelloy-B showed lesser rate of corrosion. SEM analysis was performed on metal surfaces to understand the surface morphology and ICP-AES analysis was performed for the salt to quantify the amount of Cr dissolved in the salt. Heat transfer experimental set-up was tested using thermic fluid. The effect of addition of reducing agent Zr into the salt to prevent corrosion was experimentally studied. The effect of addition of purifying agent ammonium bifluoride into salt to prevent corrosion was experimentally studied.
6	Computational fluid dynamics and experimental study of fluidization of lithium titanate particles in fluidized and packed fluidized bed	Sandeep N. Gosavi	a. Literature survey for modeling of fluidized bed and packed fluidized bed was done. CFD modeling of unary gas solid fluidized in commercial software is being done and the resultsare being compared with experimental data. The simulations for 2D geometry are performed. This has enabled to understand the basic modeling approach for GS fluidized bed and then we are now moving to more complex scenarios. b. Hands-on experience of CFD tools.
Name of the Investigator: A.B. Pandit			
7	Modelling and Simulation of Solid Fuel Burning Device (Full Report in Appendix II)	Zakir Husain	a. Simulation of fluids flow from vertical and horizontal pipe to find out velocity and pressure profile b. To simulation of two phase flow in packed bed. a. To development of Heat transfer model for functioning of a cook stove
8	Cavitation aided multiphase process: Extraction (Full Report in Appendix III)	Yogesh Ladola	a. Insights into acoustic cavitation enhanced uranium dissolution b. Acoustic mapping equipment and electronics in place, data being generated. c. Data to be analysed for design recommendation.
Name of the Investigators: A. V. Patwardhan and A. W. Patwardhan			
9	Transport of Actinides and Fission Products across Hollow Fibre Supported Liquid Membrane	Swapnil Chaudhari	a. Flat sheet supported liquid membrane experiments were conducted for the extraction of lead ions using D2EHPA as extractant using selected polymeric membrane. b. The flat sheet set up has been already installed in an institute to study the transport mechanism of metal ions. c. Experiments had completed for the removal of Pb2+ ions through Hollow Fiber Supported Liquid Membrane using Di-2-Ethyl Hexyl Phosphoric acid

Name of Investigator: J. B. Joshi			
10	Studies in Synthesis and Characterization of Carbon Nanotubes by Catalytic Chemical Vapor Deposition	Anita Sharma	a. Preparation of catalysts b. Preparation of N-CNTs using fixed bed c. Washing and drying of N- CNTs using strong acids to achieve pure and catalyst freeN-CNTs. d. Generation of the kinetic data using fixed bed. e. Application of N-CNTs for hydrogen storage
11	Study Of Optical And Thermal Performance Of Compound Parabolic And Parabolic Trough Collectors	Ramchandra G. Patil	1. In-situ functionalization of CNTs by using Nitrogen precursors and inert gas in a fluidised bed 2. Other applications of N-doped CNT..
12	Flow visualization and Computational Fluid Dynamics in Multiphase Reactors	Zoheb Khan	1. Wide range of geometries simulated by DNS 2. Code written for Sophisticated analysis of time series data to yield coherent flow structures 3. Sophisticated Image Processing algorithms implemented 4. Two peer reviewed publications generated
Name of Investigator: B. M. Bhanage			
13	Preparation and studies of metal -1,3-diketonates, metallocenes and their applications Studies in C-C, C-N, C-O and C-S bond formation reactions and kinetic investigations	Satish Lanke	1. Insights into preparation of metal and metal hydroxide nanoparticles and their catalytic application 2. Preparation of metal-organic complexes 3. Four publications in peer reviewed journals and one patent.

1. Apex Project No. & Title: **Molecular Modeling studies for designing of extractants for metal ion separations.**

Research Students: (Ph.D.) **Ms. Jyotsna S. Arora, Ms. Meena B. Singh, Mr. Vishal M. Sawant**

A0.	Major physical/ technical progress achieved till end of Mar-2014 **(Cumulative)**
	❖ Hydration studies of zirconyl cation with and without the presence of chloride ions has been completed at B3LYP level and the computed geometrical parameters are compared with literature XRD values. ❖ Quantum Mechanical studies using the implicit solvation model were successfully completed to study the selectivity of antimony(V) and antimony(III) over cobalt(II) and zirconium(IV) using thiourea loaded on CMPS. ❖ Adsorption studies for selectivity of antimony(V) and antimony(III) on thiourea immobilized CMPS and correlation of modeling studies with experiments. ❖ Five new ligands are designed for the selective separation of bismuth(III) against copper(II). ❖ Semi empirical as well as DFT studies have been performed to study the interaction of bismuth(III) and copper(II) with the designed extractant. ❖ Out of 5, one of the ligand designed for Bi(III) complexation has been successfully synthesized.

	❖ Solvation studies of Neodymium nitrate with different concentrations of nitric acid have been performed. ❖ This study is helpful in determining the coordination structure of Neodymium ion in water. ❖ Molecular dynamic simulations have been performed to study the behavior of TODGA in organic phase (dodecane) with different concentration of nitric acid. ❖ These studies have been done to see how TODGA molecule interacts with the molecules of nitric acid and water.
	❖ These simulations also helpful in studying the aggregation behavior of TODGA molecules in dodecane. ❖ Citric acid and its derivative loaded on CMPS functional polymer are designed and synthesized for selective separation of lanthanides and actinides as well as cesium and strontium. ❖ Mesoporous silica was synthesized for synthesis of silica based extractant
A1.	Major physical/ technical progress achieved during 2013-14
	❖ Adsorption studies for antimony(V) complexation with thiourea loaded on CMPS and correlation of modeling studies with experiments. ❖ Designing of ligands for selective separation of bismuth(III) from copper electrolytic solution. Molecular dynamics simulations have been carried out: ❖ To understand the interaction between ions and water molecules in aqueous alkali halide solution. And its effect on equilibrium and dynamic properties of solution. ❖ We have provided a microscopic description of LiCl diffusivity in water and systematic view of alkali halide structure in water. The diffusion coefficient and coordination structure of ions change with change in alkali halide concentration. Theoretical and experimental data have been compared. ❖ Quantum mechanical studies of the various complexes formed by lithium ion at various concentrations of lithium chloride in water have been done to get the proper coordination number and geometry of complexes using GAUSSIAN-09. ❖ Loading of citric acid and its derivative on CMPS functional polymer and extraction studies of metal ions by using the new adsorbent ❖ Loading of citric acid and its derivative on mesoporous silica as inert support and extraction studies of metal ions by using it.
A2.	Major achievements (physical/ technical) for the year 2014-15: **(Current Year)**
	❖ Adsorption studies for antimony(V) and antimony(III) complexation with thiourea immobilized CMPS and correlation of modeling studies with experiments. ❖ Designing and synthesis of ligands for selective separation of bismuth(III) from copper electrolytic solution and experimental verification. ❖ The QM studies are verified with experimental Kd values obtained at different pH values for antimony(V) separation. ❖ 5 new ligands were designed for selective separation of bismuth(III) against copper(II). ❖ Out of 5, one of the ligand designed for Bi(III) complexation has been successfully synthesized ❖ Experimental work : Synthesis and loading of the remaining designed ligands on an inert matrix for the separation of bismuth from synthetic copper electrolyte solution. ❖ Verification of experiments with quantum studies of Bi(III). ❖ MP2 calculations for zirconyl cation hydration studies using implicit solvation model, to study the complexation of neodymium ion with TODGA and Molecular dynamic study of neodymium ion in organic phase through the synthetic membranes. ❖ Studied the behavior of neodymium ion in aqueous phase, molecular dynamic study of neodymium nitrate in various concentrations of nitric acid is done. This study is done basically to get the complex structure of neodymium ion in dilute nitric acid. ❖ The behavior of TODGA with different concentration of HNO3 molecular dynamic studies has been studied. ❖ Determination of coordination structure of Neodymium ion with TODGA as ligand. ❖ Molecular dynamic study of above system through polypropylene membrane. ❖ Going to perform molecular dynamic study of Copper ion or other metal ion, to study the extraction of Copper (III) ion from aqueous phase to organic phase with the help of extractant through polymer membrane. Complexation studies will also be done for copper (III) ion in aqueous phase and with the extractant.

	❖ Citric acid and its derivative loaded on CMPS functional polymer are designed and synthesized for selective separation of lanthanides and actinides as well as cesium and strontium. ❖ Mesoporous silica was synthesized for synthesis of silica based extractant. ❖ Loading of citric acid and its derivative on mesoporous silica as inert support and extraction studies of metal ions by using it. ❖ Studies of interaction of metal ions with ligands by using quantum mechanics(QM) studies going on

Apex Project No. & Title : **Novel Reactor Design for synthesis of different oleochemicals**
Research Fellow: **Pravin Pralhad Bote**

A0.	Major physical/ technical progress achieved till end of Mar-2014 **(Cumulative)**
	Experimental part of continuous hydrolysis of raw castor oil is completed with complete conversion of triglycerides.System is optimized for different parameters like flow rate, temperature and concentrations. A new setup for the continuous cracking of sodium ricinoleate (screw conveyor) is installed and tested for the reaction.
A1.	Major physical/ technical progress achieved during 2013-14 **(Previous Year)**
	Simulation of screw conveyor for mixing studies has been developed in the SOLIDWORKS. It also is simulated for mixing. Simulation for heat transfer across the reactor. Installation of screw conveyor (modified design) and its testing has been completed
A2.	Major achievements (physical/ technical) for the year 2014-15: **(Current Year)**
	a) Major programme planned to be achieved (targeted) for the year 2014-15: Continuous cracking of sodium ricinoleate to sodium sebacate in screw conveyor at different RPM and temperature as been studied Optimization of process for different parameters on screw conveyor is on Kinetics of continuous cracking of sodium ricinoleate on screw conveyor. Residence time experiments on screw conveyor for better prediction of system. Simulation of screw conveyor for heat transfer and mass transfer aspects of the system Continuous runs on new screw extruder system.
	b(i) Actual achievements during the year 2014-15 (from April-14 to June-14):
	Continuous cracking sodium ricinoleate to sodium sebacate in screw conveyor at different RPM and temperature is completed. Optimization of process for different parameters on screw conveyor is done. Simulation of screw conveyor for the mixing is completed on SOLIDWORKS at different RPM (1 to 10 RPM)
A3.	Proposed Achievements/ Programme for the year 2014-15 **(Current Year)**
	Completion of all the work which is planned for current year. Design of new reactors for pyrolytic reactions

Apex Project No. & Title :**Thermal hydraulic studies related to coolants for new generation reactors**
Research Students: **(Ph.D.) Ms. Sona C. S., Mr. Bhavesh Gajbhiye, Mr. Shekhar Sawant**

A0.	Major physical/ technical progress achieved till end of June 2014 (Cumulative)
	Effect of vacuum drying of the FLiNaK salt prior to corrosion testing has been studied on Inconel-625 and Hastelloy-B. SEM analysis has been performed on the corroded metal samples. ICP-AES has been performed for the salt used in the study. Experimental set up to study the heat transfer characteristics of molten salt has been fabricated with Hastelloy B alloy. The set up has been installed at the institute and trial run has been taken with thermic fluid, "Thermia B". CFD simulation has been performed to study the heat and flow characteristics of FLiNaK.
A1.	Major physical/ technical progress achieved during 2013-14 Corrosion experiments were conducted for different metals in purified FLiNaK salt and also in Chloride salts (KCl-MgCl2). Among the different metals studied, Ni- Mo based low Cr Hastelloy-B showed lesser rate of corrosion. SEM analysis was performed on metal surfaces to understand the surface morphology and ICP-AES analysis was performed for the salt to quantify the amount of Cr dissolved

	in the salt. Heat transfer experimental set-up was tested using thermic fluid. The effect of addition of reducing agent Zr into the salt to prevent corrosion was experimentally studied. The effect of addition of purifying agent ammonium bifluoride into salt to prevent corrosion was experimentally studied.
A4.	Remarks
	Decrease in corrosion rate was observed after vacuum drying of FLiNaK as compared to metals tested with pre heated salt. No significant reduction in corrosion rate was observed with Nickel coating on metals and Zr and Ammonium bifluoride additions in the salt .

Apex Project No. &Title :"**MODELLING AND SIMULATION OF SOLID FUEL BURNING DEVICES**"
Research Student: **Zakir Husain Md. Yusuf.**

A0.	Major physical/ technical progress achieved till end of March-2014 **(Cumulative)**
	❖ Learning of Computational Fluid Dynamics (CFD). ❖ Did some basic tutorials of CFD. ❖ Did simulation for flow of fluids (air & water) in vertical and horizontal pipe for velocity and pressure profile in pipe. ❖ Doing two phase simulation for packed bed. Trying to find out velocity, pressure profile and pressure drop in packed bed.
A2.	Major achievements (physical/ technical) for the year 2013-14:
	a) Major programme planned to be achieved (targeted)
	❖ To develop Fluid Flow model for the working of a cook stove. ❖ To develop Heat transfer model for functioning of a cook stove. ❖ To develop Pyrolysis model for cook stove for cellulosic bio-mass. ❖ To develop Combustion model for cook stove for cellulosic bio-mass.
	b(i) Actual achievements during the year 2013-14 Simulation of fluids flow from vertical and horizontal pipe to find out velocity and pressure profile.
	b(ii) Likely achievements during the year 2013-14 ❖ To simulate two phase flow in packed bed. ❖ To develop Heat transfer model for functioning of a cook stove.

Apex Project No. & Title: T**ransport of Actinides and fission products across hollow fiber supported liquid membrane (HFSLM).**
Research Student: **Swapnil R. Chaudhari**

A0.	Major physical/ technical progress achieved till end of June-2014 **(Cumulative)**
	Extraction of Cobalt, Zinc, Strontium, and Neodymium has been performed through hollow fibre supported liquid membrane (HFSLM). The extraction of lead and cadmium using Flat Sheet and Hollow Fiber Supported Liquid Membrane is in under process. The set up to study the above experiment has been already installed in an institute. Mathematical model developed to represent transport mechanism in membranes. The model is used to estimate separation efficiencies for different process conditions. This will help in predicting the long term use of the contactors and also scaling up of the process.
A1.	Major physical/ technical progress achieved during 2013-14 **(Previous Year)**
	(i) Flat sheet supported liquid membrane experiments were conducted for the extraction of lead ions using D2EHPA as extractant using selected polymeric membrane. (ii) The flat sheet set up has been already installed in an institute to study the transport mechanism of metal ions. (III) Experiments had completed for the removal of Pb2+ ions through Hollow Fiber Supported Liquid Membrane using Di-2-Ethyl Hexyl Phosphoric acid.

Apex Project No. & Title : **Synthesis of Carbon Nanotubes**

Research Student : **Anita Sharma**

A0.	Major physical/ technical progress achieved till end of July-2014(**Cumulative**)
	Carbon nanotubes were synthesized by catalytic chemical vapour deposition of acetylene. Initially static bed was used to understand the growth mechanism of carbon nanotubes, before large scale production by fluidized bed method. Fixed bed was used to analyze the production of carbon nanotubes using two types of catalysts; supported catalysts and floating catalyst. Three catalysts were prepared using Magnesium Oxide (MgO) as a support namely, Cobalt/MgO, Cobalt-Molybdenum/ MgO, and ferrocene/ carbon black. Depending on the yields obtained for CNTs using the catalysts, the N-doped CNTs were synthesized using Imidazole as both carbon and nitrogen precursor. The inert gas used was Argon. The reactions were carried out for about 30 mins in a two stage furnace where temperature in the first zone was kept low so as to vaporise the precursor and second zone was kept at the decomposition temperature of carbon to for CNTs. The obtained CNTs were washed and cleaned using 50% conc. Hydrochloric acid to remove the catalysts and other impurities if any. The N-CNTs obtained were characterized using SEM, TEM, surface area analysis, XRD and XPS techniques for determination of nitrogen content in the CNTs

Apex Project No. &Title : **Study of optical and thermal performance of compound parabolic trough (CPC) and parabolic trough collector (PTC)**

Research Student: **Ramchandra G.Patil**

A0.	**Major physical/ technical progress achieved**
	1) A Ray Tracer program has been developed to study the optical performance of different solar reflector. The program is versatile tool to estimate the annual performance of the reflectors.
	2) Effect of non-uniform temperature on heat loss from non-evacuated receiver of solar receiver has been studied. This work was done in two phase First phase: Non-uniform temperature on receiver pipe was assumed to be sinusoidal and square wave. Radiation and forced convection excluded from the study. Only single pipe diameter 48 mm was considered. Second phase: Energy balance has been established to calculated temperature distribution on receiver pipe. These temperature distributions were used for optimization of receiver pipe for minimum heat loss. All mode of heat transfer included in this study. Receiver pipe diameter were varied from 33 mm to 102 mm.
A1.	**Major physical/ technical progress achieved**
	❖ A 100 m2 CPC steam Generator with CR 12 and manual tracking (twice a day) system was designed, installed and tested at ICT. Numbers of experiments have been performed on this system to study the performance of it. We found out that, system can be operated around 120 °C temperature with 48% maximum efficiency. ❖ In first phase of an optimization of PTC receiver, the performance of receiver having diameter 48 mm, has been studied. Radiation in the annular gap and forced convection outside the glass tube have been neglected in this study.
A2.	**Major achievements (physical/ technical) for the year 2013-14:**
	a) Major program planned to be achieved (targeted) for the year 2013-14:
	Optimization of linear reflector cavity receiver We developed new type of linear reflector cavity receiver for line focusing reflectors. In such receiver, pipe enclosed in air filled cavity. Pipe facing surface of cavity is mirrored. The other surface is insulated from surrounding. Concentrated solar insolation entered through small opening at the bottom of the cavity. Optical and thermal performance of such receiver is better than conventional tubular receiver.
	b(i) Actual achievements during the year 2013-14 : In second phase of optimization of receiver study, all mechanism of heat losses from receiver have been considered. The values of diameters of receiver pipe taken in this study are 0.033m, 0.048m, 0.06m, 0.07m, 0.089 and 0.102m. The RR varied from 1.25 to 3 by changing diameter of glass tube.

Apex Project No. &Title : **Preparation and studies of metal -1,3-diketonates, metallocenes and their applications**

Research Student : **Satish Lanke**

A0.	Major physical/ technical progress achieved till end of March-2014 (Cumulative)
	A. **Preparation of Metal and Metal oxide nanoparticles with their catalytic application.** ❖ Hydroarylation of arenes with styrenes using Montmorillonite K-10 as an efficient, selective, and recyclable catalyst. ❖ Copper bis(2,2,6,6-tetramethyl-3,5-heptanedionate) catalyzed coupling of sodium azide with aryl iodides/boronic acids to aryl azides or aryl amines. ❖ Amberlyst-15©: An efficient heterogeneous reusable catalyst for selective anti-Markovnikov addition of thiols to alkenes/alkynes and for thiolysis of epoxides. ❖ Nickel catalyzed three-component coupling reaction of terminal alkynes, dihalomethane and amines to propargylamines. ❖ Kinetics of hydroarylation of p-cresol with styrene using Montmorillonite K-10 as a heterogeneous catalyst. ❖ Amberlyst-15©: An efficient heterogeneous reusable catalyst for hydroarylation of cinnamic acid with phenols under solvent-free conditions and kinetics study. ❖ One-pot, three component and highly efficient synthesis of benzimidazoles through copper-Catalyzed condensation and C−N bond formation reaction. **B. Preparation of 1,3 diketonate complexes and Analysis-** ❖ Prepared of Zirconium actylacetonate [Zr(acac)2] – 400 gm ❖ Prepared Palladium(II) acetylacetonate [Pd(acac)2] - 10 gm. ❖ Prepared Nickel acetylacetonate [Ni(acac2)] - 40 gm ❖ Prepared Yttrium acetylacetonate [Y(acac)2] – 520 gm ❖ Prepared Alluminiumacetylacetonate [Al(acac)2] – 50 gm **C. Preparation of Ammonia Borane Complex**

Apex Project No.& Title : **Computational fluid dynamics and experimental study of fluidization of lithium titanate particles in fluidized and packed fluidized bed.**

Research Student: **Sandeep N. Gosavi**

Co-Investigator from BARC: Dr. D. Mandal, Head, Materials Section

Chemical Engineering Division, Bhabha Atomic Research Centre, Trombay, Mumbai, PIN: 400085

A0.	**Major physical/ technical progress achieved till end of June 2014**
	❖ Literature survey for modeling of fluidized bed and packed fluidized bed was done. CFD modeling of unary gas solid fluidized in commercial software is being done and the resultsare being compared with experimental data. The simulations for 2D geometry are performed. This has enabled to understand the basic modeling approach for GS fluidized bed and then we are now moving to more complex scenarios. ❖ Hands-on experience of CFD tools.
	Remarks (Elaborating slippages, constraints, difficulties faced in implementation etc.)
	Experimental trials of packed fluidized bed for their performance are inadequate in literature except for the work by BRNS and IIT-B. So for validating the results of Modeling some experiments may need to be performed.

Ph.D. SCHOLARS CURRENTLY UNDER ICT-DAE CENTRE OF CHEMICAL ENGINEERING EDUCATION

No.	Name	Title of Ph. D. Project	Previous Institute	Qualification	Supervisor
1	Jyotsna S. Arora	Molecular Modelling studies for designing of extractants for metal ion separations	Wilson College	M. Sc. (Organic Chemistry)	Professor V. G. Gaikar
2	Vishal Sawant	Flow visualization and Computational Fluid Dynamics in Multiphase Reactors	UDC, Mumbai	M. Sc. (Organic Chemistry)	Professor V. G. Gaikar
3	Pravin Bote	Novel Reactor Design for synthesis of different oleochemicals	Bharti Vidyapeeth CoE, Kharghar	B.E.	Professor V. G. Gaikar
4	Meena Singh	Molecular Dynamic study of metal ions and design of ligands for metal extraction	RYK college, Nashik, (University of Pune)	M. Sc. (Organic Chemistry)	Professor V. G. Gaikar
5	Zakir Husain Md. Yusuf.	Modelling and Simulation of solid fuel burning devices"			Professor J.B. Joshi
6	Swapnil R. Chaudhari	Transport of Actinides and fission products across hollow fibre supported liquid membrane (HFSLM).	ICT	M.Chem.	Professor A. V. Patwardhan
7	Anita Sharma	Synthesis of Carbon Nanotubes	ICT	M.Chem. Engg	Professor A. V. Patwardhan
8	Ramchandra G. Patil	Study of optical and thermal performance of compound parabolic trough (CPC) and parabolic trough collector (PTC)	Ruia College, University of Mumbai	M.Sc. Analytical Chemistry	Dr. Sudhir. V. Panse
9	Satish Lanke	Preparation and studies of metal -1,3-diketonates, metallocenes and their applications		M.Sc.	Professor B. M. Bhanage
10	Sandeep N. Gosavi	Computational fluid dynamics and experimental study of fluidization of lithium titanate particles in fluidized and packed fluidized bed.	ICT, Mumbau	MChemEngg	Dr. C. S. Mathpati
11	Sona C.S.	Thermal hydraulic studies related to coolants for new generation reactors	ICT,	M.Tech	Dr. C. S. Mathpati
12	Yogesh Ladola	Cavitation aided multiphase process: Extraction			Professor A.B. Pandit
13	Zoheb Khan	Flow visualization and Computational Fluid Dynamics in Multiphase Reactors	DJ Sanghvi College of Eng	B.E.	Professor J.B. Joshi

Ph.D. SCHOLARS UNDER ICT-DAE CENTRE OF CHEMICAL ENGINEERING EDUCATION WHO GRADUATED IN 2013

No.	Name	Project	Supervisor
1	Rahul Kumbhar	Self-assembly of tethered nanoparticle: Macromolecule for tailored nanoparticle	Professor G. D. Yadav
2	Aniruadha Patil	Preparation and studies of metal-1,3-diketonates, metallocenes and their applications	Professor B. M. Bhanage
3	Ravi Sundari	A study on hydrogen production by steam reforming	Dr. P. D. Vaidya
4	Shaila Bajoria	Kinetics and equilibrium study for TBP-diluent-nitric acid system	Dr. V. K. Rathod
5	Prasad V. Vernekar	Membrane Separation Processes	Dr. A. W. Patwardhan
6	Ajit Kulkarni	Experimental and computational investigation of gas entrainment	Dr. A. W. Patwardhan
7	Satish Lanke	Studies in C-C, C-N, C-O and C-S bond formation reactions and kinetic investigations	Professor B. M. Bhanage

PUBLICATIONS IN PEER REVIEWED JOURNALS (2013-14)

Authors	Title	Journal	Vol.	Pages	Year
Singh, M.L., Tripathi, S.C., Lokhande, M., Gandhi, P.M., Gaikar, V.G	Density, viscosity, and interfacial tension of binary mixture of Tri- iso -amyl phosphate (TiAP) and n -dodecane: Effect of compositions and gamma absorbed doses	Journal of Chemical and Engineering Data	59	1130-1139	2014
Singh, M.L., Tripathi, S.C., Venkata, P.P.K., Gaikar, V.G.	Correlations among composition, temperature, and density, viscosity, or derived thermodynamic properties of binary mixtures of Tri-n-butyl phosphate with n-hexane or n-dodecane	Industrial and Engineering Chemistry Research	53	3795-3804	2014
Madyal, R. S. and Arora, J. S. (Independent Publication by students)	DFT studies for the evaluation of amine functionalized polystyrene adsorbents for selective adsorption of carbon dioxide	RSC Advances	4	20323-20333	2014
Prajapati, R.R., Srinivasan, T.G., Chandramouli, V., Bhagwat, S.S.	Dissolution kinetics of zirconium dioxide in nitric acid	Desalination and Water Treatment	52	490-497	2014
Sona, C.S., Khanwale, M.A., Mathpati, C.S., Borgohain, A., Maheshwari, N.K.	Investigation of flow and heat characteristics and structure identification of FLiNaK in pipe using CFD simulations	Applied Thermal Engineering	70	451-461	2014
Sona, C.S., Gajbhiye, B.D., Hule, P.V., Borgohain, A., Maheshwari, N.K.	High temperature corrosion studies in molten salt-FLiNaK	Corrosion Engineering Science and Technology	49	287-295	2014

Gore, M.M., Saharan, V.K., Pinjari, D.V., Chavan, P.V., Pandit, A.B.	Degradation of reactive orange 4 dye using hydrodynamic cavitation based hybrid techniques	Ultrasonics Sonochemistry	21	1075-1082	2014
Ladola, Y.S., Chowdhury, S., Roy, S.B., Pandit, A.B.	Application of cavitation in uranium leaching	Desalination and Water Treatment	52	407-414	2014
Raut-Jadhav, S., Saharan, V.K., Pinjari, D.V., (...), Sonawane, S.H., Pandit, A.B.	Intensification of degradation of imidacloprid in aqueous solutions by combination of hydrodynamic cavitation with various advanced oxidation processes (AOPs)	Journal of Environmental Chemical Engineering	1	850-857	2013
Barkade, S.S., Pinjari, D.V., Nakate, U.T., Sonawane, S.H., Pandit, A.B.	Ultrasound assisted synthesis of polythiophene/SnO2 hybrid nanolatex particles for LPG sensing	Chemical Engineering and Processing: Process Intensification	74	115-123	2013
Pinjari, D.V., Prasad, K., Gogate, P.R., Mhaske, S.T., Pandit, A.B.	Intensification of synthesis of zirconium dioxide using ultrasound: Effect of amplitude variation	Chemical Engineering and Processing: Process Intensification	74	178-186	2013
Vernekar, P.V., Jagdale, Y.D., Patwardhan, A.W., Ansari, S.A., Mohapatra, P.K	Non-Dispersive Solvent Extraction of Neodymium using N,N,N′,N′-Tetraoctyl Diglycolamide (TODGA)	Separation Science and Technology (Philadelphia)	49	1541-1554	2014
Vernekar, P.V., Jagdale, Y.D., Sharma, A.D., Ansari, S.A., Mohapatra, P.K.	Simultaneous Extraction of Neodymium and Uranium using Hollow Fiber Supported Liquid Membrane	Separation Science and Technology (Philadelphia)	49	1509-1520	2014
Jagdale, Y.D., Vernekar, P.V., Patwardhan, A.W., Mohapatra, P.K., Manchanda, V.K.	Mathematical model for the extraction of metal ions using hollow fiber supported liquid membrane operated in a recycling mode	Separation Science and Technology (Philadelphia)	48	2454-2467	2013
Vernekar, P.V., Patwardhan, A.W., Patwardhan, A.V., Mohapatra, P.K., Manchanda, V.K.	Mathematical Model for the Extraction of Neodymium from Nitrate Media using Hollow Fiber Supported Liquid Membrane Operated in a Recycling Mode	Separation Science and Technology (Philadelphia)	48	1003-1014	2013
Jagdale, Y.D., Patwardhan, A.W., Shah, K.A., Ansari, S.A., Mohapatra, P.K.	Transport of strontium through a hollow fibre supported liquid membrane containing N,N,N′,N′-tetraoctyl diglycolamide as the carrier	Desalination	325	104-112	2013

Vernekar, P.V., Jagdale, Y.D., Patwardhan, A.W., Mohapatra, P.K., Manchanda, V.K.	Transport of cobalt(II) through a hollow fiber supported liquid membrane containing di-(2-ethylhexyl) phosphoric acid (D2EHPA) as the carrier	Chemical Engineering Research and Design	91	141-157	2013
Sona, C.S., Gajbhiye, B.D., Hule, P.V., Borgohain, A., Maheshwari, N.K.	High temperature corrosion studies in molten salt-FLiNaK	Corrosion Engineering Science and Technology	49	75-81	2014
Dukhande, V.A., Choksi, T.S., Sabnis, S.U., Patwardhan, A.W., Patwardhan, A.V.	Separation of toluene from n-heptane using monocationic and dicationic ionic liquids	Fluid Phase Equilibria	342	75-81	2013
Bajoria, S.L., Rathod, V.K.	Removal of dissolved tri-n-butyl phosphate from aqueous nitric acid solutions: kinetic studies	Desalination and Water Treatment	Article in Press		2014
Lade, V.G., Pakhare, A.D., Rathod, V.K.	Lade, V.G., Pakhare, A.D., Rathod, V.K.	Industrial and Engineering Chemistry Research	53	4812-4820	2014
Panadare, D.C., Lade, V.G., Rathod, V.K.	Adsorptive removal of copper(II) from aqueous solution onto the waste sweet lime peels (SLP): Equilibrium, kinetics and thermodynamics studies	Desalination and Water Treatment	Article in Press		2013
Lade, V.G., Rathod, V.K., Bhattacharyya, S., Manohar, S., Wattal, P.K.	Comparison of normal phase operation and phase reversal studies in a pulsed sieve plate extraction column	Chemical Engineering Research and Design	91	1133-1144	2013
Bajoria, S.L., Rathod, V.K., Pandey, N.K., Mudali, U.K., Natarajan, R.	Effect of tri-n-butyl phosphate on physical properties of dodecane-nitric acid system	Journal of Radioanalytical and Nuclear Chemistry	295	271-276	2013
Ghatage, S.V., Peng, Z., Sathe, M.J., Joshi, J.B., Evans, G.M.	Stability analysis in solid-liquid fluidized beds: Experimental and computational	Chemical Engineering Journal	256	169-186	2014
Peng, Z., Ghatage, S.V., Doroodchi, E.,, Evans, G.M., Moghtaderi, B.	Forces acting on a single introduced particle in a solid-liquid fluidised bed	Chemical Engineering Science	116	49-70	2014
Rane, C.V., Ekambara, K., Joshi, J.B., Ramkrishna, D.	Effect of impeller design and power consumption on crystal size distribution	AIChE Journal	Article in Press		2014
Punjabi, S.B., Sahasrabudhe, S.N., Ghorui, S., Ganguli, A.A., Joshi, J.B.	Flow and temperature patterns in an inductively coupled plasma reactor: Experimental measurements and CFD simulations	AIChE Journal	Article in Press		2014

Kalaga, D.V., Dhar, A., Dalvi, S.V., Joshi, J.B.	Particle-liquid mass transfer in solid-liquid fluidized beds	Chemical Engineering Journal	245	323-341	2014
Tamhane, T.V., Joshi, J.B., Patil, R.N.	Performance of annular centrifugal extractors: CFD simulation of flow pattern, axial mixing and extraction with chemical reaction	Chemical Engineering Science	110	134-143	2014
Gadgil, O.D., Dalvi, V.H., Shenoy, K.T., Ghosh, S.K., Joshi, J.B.	Kinetics of extraction of uranium from phosphoric acid by D2EHPA-TBP and D2EHPA-TOPO systems using constant interfacial area stirred cell	Chemical Engineering Science	110	169-184	2014
Patil, R.G., Kale, D.M., Panse, S.V., Joshi, J.B.	Numerical study of heat loss from a non-evacuated receiver of a solar collector	Energy Conversion and Management	78	617-626	2014
Dasgupta, K., Joshi, J.B., Singh, H., Banerjee, S.	Fluidized bed synthesis of carbon nanotubes: Reaction mechanism, rate controlling step and overall rate of reaction	AIChE Journal	60	2882-2892	2014
Patil, R.G., Panse, S.V., Joshi, J.B.	Optimization of non-evacuated receiver of solar collector having non-uniform temperature distribution for minimum heat loss	Energy Conversion and Management	85	70-84	2014
Shinde, Y.H., Vijayadwhaja, A., Pandit, A.B., Joshi, J.B.	Kinetics of cooking of rice: A review	Journal of Food Engineering	123	113-129	2014
Ghatage, S.V., Bhole, M.R., Padhiyar, N., Joshi, J.B., Evans, G.M.	Prediction of regime transition in three-phase sparged reactors using linear stability analysis	Chemical Engineering Journal	235	307-330	2014
Bagul, R.K., Pilkhwal, D.S., Vijayan, P.K., Joshi, J.B.	Entrainment phenomenon in gas-liquid two-phase flow: A review	Sadhana - Academy Proceedings in Engineering Sciences	38	1173-1217	2013
Joshi, J.B., Nayak, A.K., Singhal, M., Mukhopadhaya, D.	Core safety of Indian nuclear power plants (NPPs) under extreme conditions	Sadhana - Academy Proceedings in Engineering Sciences	38	945-970	2013
Sathe, M., Joshi, J., Evans, G.	Characterization of turbulence in rectangular bubble column	Chemical Engineering Science	100	52-68	2013
Ghatage, S.V., Sathe, M.J., Doroodchi, E., Joshi, J.B., Evans, G.M.	Effect of turbulence on particle and bubble slip velocity	Chemical Engineering Science	100	120-136	2013
Mitra, S., Sathe, M.J., Doroodchi, E., Joshi, J.B., Evans, G.M.	Droplet impact dynamics on a spherical particle	Chemical Engineering Science	100	105-119	2013

Gandhi, M.S., Joshi, J.B., Nayak, A.K., Vijayan, P.K.	Reduction in thermal stratification in two phase natural convection in rectangular tanks: CFD simulations and PIV measurements	Chemical Engineering Science	100	300-325	2013
Gandhi, M.S., Joshi, J.B., Vijayan, P.K.	Study of two phase thermal stratification in cylindrical vessels: CFD simulations and PIV measurements	Chemical Engineering Science	98	125-151	2013
Dahikar, S.K., Ganguli, A.A., Gandhi, M.S., Joshi, J.B., Vijayan, P.K.	Heat transfer and flow pattern in co-current downward steam condensation in vertical pipes-I: CFD simulation and experimental measurements	Canadian Journal of Chemical Engineering	91	959-973	2013
Ganguli, A.A., Dahikar, S.K., Gandhi, M.S., Joshi, J.B., Vijayan, P.K.	Heat transfer and flow pattern in co-current downward steam condensation in vertical pipes-II: Comparison with published work	Canadian Journal of Chemical Engineering	91	974-991	2013
Dhotre, M.T., Deen, N.G., Niceno, B., Khan, Z., Joshi, J.B.	Large eddy simulation for dispersed bubbly flows: A review	International Journal of Chemical Engineering	-	343276	2013
Reddy, R.K., Sathe, M.J., Joshi, J.B., Nandakumar, K., Evans, G.M.	Recent developments in experimental (PIV) and numerical (DNS) investigation of solid-liquid fluidized beds	Chemical Engineering Science	92	1-12	2013
Gudekar, A.S., Jadhav, A.S., Panse, S.V., Joshi, J.B., Pandit, A.B.	Cost effective design of compound parabolic collector for steam generation	Solar Energy	90	43-50	2013
Dasgupta, K., Joshi, J.B., Paul, B., Sen, D., Banerjee, S.	Growth of carbon octopus-like structures from carbon black in a fluidized bed	Materials Express	3	51-60	2013
Jadhav, A.S., Gudekar, A.S., Patil, R.G., Panse, S.V., Joshi, J.B.	Performance analysis of a novel and cost effective CPC system	Energy Conversion and Management	66	56-65	2013
Patra, J., Pandey, N.K., Muduli, U.K., Natarajan, R., Joshi, J.B.	Hydrodynamic study of flow in the rotor region of annular centrifugal contactors using cfd simulation	Chemical Engineering Communications	200	471-493	2013
Kadam, M.M., Sravani, M.B., Gaikar, V.G., Jha, N.	Synthesis and fabrication of graphene oxide thin film	AIP Conference Proceedings	1538	249-252	2013
Lanke, S.R., Bhanage, B.M.	Copper bis(2,2,6,6-tetramethyl-3,5-heptanedionate)-catalyzed coupling of sodium azide with aryl iodides/boronic acids to aryl azides or aryl amines	Document Synthetic Communications	44	399-407	399-407

Lanke, S.R., Bhanage, B.M.	Nickel-catalyzed three-component coupling reaction of terminal alkynes, dihalomethane and amines to propargylamines	Applied Organometallic Chemistry	27	729-733	2013
Patil, A.B., Bhanage, B.M.	Solar energy assisted synthesis of palladium nanoplates and its application in 2-phenoxy-1,1′-biphenyls and N,N-dimethyl-[1,1′-biphenyl] derivatives synthesis	Journal of Molecular Catalysis A: Chemical	379	30-37	2013
Lanke, S.R., Bhanage, B.M.	Amberlyst-15©: An efficient heterogeneous reusable catalyst for selective anti-Markovnikov addition of thiols to alkenes/alkynes and for thiolysis of epoxides	Catalysis Communications	41	29-33	2013
Patil, A.B., Bhanage, B.M.	Solar energy assisted starch-stabilized palladium nanoparticles and their application in C-C coupling reactions	Journal of Nanoscience and Nanotechnology	13	5061-5068	2013
Patil, A.B., Bhanage, B.M.	Novel and green approach for the nanocrystalline magnesium oxide synthesis and its catalytic performance in Claisen-Schmidt condensation	Catalysis Communications	36	79-83	2013
Doke, S.M., Yadav, G.D.	Process efficacy and novelty of titania membrane prepared by polymeric sol-gel method in removal of chromium(VI) by surfactant enhanced microfiltration	Chemical Engineering Journal	255	483-491	2014
Shinde, S.D., Yadav, G.D.	Process intensification of immobilized lipase catalysis by microwave irradiation in the synthesis of 4-chloro-2-methylphenoxyacetic acid (MCPA) esters	Biochemical Engineering Journal	90	96-102	2014
Yadav, G.D., Yadav, A.R.	Atom economical Michael addition of indole with methyl vinyl ketone over novel solid acid catalyst sulfated zirconia on silica tubes	Microporous and Mesoporous Materials	195	180-190	2014
Gadipelly, C., Pérez-González, A., Yadav, G.D., Rathod, V.K., Marathe, K.V.	Pharmaceutical industry wastewater: Review of the technologies for water treatment and reuse	Industrial and Engineering Chemistry Research	53	11571-11592	2014

	Microwave irradiated immobilized lipase catalyzed synthesis of alkyl benzoate esters by transesterification: Mechanism and kinetic modeling	Industrial and Engineering Chemistry Research	53	8706-8713	2014
Pawar, S.V., Yadav, G.D.	Enantioselective enzymatic hydrolysis of rac- mandelonitrile to r -mandelamide by nitrile hydratase immobilized on poly(vinyl alcohol)/chitosan-glutaraldehyde support	Industrial and Engineering Chemistry Research	53	7986-7991	2014
Yadav, G.D., Katole, S.O., Dalai, A.K.	Synthesis of long alkyl chain ethers through etherification of ethylene glycol with 1-octene using heteropolyacid supported on K-10 clay	Applied Catalysis A: General	477	18-25	2014
Yadav, G.D., Yadav, A.R.	Synthesis of ethyl levulinate as fuel additives using heterogeneous solid superacidic catalysts: Efficacy and kinetic modeling	Chemical Engineering Journal	243	556-563	2014
Yadav, G.D., Sharma, R.V.	Biomass derived chemicals: Environmentally benign process for oxidation of 5-hydroxymethylfurfural to 2,5-diformylfuran by using nano-fibrous Ag-OMS-2-catalyst	Applied Catalysis B: Environ-mental	147	293-301	2014
Yadav, G.D., Tekale, D.P.	Selective mono-isopropylation of 1,3-propanediol with isopropyl alcohol using heteropoly acid supported on K-10 clay catalyst	Catalysis Today	Article in press	Article in press	2014
Pawar, S.V., Yadav, G.D.	PVA/chitosan-glutaraldehyde cross-linked nitrile hydratase as reusable biocatalyst for conversion of nitriles to amides	Journal of Molecular Catalysis B: Enzymatic	101	115-121	2014
Yadav, G.D., Sharma, R.V.	Synthesis, characterization and applications of highly active and robust sulfated Fe-TiO2 catalyst (ICT-3) with superior redox and acidic properties	Journal of Catalysis	311	121-128	2014
Yadav, G.D., Chandan, P.A.	A green process for glycerol valorization to glycerol carbonate over heterogeneous hydrotalcite catalyst	Catalysis Today	Article in press	Article in press	2014
Devendran, S., Yadav, G.D.	Microwave assisted enzymatic kinetic resolution of (±)-1-phenyl-2- propyn-1-ol in nonaqueous media	BioMed Research International	2014	482678	2014

Devendran, S., Yadav, G.D.	Lipase-catalyzed kinetic resolution of (±)-1-(2-furyl) ethanol in nonaqueous media	Chirality	26	286-292	2014
Yadav, G.D., Yadav, A.R.	Selective green synthesis of 1,5-benzodiazepine over modified heteropolyacid as nanocatalyst: Kinetics and mechanism	Industrial and Engineering Chemistry Research	52	17812-17820	2013
Yadav, G.D., Katole, S.O.	Selective acetalization of ethylene glycol with methyl 2-napthyl ketone over solid acids: Efficacy of acidic clay supported Cs2.5H0.5PW12O40	Catalysis Today	Article in press	Article in press	2013
Yadav, G.D., Yadav, A.R.	Selective liquid phase oxidation of secondary alcohols into ketones by tert-butyl hydroperoxide on nano-fibrous Ag-OMS-2 catalyst	Journal of Molecular Catalysis A: Chemical	380	70-77	2013
Yadav, G.D., Surve, P.S.	Solventless green synthesis of 4-O-aryloxy carbonates from aryl/alkyl-oxy propanediols and dimethyl carbonate over nano-crystalline alkali promoted alkaline earth metal oxides	Catalysis Science and Technology	3	2668-2676	2013
Yadav, G.D., Surve, P.S.	Regioselective ring opening reaction of epichlorohydrin with acetic acid to 3-chloro-2-hydroxypropyl acetate over cesium modified heteropolyacid on clay support	Applied Catalysis A: General	468	112-119	2013
Yadav, G.D., Kadam, A.A.	Selective engineering using Mg-Al calcined hydrotalcite and microwave irradiation in mono-transesterification of diethyl malonate with cyclohexanol	Chemical Engineering Journal	230	547-557	2013
Yadav, G.D., Yadav, A.R.	Selectivity engineered friedel-crafts acylation of guaiacol with vinyl acetate to acetovanillone over cesium-modified heteropolyacid supported on K-10 Clay	Industrial and Engineering Chemistry Research	52	10627-10636	2013
Yadav, G.D., Sharma, R.V., Katole, S.O.	Selective dehydration of glycerol to acrolein: Development of efficient and robust solid acid catalyst MUICaT-5	Industrial and Engineering Chemistry Research	52	10133-10144	2013
Dalai, A.K., Yadav, G.D., Abatzoglou, N.	Catalytic processes for clean energy, waste minimization and green chemicals	Catalysis Today	Catalysis Today	1-2	2013

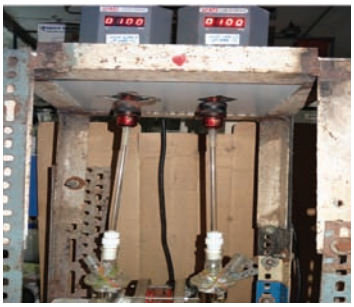
Yadav, G.D., Fernandes, G.P.	Selective synthesis of natural benzaldehyde by hydrolysis of cinnamaldehyde using novel hydrotalcite catalyst	Catalysis Today	207	162-169	2013
Yadav, G.D., Salunke, J.Y.	Selectivity engineering of solid base catalyzed O-methylation of 2-naphthol with dimethyl carbonate to 2-methoxynaphthalene	Catalysis Today	207	180-190	2013
Yadav, G.D., Gawade, B.A.	Novelties of combustion synthesized and functionalized solid superacid catalysts in selective isomerization of styrene oxide to 2-phenyl acetaldehyde	Catalysis Today	207	145-152	2013
Yadav, G.D., Surve, P.S.	Atom economical green synthesis of chloromethyl-1,3-dioxolanes from epichlorohydrin using supported heteropolyacids	Industrial and Engineering Chemistry Research	52	6129-6137	2013
Shah, M.R., Anantharaj, R., Banerjee, T., Yadav, G.D.	Quaternary (liquid + liquid) equilibria for systems of imidazolium based ionic liquid + thiophene + pyridine + cyclohexane at 298.15 K: Experiments and quantum chemical predictions	Journal of Chemical Thermody-namics	62	142-150	2013
Yadav, G.D., Mewada, R.K.	Novelties of azobenzene synthesis via selective hydrogenation of nitrobenzene over nano-fibrous Ag-OMS-2 - Mechanism and kinetics	Chemical Engineering Journal	221	500-511	2013
Yadav, G.D., Lawate, Y.S.	Hydrogenation of styrene oxide to 2-phenyl ethanol over polyurea microencapsulated mono- and bimetallic nanocatalysts: Activity, selectivity, and kinetic modeling	Industrial and Engineering Chemistry Research	52	4027-4039	2013
Manyar, H.G., Yang, B., Daly, H., Hu, P., Hardacre, C.	Selective Hydrogenation of α,tim-Unsaturated Aldehydes and Ketones using Novel Manganese Oxide and Platinum Supported on Manganese Oxide Octahedral Molecular Sieves as Catalysts	Chem CatChem	5	4027-4039	2013
Shah, M.R., Yadav, G.D.	Prediction of sorption in polymers using quantum chemical calculations: Application to polymer membranes	Journal of Membrane Science	427	108-117	2013

PATENT (01):

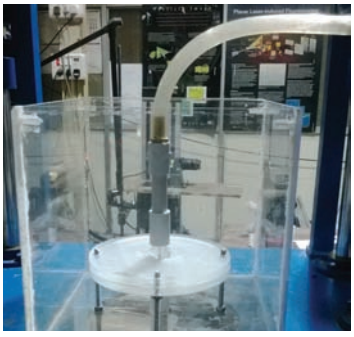
An improved method for benzimidazole synthesis from 2-haloaniline, dihalomethane and sodium azide in presence of copper complex catalyst, Satish R. Lanke, Bhalchandra M. Bhanage Indian Patent Appl., 2450/MUM/2013, 2013.

EXPERIMENTAL SET-UP

Carbon Nanotube synthesis, CVD reactor.
Flat sheet supported liquid membrane



Hollow fiber supported liquid membrane



Molten salt flow loop

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME

PROFESSOR V. G. GAIKAR
Institute Coordinator, Technical Education Improvement Quality Program (TEQIP-II)
Coordinator, Innovation Networking of Institutes in Maharashtra (TEQIP-II)

The Institute of Chemical Technology (ICT), a Deemed University under Section 3 of UGC Act of 1956, was a Lead Institution under the Technical Education Quality Improvement Program (TEQIP) Phase –I of the Government of India. The purpose of TEQIP is to enhance capacities of institutions to become dynamic, quality conscious, efficient and responsive to rapid economic and technological developments occurring at both, and the national and international levels. ICT made impressive progress under Phase –I.

In the second phase of TEQIP, ICT has been selected for funding by Ministry of Human Resources & Development (MHRD), GoI, for the period July 2012-Dec 2014 with a total outlay of 12.5 Cr of which Rs. 3.75 is for equipments, 1.25 Cr for learning resources and rest is for different academic and human resource development activities. A Centre of Excellence in Process Intensification in Process Industries also has been sanctioned by MHRD, under the TEQIP program with total grant of Rs. 5.0 Cr. In addition, ICT has built, INNOVATION NETWORKING with 4 other engineering Institutes i.e. VJTI, DBATU, SPCE and SGGSIET in the state of Maharashtra for Open Innovation with additional grant of Rs. 1.5Cr.

Under TEQIP, the ICT has shown tremendous progress in research output and infrastructure improvement. In this phase of TEQIP, ICT is treated as the peer mentor for its excellent interaction with industry. ICT is probably the only Institute in the program which has signed the highest number of MoUs with industries and research organizations. It has already surpassed many targets that were proposed in TEQIP and, therefore, reassigned itself for still higher goals till completion of the program.

With the TEQIP Phase –II, and as a Deemed University, ICT has embarked on an ambitious program to maintain excellence in Research and Innovation and expand in new directions to take advantage of the opportunities available in industrial and technological environments.

The Institute is geared up to take challenges of dynamic conditions of industry, varying demands of new emerging areas of research and to convert ideas into workable solutions for problems faced by the Nation. Under the TEQIP program, ICT strives to improve the quality of Masters' and Ph.D.s in Chemical Engineering, Chemical Technology, and Allied Sciences keeping a fine balance between the Fundamental Sciences and Technological Developments for applications in Industry and for the benefit of society and the Nation in general.

ICT's strategic plan has a main thrust on Human Resource Development program 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. The annual production of post-graduates has been increased by 25% by the project alone.

ICT has taken systematic curriculum development as a model for the post-graduate education along with Faculty and staff training in both technical and non-technical areas, refurbishing the postgraduate laboratories and equipments and library resources.

ICT has increased significantly joint research activities with other organizations, and Industry establishing research facilities, joint supervision of doctoral students and sharing facilities, collaborative publications, patents and consultancies as well developing capacity to conduct research in frontier areas. ICT strives to establish partnerships with selected institutions for collaborative research, technical support and sharing of facilities, increased joint outputs and an increased capacity for research.

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(LATE) PROFESSOR M U DESHPANDE

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Chairman

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BoM Member

DR. VIJAY HABBU
UAA representative

PROFESSOR P. R. VAVIA
BoM Member

PROFESSOR K.S. LADDHA
BoM Member

SHRI LALIT CHHADA
Member

PROFESSOR M. D. TELI
BoM Member

SMT. K. V. MARATHE
BoM Member

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MR. SACHIN KADAM
MISS. POOJA DEMBLANI
MR. SACHIN WADIKAR

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Professor S. S. Lele, Registrar
Professor M. D. Teli
Professor K. G. Akamanchi
Professor P. R. Vavia, dean (Ap)
Professor K. S. Laddha, Dean (ICD)
Professor V. G. Gaikar, TEQIP-Co-ordinator
Shri. P. V. Joshi, OSD-cum-A. R. (F & A)

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Professor P. R. Vavia, Dean, Academic Programmes (AP)
Professor A. B. Pandit, Dean, (RCRM)
Professor S. S. Lele
Professor S. S. Bhagwat, Co-ordinator for Centre of Excellence

INDUSTRY INSTITUTE INTERACTION CELL

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Dr. S. T. Mhaske
Professor A. M. Lali
Professor P. V. Devarajan
Professor P. M. Bhate

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Dr. S. Kasthurirangan
Shri A. S. Lokhande
Shri. R. B. Sawant, A. R. (Admn)
Shri. A. M. Sathye, A. R. (Acad)

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HoD or TEQIP Co-ordinator of each Department (12)
A. R. (Acad.)

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Professor R.S. Singhal
Professor R. V. Jayaram
TEQIP Co-ordinators of each Department
General Secretary, TA
Shri. Vishnu Sawant
Shri. R. B. Sawant, (Admn)

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Professor N. Sekar
Professor R. V. Adivarekar
Shri. P. V. Joshi, OSD-cum-A. R. (F & A)

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Shri. P. V. Joshi, OSD-cum-A. R. (F & A)
Shri R. B. Sawant, A. R. (Admn.)
Professor R. N. Jagtap
Professor A. B. Pandit
Professor P. V. Devarajan

SUMMARY SHEET FOR REVIEW

Name of Institute: Institute of Chemical Technology, Mumbai
Sub-component: 1.2
Category of Institute: State University

	Strategy/ Activities	Indicators	Institutional Baseline (Pre-TEQIP) in 2010-11	Proposed Target Years		Status due to input of TEQIP as on 30th June 2014	Outcome against Goals (TEQIP)	Remarks
			Physical (No.*/%)	Institutional (No.*/%)	TEQIP (No.*/%)	Physical (No. */ %ge)		
A.1	Student	New admissions	UG: 264 PG:155 Ph.D:153	UG: 248 PG:125 Ph.D:150	PG:100	UG: 236 PG: 241 Ph.D: 173 [Sci: 123 Tech: 50]	 PG: 107.11% Ph.D. : 108.13%	
A.1.1	Improvement in Students Knowledge and Skills - Diagnostic test - Remedial teaching - E-enabled l earning - Research projects at UG levels - Assistantships	Percentage of female students against total engineering students in all years • Undergraduates • Postgraduates	 34.31% 37.93%	 35% 35%		 36.44% 36.93%	100%	
A.1.2		Students transition rate (percentage) from first year to second year of UG programs PG Programs	 75.6% 98.3%	 85% 100%		 82.78% 96%		
A.1.3		Average scores (%/ CGPA) at degree completion • Undergraduates • Postgraduates	 N/A			 UG: 7.73 PG: 7.89		7.5 is distinction
A.1.4		Total No. of students enrolled in	251	250	110	364	101.11%	
A.1.5		No. of students registered in PhD programs in engineering + (Sci.)	241 + (188)	400 (total)	12	323 + (271)	134.02%	New Ph. D admissions are on)
A.1.6		No. of Masters students enrolled with TEQIP teaching assistantship	0	0	110	2012-13: 49 2013-14: 113 2014-15: 64	110 %	
A.1.7		No. of PhD students enrolled with TEQIP research assistantship	0	0	12	2012-13: 01 2013-14: 11 2014-15: 11	120%	
A.1.8		No. of Research projects taken by UG students	132	150	100	215	86%	

- For 143 BTech students final year research project is compulsory. In addition 157 students of Chem Engg, Textile, Oils & polymer departments worked as summer trainees in May & June 2013 & 2014.

	Strategy/ Activities	Indicators	Institutional Baseline (Pre-TEQIP) in 2010-11	Proposed Target Years		Status due to input of TEQIP as on 30th June 2014		Outcome against Goals (TEQIP)	Remarks
			Physical (No.*/%)	Institutional (No.*/%)	TEQIP (No.*/%)	Physical (No. */ %)	Financial (Rs. Lakh)		
A.2	Faculty								
A.2.1	Capacity Development of Faculty - Recruitment of faculty - Subject domain training - Qualification upgradation - Pedagogical Training - E-enabled training - Management development training - Continuing Education Programme	Percentage of faculty positions filled-in (as per AICTE/MHRD required Teacher-Student ratio): • Regular • Contract	 63.80 66.35	 80 100		 64.22% 61.7%			Advertisement: (in Feb 2014) Professor: 19 Associate Professor: 14 Assistant Professor:13
A.2.2		Percentage of Faculty with BTech enrolled for MTech against total BTech faculty	NA	NA		NA		NA	All faculty members have either MTech or Ph.D. Qualification
A.2.3		Percentage of Faculty with MTech enrolled for PhD in engineering against total MTech faculty	67%	90%		95%		75 %	4 of the 5 faculty members, having MTech qualifications, are registered for Ph.D. in IIT, TIFR and VJTI.
A.2.4		Percentage of regular faculty with Masters degree in engineering against total engineering faculty	100	100		100 %		100%	
A.2.5		Percentage of regular faculty with PhD degree in engineering against total engineering faculty	86.7	90		92.7 %		100 %	92.7% of faculty members are Ph.D. qualified and active researchers
A.2.6		Number of faculty members attended training in subject domain	0	05		56		68.29%	
A.2.7		Number of faculty members attended management development training	20	20		68		82.93%	
A.2.8		Number of faculty members attended pedagogical training	0	0		56		68.29%	
A.3	Institutional Reforms Set of reforms								

A.3.1	- Academic reforms - Non-academic reforms - Enhance interaction with industry	Percentage of NBA accredited UG & PG programs including Applied- For cases, against total eligible programs	UG – 9/9 PG(E&T) – 11/11	100%		NBA Courses Accredited: UG: 00 PG: 03(19%) Courses Applied for NBA Accreditation: UG: 07 PG:08 (applied) Accredited: 03		20%	
A.3.2		Autonomous institution status concurred by UGC (Yes/No/Applied For)	Deemed University			Deemed University	NA	yes	Deemed University status accorded by MHRD
A.3.3		No. of academic programs i.e. MTech/PhD etc. with industry	08	10		117			Based on sponsored projects with Industry
A.3.4		No. of short term programs with industry No of consultations with industry	0 170	04		04 126		100 %	
A.3.5		Academic networking with other institutions (No.)	08		10	36		360 %	
A.3.6		ICT (Information communication Technology) enabled learning (No. of programs/ courses)	0		0	0			ICT is used in courses as required
A.3.7		Curricula revised/ restructured (No.)	ALL	ALL		ALL in 2009		100% in 2009	All courses were restructured in 2009-10: Curricular revision is regular
A.3.8		Total IRG	532 L	700 L			5031L	7.19	
A.3.9		Percentage revenue from externally funded R&D projects and consultancies in total revenue	20.48%			73.12%	4215L	85.28%	
A.3.10		IRG as percentage of annual recurring expenditure	47.3%	25%		66.78%	2365	212%	

B.0	**Enhance Access to Knowledge Resources**								
B.1	Improvement in Teaching, Training and Learning facilities - New PG programmes - Updation of learning resources	Laboratories: New laboratory (Nos.) for new PG programs New laboratory (Nos.) for existing PG programs Existing laboratory (Nos.) modernized	0 0 22	0 2 2	0 0 11	0 0 All	0 0 313	0 0 9.0%	
B.2	- Equipment details - Modernization of Labs and classrooms	Library • Books (print) • e-books (Nos.) • Journals (print) • e-journals (Nos.) • Course specific softwares (Nos.)	76053 0 128 3703 02	76123 131 3750 07	Back volumes	0 0 0 112 0	0 0 0 71L 0	0 0 0	Subscription for e-journals has been ordered (71L)
B.3		Membership of online No. of journals No. of consortium	 2 0	 2 1	 0 0	 112 1	 71L 0	 0 1	
B.4		No. of digitally/ virtually accessible courses/subjects	0	1	0	1	0	1	Through NPTEL
C.0	**Enhancement of Research & Development Activities**								
C.1	Promoting R&D culture in the Institution - Modern R&D equipment - Conferences / Workshops organized - Conferences / Workshops attended	No. of research publications • National journals • International journals	 56 232	 50 200	 50 50	 23 319		 46 127.6	
C.2		No. of Books published(book Chapters)	(18)	10		06 (Book Chapters-12)		60%	
C.3		No. of Patents obtained/ filed (cumulative)	74	50		154		160%	
D.0	**Improve Employability of Graduates**								
D.1	Improving competencies of graduates - Industrial collaboration - Finishing School - Industrial training	Campus placement percentage: • Undergraduates • Postgraduates	 64 65	 100 65		 78.38% (2012-13) 56.13% (2013-14) 51.9% (2012-13) 35.82% (2013-14)			30.8% UG & 4.5% PG opted for higher studies
D.2		Average annual salary (Rs. Lakh) of: • Undergraduates • Postgraduates	4.0 4.0	6.0 6.0	6.0 6.0		5.04 5.60		
D.3		Share of UG students attended industrial internship (percentage)	100%	100%	100%	100%	2.16	100%	

DEPARTMENTWISE PROGESS REVIEW IN TEQIP

Sr. No		Chemical Engineering	Dyes(& Perfume-Flavor Technology)	Fibres & Textile	Food Engineering	Oils	Pharmaceutical Technology	Polymers and Surface coating Technology	Chemistry (Green Technology)	Physics	Mathematics	General Engineering	DBT-ICT	Total
	Research & Development													
1	M.Tech (TA s) with TEQIP funds	4	5	8	8	4	5	8	10	NA	NA	4	4	60
	Ph.D. (RA s) with TEQIP Research Assistantship	1	4	1	1	0	0	0	1	1	1	1	0	11
	Number of Research publications in refereed journals													
	National Journals 2012 2013	 2 6	 1 1	 6 3	 - 1	 - 0	 9 11	 - 1	 1 -	 1 -	 - -	 - -	 - -	 20 23
	International Journals 2012 2013	 99 107	 37 18	 12 21	 46 36	 04 05	 42 70	 25 15	 34 49	 05 18	 03 01	 01 -	 08 -	 316 340
	(b) Patents applications filed in 2012-13 2013-14	 1 4	 3 3	 2 2	 1 1	 - 0	 2 0	 - 0	 - 0	 - 2	 - 0	 - -	 13 7	 22 18
	(c) Patents obtained in 2012-13 2013-14	 5 3	 - 0	 1 0	 - 0	 0 -	 1 0	 - 8	 - -	 - 1	 - 0	 - -	 1 0	 08 12
4	Student credentials: Campus placement													
	UG students placed	32	0	15	9	7	5	11	NA	NA	NA	NA	NA	82
	UGs going for higher studies	44	0	13	05	02	01	12	NA	NA	NA	NA	NA	74
	UG students still to be placed	09	16	02	04	05	11	05	NA	NA	NA	NA	NA	53
	UG Average salary (Rs. In Lakhs)	6.81	0	3.21	3.33	3.7	5.1	4.4	NA	NA	NA	NA	NA	5.04
	UG Maximum Salary(Industry)	10.5	0	4	5.60	4.5	5.1	9	NA	NA	NA	NA	NA	
	Industry offering highest salary	UOP	-	Arvind Mills & Pidilite	Nestle	Godrej	Hospira	Exxon Mobil	-	-	-	-	-	-
	PG students Placed(2013-14)	15	0	11	06	02	04	03	-	-	-	-	12	48
	PG students still to be placed	06	0	05	08	07	30	16	-	-	-	-	17	91
	PG going for higher studies	05	0	--	04	-	-	0	-	-	-	-	0	14
	PG Average salary (Rs. In Lakhs)	4.81	0	3.75	7.2	4.05	4.56	7	-	-			6.81	5.57
	Maximum Salary	8.0	0	4.5	8.65	4.5	6	7	-	-			8.65	
	Industry offering highest salary	UOP	-	Antham Cell	Agilent	Alfa Laval	Evalue Serve	JBF RAK	-	-	-	-	Agilent	-

	Number of Finishing School Programs organized by Department	Finishing Schools organized for all departments: 1. Vertois Training and Consultancy Pvt. Ltd.(2 days of workshop [24-25 August, 2013]) 2. M/s Kamshaft Innovations Pvt. Ltd. (6 days of workshop[17-18 August 2013, 24-25 August 2013, 31st August 2013- 01 September 2013]) 3. Roy Edingston -Charles and associates.(10 days of workshop[31st August 2013 – 01st Sept 2013, 07-08 Sept 2013, 14-15 Sept 2013, 21-22 Sept 2013, 12-13 Oct 2013])												
	Number of UG/ PG students attended Finishing School	From: 1. Kamshaft – 67 Students attended finishing schools 2. Vertois – 98 Students attended finishing schools 3. Roy Eddington—63 Students attended finishing schools												
	(2013-14) UG Passing %,													
	II,	89.61	77.78	56.00	82.35	94.12	84.21	73.53	NA	NA	NA	NA	NA	
	IV	93.50	85.70	82.90	100	88.20	93	97.20						
	VI	93.70	96	93.50	100	94.70	97.35	100						
	VIII	93	93.80	96.80	94.40	100	100	96.90						
	(2013-14) UG Passing %	92.45	88.32	73.08	94.12	94.12	94.74	94.12	NA	NA	NA	NA	NA	
	(2013-14) PG Passing % II	96.88	NA	100	91.43	100	80	93.75	100			100	100	
	Number of Programs arranged for Weak Students	1	-	-	-	-	2	-	2	NA	2	-	-	4
	Number of weak students attended the programs	24	18	18	15	14	15	25	-	-	11	-	-	140
	Number of research Students attending conferences with TEQIP Support	7	21	22	39	12	65	27	31	6	NA	2	13	249
	Student survey taken(if yes, please send summary)	513	67	133	99	87	266	111	170	15	21	07		1524
5	Industry Institute Interaction													
	Number of Students attended Internship in Industry													
	UG students	ALL	ALL	ALL	ALL	ALL	ALL	ALL	-	-	-	-	NA	
	PG students													NA
	Number of students who visited industries	40	0	105	0	0	64	0	39	0	0	9	68	283
	Number of industries visited by research students	4	-	10	2	1	1	2	1	NA	NA	1	1	23
	No of new Consultancies (2013-14)	35	2	4	4	3	14	36	1	NA	NA	0	0	100
	Total revenue generated as consultation		110.5 L											
6	Number of collaborative research programmes initiated with Industry	32	1	3	1	2	11	3	2	-	-	-	-	55

	Number of MoUs signed with Industries(Total)													95
	Revenue generated by Industry Research Projects(in Lakhs)													1253
	Industry Endowment/ contract positions created in Institute	13	0	0	1	2	4	1	-					21
	Number of Continuing Education Program(CEPs) arranged for industry personnel	06	01	03	05	-	-	02	02	-	01	02	03	28
	Faculty and Staff development													
10	Number of faculty members attended training in teaching/research subject with TEQIP Support	6	3	4	4	2	7	1	4	2	1	7	1	42
	Number of faculty members attended conferences with TEQIP Support	6	1	3	5	1	_	2	2	2	1	_	3	28
	Number of Faculty members visited Industries	2	_	_	_	_	_	1	_	1	_	_	_	04
11	Number of faculty members attended pedagogy training for effective teaching	15	4	_	5	1	10	_	12	1	_	3	4	56
12	Number of technical/staff members attended training in technical areas	4	1	1	1	1	3	1	1	0	0	5		18
13	Number of administrative staff members attended training in functional areas	1	1	1	1	1	3	1	1	0	0	6	-	16
14	Number of staff Members Attended 'English Speaking Course'	12	02	06	05	08	06	11	02	06	02	-	-	160
	Numebr of Staff attended 'Stress Management' workshop													93
	Management Capacity Enhancement													
15	Number of faculty members attended Management capacity enhancement program	_	_	1	3	_	_	_	_	1	_	2	_	09
16	Total Number of BoG Meetings from 2013.	09 BoM-TEQIP Committee meetings on: (04/07/2013,08/08/2013,06/09/2013,10/10/2013,17/ 18/09/2014, 17/10/2014												09

DATA AUDITOR REPORT

No	Particulars	Institutional Source of Data	2010-2011	2011-2012	2012-2013	2013-2014	Source
1	Information in respect to Bachelors programs in engineering/technology						
	(a) Number of UG programs	9	9	9	9	9	Institutional Handbook
	(b) Total number of UG students (new enrollment)	233	264	241	253	236	MIS
	(c) Total number of women students in UG programs	90	96	84	91	86	MIS
	(d) Total number of SC students in UG programs	17	30	18	26	15	MIS
	(e) Total number of ST students in UG programs	3	3	2	4	0	MIS
	(f) Total number of OBC students in UG programs	31	35	43	39	34	MIS
	(g) Percentage of final year UG students placed through campus interviews	40%	40%	41%	78%	53%	Placement Office Data
	Percentage of final year UG Students opted for higher studies			29%	37%	34%	Placement Office Data
	(h) Percentage of final year UG students that passed out with 75% or more aggregate marks	28%	28%	37%	33%	38%	Exam + MIS
	(i) Percentage of all 1st year students [as at 1(b)] that passed all courses fully and successfully got admitted to 2nd year academic year	76%	76%	79%	79%	83%	Exam+MIS
	(j) Percentage of 1st year women students [as at 1(c)] that passed all courses fully and successfully got admitted to 2nd year	43%	73%	81%	79%	87%	Exam+MIS
	(k) Percentage of 1st year SC students [as at 1(d)] that passed all courses fully and successfully got admitted to 2nd year	30%	30%	50%	69%	53%	Exam+MIS
	(l) Percentage of 1st year ST students [as at 1(e)] that passed all courses fully and successfully got admitted to 2nd year	0%	0%	100%	25%	NA	Exam+MIS
	(m) Percentage of 1st year OBC students [as at 1(f)] that passed all courses fully and successfully got admitted to 2nd year academic year	47%	52%	72%	82%	62%	Exam+MIS
2	Information in respect to Masters programs in engineering/technology						
	(a) Number of full-time Masters programs	11	11	15	18	18	Handbook
	(b) Number of part-time and sandwich (Joint) Masters programs	0	0	0	0	0	Handbook
	(c) Total number of students enrolled for all Masters programs	171	171	160	185	187	MIS
	(d) Number of faculty in-house enrolled for Masters programs	0	0	0	0	0	MIS
	(e) Number of students enrolled for all Masters programs with scholarship	171	171	160	185	187	Academic + Accounts

	(f) Number of students enrolled for all Masters programs during academic year with TEQIP assistantship	0	0	0	49	109	
	(g) Total number of women students in all Masters programs during academic year	69	70	53	61	57	MIS
	(h) Total number of SC students in all Masters programs during academic year	23	24	20	26	23	MIS
	(i) Total number of ST students in all Masters programs during academic year	0	0	0	0	2	MIS
	(j) Total number of OBC students in all Masters programs during academic year	30	29	35	31	32	MIS
	(k) Percentage of final year Masters students during academic year placed through campus interviews	15%	15	56%	46%	26%	Placement Office
	Percentage of final year PG Students opted for higher studies			16%	59%	16%	Placement Office
	(l) Percentage of final year Masters students during that passed out with 75% or more aggregate marks	40%	50	45%	73%	31%	Exam+MIS
3	Information in respect to Doctoral programs						
	(a) Number of Doctoral candidates on roll (NEW ENROLLMENT)	455	131	165	190	173	MIS
	(b) Number of in-house faculty enrolled for Doctoral programs during academic year	5	5	6	6	6	MIS
	(c) Number of students enrolled for Doctoral programs during academic year with scholarship	101	131	164	153	172	MIS
	Total Number of students enrolled for Doctoral programs during academic year with scholarship		473	526	579	620	
	(d) Number of students enrolled for Doctoral programs during academic year with TEQIP assistantship	0	0	0	1	12	
4	Information in respect to Faculty						
	(a) Total number of regular full-time faculty excluding adjunct and emeritus faculty during academic year	69	69	76	76	82	Admin
	(b) Total number of regular full-time faculty in engineering disciplines excluding adjunct and emeritus faculty during academic year	55	55	61	61	62	Admin
	(c) Number of regular full-time faculty in engineering disciplines with Masters degree as their highest qualification excluding adjunct and emeritus faculty during academic year	7	7	6	6	6	Admin
	(d) Number of regular full-time faculty in engineering disciplines with Doctoral degree as their highest qualification excluding adjunct and emeritus faculty during academic year	48	48	56	56	57	Admin
	(e) Number of regular full-time faculty in engineering disciplines with Bachelors degree as their highest qualification faculty academic year	0	0	0	0	0	Admin

	(f) Number of faculty with Bachelors degree which are enrolled in-house for Masters programs in parent institution during academic year (i) Engineering teachers: (ii) Applied Science teachers: (iii) Other teachers:	0	0	0	0	0	Admin
	(g) Number of faculty with Bachelors degree which are enrolled in-house for Masters programs at other institutions during academic year : (i) Engineering teachers: (ii) Applied Science teachers: (iii) Other teachers:	0	0	0	0	0	Admin
	(h) Number of faculty with Masters degree which are enrolled in-house for PhD programs in parent institution during academic year 2010-11: (i) Engineering teachers: (ii) Applied Science teachers: (iii) Other teachers:	1	0	(I) 1 (II) 1	(I) 5 (II) 1	(I)3 (II) 1	Admin
	(i) Number of faculty with Masters degree which are enrolled in-house for PhD programs at other institutions during academic year : (i) Engineering teachers: (ii) Applied Science teachers: (iii) Other teachers:	5		(I)3	0	0	Admin
	(j) Number of faculty that have attended a professional training program of 5 or more days duration during academic year	0				3	Admin
	(k) Number of all faculty (irrespective of specialization) that have attended the Basic Module of pedagogy training during academic year	0	0	0	0	56	Admin
	(l) Number of all faculty (irrespective of specialization) that have attended both the Basic and Advanced Modules of pedagogy training during academic year	0	0	0	0	0	Admin
	(m) Number of faculty appraised by students during academic year	20	3	88	113	94	MIS
5	Information in respect to Accreditation of Programs						
	(a) Number of UG programs accredited	9	9	9	9	0	Handbook
	(b) Number of UG programs for which accreditation applied for	0	0	0	0	9	Handbook
	(c) Number of PG programs accredited	11	11	2	2	3	Handbook
	(d) Number of PG programs for which accreditation applied for	0	0	0	8	5(under appeal)	Handbook
6	Information in respect to research and patents						
	(a) Number of research publications in Indian refereed journals during the academic year	14		14	14	23	Annual Report + MIS
	(b) Number of research publications in International refereed journals during the academic year	235	217	235	307	340	Annual Report + MIS
	(c) Number of research publications co-authored with faculty/ researchers/ industry experts from outside the institution	42	42	178	178	132	Annual Report + MIS
	(d) Number of patents in engineering related areas obtained during theacademic year	0	0	8	8	12	Annual Report + MIS

	(e) Number of patents in engineering related areas filed during the 2010-11 academic year	13	13	22	22	18	Annual Report + MIS
	(f) Number of sponsored research project completed during the academic year	Ongoing107	107	50	129	146	Accounts + Annual Report
	(g) Number of MOUs signed for collaborative programs with Indian industry and R&D organizations	8	8	12	2	10	Annual Report + MIS
	(h) Number of MOUs signed for collaborative programs with International academic institutions and R&D organizations	12	12	6	20	5	Annual Report + MIS
7	Information in respect to Finances						
	(a) Amount received as Block Grant during during the academic year (Rs. In Lakhs)	0	0	0	0	0	Accounts
	(b) IRG1 from students' tuition fee and other charges during the academic year (Rs. In Lakhs)	923.9	751.9	913.75	818.42	815.77	Accounts
	(c) IRG from externally funded R&D projects and consultancies during theacademic year (Rs. In Lakhs)	120	945.11	578.3	1586.9	4105.28	Accounts
	(d) Total IRG during the academic year (Rs. in Lakhs)		1763.49	1620.91	2462.3	5031.53	Accounts
	(e) Total annual recurring expenditure during the academic year (Rs. In Lakhs)		1549.88	1872.71	2261.96	2364.98	Accounts
	(f) Amount available in Corpus Fund	300	300	400	400	400	Accounts
	(g) Amount available in Faculty Development Fund	75	75	100	100	100	Accounts
	(h) Amount available in Equipment Replacement Fund	75	75	100	100	100	Accounts
	(i) Amount available in Maintenance Fund on	75	75	100	100	100	Accounts
8	With respect to Institutional Governance/ Management						
	(a) Number of BoG meeting held during the academic year (with minutes on the web)	2		3	3	2	Minute Book
	(b) Number of institutional functionaries (Deans, HoDs, senior faculty and senior officials) that have undergone Management Capacity Enhancement training	0	0	0	39	7	Admin

TABLE A:

SUMMARY PERFORMANCE AUDIT EVALUATION NUMBER-1/2/3/4

Name of Performance Auditor : Professor R. Natarajan

Dates of Performance Audit : 28th to 29th July, 2014

Name of Institution with location :

Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai – 400019

Sr.	Area of Performance Audit	Grade	Remarks
1.	Project Implementation	1	Good Systems & processes are in place
2.	Implementation of Institutional Reforms	1	Good
3.	Administrative and Managerial Efficiency Improvement	1	Good
4.	Qualitative Improvements related to Education and Research	1	Good

5.	Institutional Governance	2	Needs attention
6.	Support to Weak UG Students	1	Good

Note:

For Table A, the Summary of Performance Audit Evaluation, is to be filled in by the Performance Auditor from the overall qualitative assessment for the Tables 1 to 6 as given ahead in this format for Performance Audit Report.

PERFORMANCE AUDITORS REPORT

TABLE-1: PROJECT IMPLEMENTATION

Name of Performance Auditor : Professor R. Natarajan
Dates of Performance Audit : 28th to 29th July, 2014
Name of Institution with location:

Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai – 400019

<table>
<tr><th>Sr.</th><th>Aspect</th><th>Assess-ment Grade (1-3)</th><th>Supporting Evidence</th></tr>
<tr><td>1</td><td>Progress in securing Autonomous Institution status from the affiliating University & the UGC within 2 years of joining the Project OR Effectiveness of utilization of academic autonomy possessed/ obtained</td><td>1</td><td>ICT is a State-Funded Deemed University since 12 Sept. 2008 and become functional July 2009; (MHRD Letter: No. F-9-61/2005-U.3 Ministry of Human Resource Development, department of Higher education, U.3(A) Section
Dated 12th September 2008
The institute also received recognition as an ‘Elite Institute’ by the Government of Maharashtra.
(Special Status of Elite Institute and Centre of Excellence in Maharashtra
Institute of Chemical Technoloqv. Mumbai
(Deemed Universitv under UGC Act 1956)
GOVERNMENT OF MAHARASHTRA
Higher & Technical Education Department
Government Resolution No.- ICT- 2A121 (23l12llTE-2
Mantralaya Annex, Mumbai-400 032.
Date – 20 April, 2012</td></tr>
<tr><td>2</td><td>Sufficiency and quality of academic buildings</td><td>1</td><td>Adequate & satisfactory for all academic purposes.
Total Area: 16 Acres.
<table>
<tr><th></th><th>Total Number</th><th>Total Carpet Area (Sq.M)</th></tr>
<tr><td>Classrooms</td><td>24</td><td>1438.10</td></tr>
<tr><td>Drawing Halls</td><td>02</td><td>408</td></tr>
<tr><td></td><td>01</td><td>986</td></tr>
<tr><td></td><td>01</td><td>1400</td></tr>
</table>
Laboratories & workshops/Tutorial Hall under:
<table>
<tr><th>Department</th><th>Total Number</th><th>Total Carpet Area (Sq.M)</th></tr>
<tr><td>Department of Chemical Engineering</td><td>21</td><td>1952.05</td></tr>
<tr><td>Department of Dyestuff Technology</td><td>05</td><td>814.83</td></tr>
<tr><td>Department of Fibre & Textile Processing Technology</td><td>19</td><td>1924.56</td></tr>
</table>
</td></tr>
</table>

Department of Food Engineering & Technology	17	878.18
Department of Oils, Oleo chemical & Surfactants Technology	06	736.71
Department of Pharmaceutical Sciences & Technology	17	1240.35
Department of Polymer Engineering And Surface Coating Technology	11	851.80
Department of Chemistry	09	815.48
Department of Physics	07	736.71
Department of Mathematics	02	
Workshop Halls	05	755.54

3 Progress/achievement in starting new PG programs as evidenced by:

- Securing AICTE approval
- Establishment of laboratories

5 New Masters Programs started in 2009-10.
1. M.Tech in Green Technology
2. M.Tech in Food Biotechnology
3. M.Sc. in Industrial Chemistry
4. M.Sc. in Engineering Mathematics
5. M.Sc. in Textile Chemistry

For a Deemed University AICTE approval is not required to initiate the program.

The University has established additional laboratories in 2013-14
(i) NMR facility- in Dyes Department
(ii) Biotechnology laboratory in Chemical Engineering department
(iii) NMR facility for Pharmaceutical Science & Technology
(iv) DBT-ICT Centre: 5 Labs

- Adequacy of student enrolments

With support from Alumni, the Institute has renovated the Engineering Drawing Hall and K V Auditorium
Number of students for 2011-12 in new courses: 74
Number of students for 2012-13 in new courses: 83
Number of students for 2013-14 in new courses: 80

Course Name	2011-12	2012-13	2013-14
M.Tech in Green Tech.	27	30	30
M.Tech in Food Biotechnology	10	10	14
M.Sc. in Industrial Chemistry	20	21	20
M.Sc. in Engineering Mathematics	6	6	11
M.Sc. in Textile Chemistry	11	16	07
Total	74	83	80

These numbers indicate that the Institute is expanding in more appropriate courses in recent years

- Cumulative number of assistantships granted

In new programs TEQIP Support was extended for;
TA's(2012-13): 05
TA's(2013-14): 14
This information is from Response sheet of VC & also from MIS.

4	Progress/achievement in strengthening existing PG programs as evidenced by:	1	New equipments have been added through TEQIP in different departments : Through National Competitive Bidding: 15 Through Shopping: 27 Direct Contract: 07 (Softwares)
	• Establishment of proposed laboratories		List of Equipments:

Sr.	NCB	Shopping
1	Refractometer	Chromatography system for enzyme purification
2	Compression Testing Machine	Coating and Laminating Machine
3	Reflectance meter	Computers
4	Vacuum based Pumping unit model	FTIR Spectrophotometer
5	Tintometer	Mini injection moulding machine
6	UV spectrophotometer	ROTARY EVAPORATOR
7	Electronic weighing balance - 4 nos.	Supercrtical extraction system
8	Gas chroma-tography system	Surface Area Analyzer and Porositimeter
9	Automated Flash Chromatography	Ultrasonic testing machine
10	Flash Chroma-tography system	Water vapour permeability machine
11	COD Tester	Gas Chromatography Mass Spectrometer
12	SDS PAGE electro-phoresis with Power Pac	Spectrofluorimeter
13	Incubator Shaker	UV Transmittance Analyser
14	BOD Tester	Fermentor
15	Laboratory Fabric Steamer (Loop Ager)	Injection Moulding Machine
16	Analog Measurement Instrument	
17	Cathode Ray Oscilloscope	
18	Concrete Test Hammer	
19	SDS PAGE equipment and accessories	
20	Orbital Shaking Incubator	
21	Microprocessor Controlled Dissolution Testing Apparatus	
22	Automatic Pull off Adhesion Tester	
23	Cylindrical Mandrel Bending Tester	

24	Digital Coating Thickness Guage	
25	Barcol Impressor Hand-held Portable Hardness Tester	
26	Rotary Evaporator	
27	Moulds for Injection Moulding	

- Adequacy of student enrolments

Direct Contract List:	
1	Mathamatica Software
2	Library backvolume subscriptions: Elsevier
3	Library backvolume subscriptions: Taylor & Francis
4	Library backvolume subscriptions: Wiley
5	Library backvolume subscriptions: SAGE
6	Comsol software
7	Molecullar Modelling Package

A significant amount was spent in building the library resources and suitable softwares for research and teaching.

This information is from PMSS.

Number of PG students admitted in existing PG courses(2013-14): 187, increase from 185 in 2012-13.

Course	Branch	Total
M.Chem. Engg	-	33
M.Pharm	Medicinal Natural Products	06
	Drug Delivery Technology	-
	Pharmaceutical Chemistry	05
	Pharmaceutics	05
M.Sc.	Chemistry	20
	Textile	07
	Engineering Mathematics	11
M.Tech	Bioprocess Technology	33
	Dyestuff Technology	-
	Fibre & Textile Processing Technology	19
	Food Engineering & Technology	09
	Food Biotechnology	14
	Green Technology	28
	Oils, Oleochemicals & Surfactants Technology	13
	Perfumery & Flavour Technology	04
	Pharmaceutical Sciences & Tech.	05
	Polymer Engineering & Technology	15
	Surface Coating Technology	09
M.E	(Plastic Engineering)	07

- Cumulative number of assistantships granted

Under TEQIP Support

TA's: 113 (49:In 2012-13 & 64:In 2013-14)

RA's: 12 (01:In 2012-13 & 11:In 2013-14)

All this information is from MIS.

<table>
<tr><td>5</td><td>Progress/achievement in strengthening existing UG programs in Govt funded and aided institutions only as evidenced by:
• Establishment of proposed laboratories
• Adequacy of student enrolments</td><td>NA</td><td>TEQIP 1.2 Component is only for PG programs

NA</td></tr>
<tr><td>6</td><td>• Improvements in Faculty Development as evidenced by: Percentage of faculty benefiting from the pedagogical training programs

• Percentage of faculty with UG qualification registered/deputed for improving their qualification
• Percentage of faculty deputed for subject domain training, seminars, etc.</td><td>2</td><td>68.29% faculty members underwent pedagogy training during 2013-14.
(Total: 56 Faculty Members)
In addition a in-house program was conducted for new faculty members on ‘Mentoring skills’. The mentoring is an important aspect of the research guide’s skills. 25 faculty members (~ 30% of total faculty) participated in the program.

No faculty with only UG qualification.

31.58% Faculty members attended Subject domain training in 2012-13(Total: 18)
66.67% Faculty members attended Subject domain training in 2013-14 (Total: 38)
50.88% Faculty members attended Seminars in 2012-13 (Total: 29)
56.14% Faculty members attended Seminars in 2013-14 (Total: 32)</td></tr>
<tr><td>7</td><td>Generation, retention and utilization of the non-tuition fee revenue generated through various activities</td><td>1</td><td>Generation of revenue through Sponsored Projects, Industry Consultation and interest on endowment:
<table>
<tr><th>Year</th><th>Sponsored Govt. Project</th><th>Industry Project</th><th>Consultation</th><th>Interest</th></tr>
<tr><td>2011-12</td><td>249L</td><td>335L</td><td>128.87L</td><td>456L</td></tr>
<tr><td>2012-13</td><td>1152L</td><td>434L</td><td>56.9 L</td><td>488L</td></tr>
<tr><td>2013-14</td><td>2851.6L</td><td>1253L</td><td>110.5 L</td><td>510L</td></tr>
</table></td></tr>
<tr><td>8</td><td>Engineering faculty positions in terms of:</td><td></td><td>No Change. However 46 positions have been advertised in February 2014. The interviews are being planned in August 2014.</td></tr>
<tr><td></td><td>• Reduction in vacancies
• Increase in faculty appointed on regular basis</td><td>2</td><td>However, the Institute has generated industry supported endowment positions and has attracted new faculty members under DST-INSPIRE and UGC- faculty recharge program

07 Faculty members have joined in (2013-14) under:
Department of Chemistry
03 - DST-INSPIRE Faculty
01 - DST Fast-Track Young Scientist</td></tr>
</table>

	• Increase in the number of faculty with at least a Masters degree		Department of Foods Engineering & Technology 01 Faculty member as Assistant professor under UGC-FRP Department of Chemical Engineering 02 Faculty members under UGC Faculty Recharge Program. All Faculty members have minimum Master's degree. 91.2% Faculty have Ph.D degree. The vacant faculty positions have been advertised in Feb-2014. The interviews will be held soon. This information is from MIS
9	Improvements in placement rate of UG & PG pass outs	2	Industrial Placements (Information from placement section) (UG placements): 78.38% in 2012-13 51.89% in 2013-14 (PG placements): 45.9 % in 2012-13 35.82% in 2013-14 Placement for Higher studies (Information from Departments) UG: 30.83% of total graduates in 2013-14 PG : 04.61% of total graduates in 2013-14 UG: 37.6% of total graduates in 2012-13 PG : 58.59% of total graduates in 2012-13
10	Enhanced interaction with industry as evidenced by: • Increase in industry personnel registered for Masters & Doctoral programs • Increase in industry personnel trained by the institution in knowledge and/or skill areas • Increase in the number of consultancy assignments secured by the institution • Increase in the number of students' and faculty visits to and/or training in industry	1	Ph.D.: 02 (From Academic section) Industry personnel trained through professional development workshops in 2012-13: 46 2013-14: 117; from TEQIP office records. No and value of consultancy projects: 2011-12: 153(170 Lakhs) 2012-13: 140(166 Lakhs) 2013-14: 126(110.5 Lakhs) Number of students who visited industry 2011-12 : 85 2012-13 : 150 2013-14 : 117 Number of faculty who visited industry 2012-13 : 20 2013-14 : 15

	• Increase in involvement of industry experts in curricula & syllabi improvements, laboratory improvements, evaluation of students and delivering expert lectures • Increase in the number of sandwich programs between industries and the institution		Number of students who went for training in industry 2012-13: All Third Year Students 2013-14: All Third Year Students Number of Industry Experts: 2012-2013 : 48 2013-2014 : 34 All this information is from TEQIP office. No sandwich programs.

TABLE 2. PERFORMANCE AUDIT - IMPLEMENTATION OF INSTITUTIONAL REFORMS

Name of Performance Auditor : Professor R. Natarajan
Dates of Performance Audit : 28th to 29th July, 2014
Name of Institution with location :
Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai – 400019

Sr.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Effectiveness of faculty evaluation by students as evidenced by: • Percentage/ increase in percentage of faculty evaluated by students in one or more subjects • Are results of evaluation properly used for teacher improvement? If yes, is the procedure adopted for teacher improvement including counseling appropriate and effective?	1	The entire faculty is evaluated by students online. (From MIS) The students provide their feedback online and faculty members access the average score online; the summary of consolidated information is also available to VC. Whenever required the faculty members are advised by Dean (Academic Programs); only a few cases are encountered.
2.	Establishment of four funds and their sizes (in Rs.)	1	Corpus Fund: 380 lakhs Faculty Development Funds : 95 lakhs Equipments replacement Funds : 95 lakhs Maintenance Funds : 95 lakhs; Evidence: VC's Response Sheet and MIS.
3.	Offer of incentives to faculty for participation in consultancy, R&D and continuing education programs offered by the institution	1	Consultancy: 2/3 to faculty and 1/3 to institute. R & D : Seed grant given to new faculty Patent Royalty:70% to faculty. CEP: 60% to faculty. Retention of Sitting fees of the Board membership, and honoria as distinguished speakers, & named lectures (Information from Accounts Section)

TABLE-3
PERFORMANCE AUDIT - IMPROVEMENT IN ADMINISTRATIVE AND MANAGERIAL EFFICIENCIES

Name of Performance Auditor : Professor R. Natarajan
Dates of Performance Audit : 28th to 29th July, 2014
Name of Institution with location :
Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai - 400019

Sr.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Modernization and decentralization of administration and financial management	1	Decentralization of administration and financial management exists. (Statutes, rules and regulations of the Institute) The communication by emails is accepted for leave and special approvals from Vice-chancellor. For major infrastructure, BoG gives the approval. Deans, HoDs, Centre Coordinators and Project principal investigators can place orders up to 10L. Beyond 10L approval of Purchase Committee is needed. Recurring expenditure is permitted at all level with cap the same as above. Evidence: VC's response
2.	Responsiveness to students academic and non-academic requirements	1	Dean (Students Affairs & HRD) and HoD's from individual departments address the student needs. TEQIP cell has added several programs for the students.
3.	Responsiveness to faculty requirements	1	Dean (Students Affairs & HRD) and HoD's from individual departments address the faculty needs.
4.	Utilization of institutional resources	1	By the Finance committee of the Board of Management.
5.	Maintenance of academic and non-academic infrastructure and facilities	1	Maintenance of academic and non-academic infrastructure and facilities is looked after by Dean (Infrastructure Development) and HoD, General Engineering Department. Renovations have been taken up and completed for several laboratories; New labs have been constructed. A faculty residential Tower has been constructed to address the issue of accommodation for the new faculty members It will be open by Dec 2014.
6.	Extent of delegation of administrative and financial decision making powers to senior functionaries	1	Covered under Item No. 1

TABLE - 4
PERFORMANCE AUDIT - QUALITY OF EDUCATION AND RESEARCH

Name of Performance Auditor : Professor R. Natarajan
Dates of Performance Audit : 28th to 29th July, 2014
Name of Institution with location :
Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai – 400019

Sr.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Improvements in curricula and /or syllabi	1	Institution- wise curricular revision is done every 5 years; the last one was done in 2009-2010. (Disseminated to students as student diary) Minor revisions are made by individual departments and approved by Academic Council. The Academic Council with UG-PC and PG-PC takes decisions for revision. There have been improvements in evaluation of the students and passing % after the credit system has been brought in. At Ph.D. level, Research Methodology and Laboratory safety courses are compulsory.
2.	Relevance of curricula and syllabi	1	Industry experts are extensively involved in the curriculum development process. Departmental Advisory committees have participation of Industry persons.
3	Improvement in teaching-learning processes as evidenced by: • Use of teaching aids • Continuous evaluation through quiz, assignments or mid-semester examinations etc. Sharing of answer scripts with students and explanation of the evaluation carried out	1	LCD Projectors are extensively used in the classrooms. Demonstration lab is available for illustration of fundamentals principles. Lectures are delivered using powerpoint, using videos and educational sources. Use of internet for data access is permitted during tutorials and to examine case studies. Tablet based technology for attendance & monitoring has been adopted. Continuous evaluation system exists, through quizzes, assignments, presentations and mid-term examination. Attendance system is online to ensure proper conduct of lectures and adequate attendance of the students. Students are shown the answer scripts after evaluation.
3.	• Introduction of flexibility in program offerings • Increased availability of adequate electives		Students diaries are provided which includes academic calendar & CD containing syllabi of all courses. Introduction of large number of electives (70 for UGs & 261 for PGs) in all Departments. At least three electives are offered together.
4.	Progress in securing accreditation of eligible UG & PG programs	2	Accreditation Fees have been paid for all 9 UG courses. All applications are in the completion stage. For 3 MTech Courses, accreditation has been obtained. For 6 M Tech courses, appeal has been filed, against the Committee's report and another committee shall be visiting soon.

			For remaining 4 Masters' courses, fees have been paid and applications shall be finalized soon. The Department of Chemistry has obtained Accreditation from Royal Society of Chemistry, UK for its chemistry post graduate courses.
5.	Increased collaboration with industry in R&D as evidenced by: • Increase in number of joint and industry sponsored R&D work undertaken • Increase in financial contribution by industry for R&D	1	The number of joint projects with industry are 2011-12: 50 2012-13:129 2013-14: 146 Amounts generated through industry projects 2011-12: 230 Lakhs 2012-13: 433 Lakhs 2013-14: 1253 Lakhs (Information from Dean R&D)
6	Increase in percentage of revenue from externally funded R&D projects and consultancies in the total revenue of the institution from all sources	1	2011-12: (1074L + 230L) /2092.83L = 62.33% 2012-13: (1075L + 433L)/2540L = 59% 2013-14 : (2851.6L + 1253L)/5613.87 = 73.12% (Information from Accounts)
7	Increase in the number of publications in refereed journals	1	Number of publications during 2011: 235 International (Scopus indexed) 14 National 2012: 307 International (Scopus indexed) 14 National 2013: 340 International (Scopus indexed) 23 National 2014: Cumulative: 255(till 26th July 2014)
8	Increase in the number of patents filed	1	Number of patents filed (Information from Dean R&D) 2011: 14 2012: 08 2013: 18 2014: 05

TABLE 5
PERFORMANCE AUDIT - PERFORMANCE IN THE GOVERNANCE OF INSTITUTIONS

Name of Performance Auditor : Professor R. Natarajan

Dates of Performance Audit : 28th to 29th July, 2014

Name of Institution with location :

Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai - 400019

Sr.	Institutional Governance Review Template	Assessment Grade (1-3)	Supporting Evidence
1.	A. PRIMARY ACCOUNTABILITIES • Has the Governing Body approved the institutional strategic vision, mission and plan – identifying a clear development path for the institution through its long-term business plans and annual budgets?	3	The constitution of the governing body is according to the statutes of the State Govt.

	The Vision and Mission of the Institute have already been cleared by Board of Management. The Institute strategic plan is to be developed.		
	• Has the Governing Body ensured the establishment and monitoring of proper, effective and efficient systems of control and accountability to ensure financial sustainability	1	A finance committee chaired by the VC has established this system The TEQIP-BoM subcommittee has been formed for monitoring the progress of the Institute.
	• Is the Governing Body monitoring institutional performance and quality assurance arrangements?	1	A Planning and Monitoring committee chaired by the Chairman of Board of Management monitors the institutional performance and quality assurance arrangement; The accreditation for all eligible UG and PG courses is monitored at TEQIP-BoM level and TEQIP cell.
	• Has the Governing Body put in place suitable arrangements for monitoring the head of the institution's performance?	2	The performance of the Vice Chancellor is monitored by the Chancellor through an informal mechanism.
2.	B. OPENNESS & TRANSPARANCY IN THE OPERATION OF GOVERNING BODIES		
	• Does the Governing Body publish an annual report on institutional performance?	1	The Institute publishes a detailed Annual Report on the Academic, financial and administrative parameters of the institute as well as the achievements of faculty and research scholars and students and staff.
	• Does the Governing Body maintain, and publicly disclose, a register of interests of members of its governing body?	3	No.
	• Is the Governing Body conducted in an open a manner, and does it provide as much information as possible to students, faculty, the general public and potential employers on all aspects of institutional activity related to academic performance, finance and management?	1	The agenda and the minutes of the meeting of the BOM are available in the office of the chairman BOM and made available to stakeholders on request.
3.	C. KEY ATTRIBUTES OF GOVERNING BODIES		
	• Are the size, skills, competences and experiences of the Governing Body, such that it is able to carry out its primary accountabilities effectively and efficiently, and ensure the confidence of its stakeholders and constituents?	1	The Board of Management consists of 12 members who are nominated according to the prescribed norms, on the basis of their competence and experience; the composition ensures gender diversity and includes industry experts.
	• Are the recruitment processes and procedures for governing body members rigorous and transparent?		
	Does the Governing Body have actively involved independent members and is the institution free from direct political interference to ensure academic freedom and focus on long term educational objectives?	1	The recruitment processes and procedures conform to prescribed norms and procedures. Yes

	• Are the role and responsibilities of the Chair of the institution and the Member Secretary serving the Governing Body clearly stated?	2	As per the deemed university Act. Now this is modified by the State Govt.
	• Does the Governing Body meet regularly? Is there clear evidence that members of the governing body attend regularly and participate actively?	1	The Board meets four times a year as per Deemed University Act. The members of governing body attend the meetings regularly and participate actively, as evidenced by the minutes. The meetings are organized after consulting the external members. For other purposes, a subcommittee has been formed of Board members and representative from alumni Association to take necessary decisions. The TEQIP program is monitored by this Committee.
4.	D. EFFECTIVENESS AND PERFORMANCE REVIEW OF GOVERNING BODIES		
	• Does the Governing Body keep their effectiveness under regular review and in reviewing its performance, reflect on the performance of the institution as a whole in meeting its long-term strategic objectives and its short-term indicators of performance/success?	2	The effectiveness of the governing body is maintained through adequate attention to action taken report. Institutional performance as well as TEQIP performance, are monitored in terms of the prescribed targets. The short -term indicators of performance are in terms of research publication, sponsored projects, consultancy etc.
	• Does the Governing Body ensure that new members are properly inducted, and existing members receive opportunities for further development as deemed necessary?	2	The new members are informed of the roles and the responsibilities of the BOG members
5.	E. REGULATORY COMPLIANCE		
	• Does the Governing ensure regulatory compliance* and, subject to this, take all final decisions on matters of fundamental concern of the institution.	1	Yes
	• Does the regulatory compliance include demonstrating compliance with the 'not-for-profit' purpose of education institutions?	1	Yes
	• Has there been accreditation and/or external quality assurance by a national or professional body? If so, give details: name, status of current accreditation etc	3	Accreditation Fees have been paid for all 9 UG courses. ALL applications are in the completion stage. For 3 MTech Courses, accreditation has been obtained. For 6 M Tech courses, appeal has been filed, against committee's report and another committee shall be visiting soon. For remaining 4 Masters' courses, fees have been paid and applications shall be finalized soon. The Department of Chemistry has obtained Accreditation from Royal Society of Chemistry, UK for its chemistry post graduate courses.

TABLE 6.
PERFORMANCE AUDIT - SUPPORT TO WEAK STUDENTS

Name of Performance Auditor : Professor R. Natarajan
Dates of Performance Audit : 28th to 29th July, 2014
Name of Institution with location :
Institute of Chemical Technology, Nathalal Parekh Marg, Matunga Mumbai - 400019

Sr. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Percentage of students that complete the full first year and transit successfully to Second Year	1	2011-12 : 88.633% (From MIS & TEQIP office) 2012-13: 83.61% 2013-14: 82.78%
2.	Effectiveness of techniques used for identifying weak students	1	Techniques for identifying weak students through; - Continuous assessment - Mid-term exam performance - Diagnostic tests
3.	Conduct of remedial teaching throughout academic session	1	Yes, Opportunities are provided in an organized manner (including regular study initiative) - Providing each student's report through diagnostic test for their strength & weakness to improve the performance in academics.
4.	Conduct of specialized soft skills and professional skills training	1	Three different agencies conducted programs for soft skills development of students. UG students from First year (2013-14) & third year all departments have attended PG students from First year (2013-14) all departments have attended soft skills programs. (From TEQIP Office)
5.	Increase in the number of campus interviews	1	During 2013-14 about 43 companies conducted campus interview for B.Tech and M.Tech students. The number was 38 in 2012-13. (From Placement Office)
6.	Establishment and functioning of a Finishing School	1	The Panel was selected for finishing schools in August 2013: 1. Roy Edingston Pvt. Ltd. 2. Vertois Training and Consultancy Private Limited 3. Kamshaft innovations Pvt. Ltd. Total 592 candidates have attended the finishing school. UG – 386 PG – 206 (From TEQIP Office)
7.	Increase in the number of internal and external students that attend high intensity training conducted by the Finishing School	1	No external student attended high intensity training programme. All the participants were internal candidates

1. **Improvements noticed on shortcomings reported during earlier Performance Audits.**

- Institute has conducted faculty development programs, both in pedagogy, and for domain knowledge enhancement.
- Diagnostic Tests have been conducted for identifying weak students and for arranging remedial programs.

2. **Brief statements on continuing shortcomings and reasons thereof :**

- Recruitment of faculty; faculty positions have been advertised in February 2014, and the interviews are been planned in August 2014.
- A tower block has been constructed inside the existing campus, to provide housing for 42 faculty members.
- Additional land is expected to be made available within 100KM from the present campus, for additional facilities.

3. **Recommendations for Mentors**

- Assistance in designing systems and processes for preparation of the Governance documents.
- Advice on preparation of SARs and other required documents for Accreditation according to the new NBA guidelines.

TABLE - 7
RESPONSE SHEET FOR HEAD OF INSTITUTION

A. Project Implementation

Sr. No.	Evaluation Parameters	Responses
1.1	Briefly describe the actions taken for obtaining Autonomous Institution status, and the status of your applications as made.	Institute of Chemical Technology is State Government funded Deemed University since Sept 12, 2008 which became functional for July 2009. It was recognized as an Autonomous Institute in TEQIP-I in University of Mumbai from 2004 until the recognition as Deemed University by the Ministry of Human Resources Development, GoI, in September 12, 2008. The Institute is now also recognized as 'Elite Institute' of the state of Maharashtra having same status and privileges as IITs and NITs in the state by the state assembly on 20th April, 2012.
1.2	If your institution is already an Autonomous Institution, briefly state actions taken for the following:	
	1. Value addition to courses as per market demand	On becoming the Deemed University in 2009, All PG and UG courses were completely revised with adoption of CGPA system and continuous assessment and need based learning in terms of an array of electives. Additional PG programs have been added.
	2. Improvements introduced in student evaluation	The CGPA system was introduced in the Institute wef July 2009. The performance in all semesters is considered throughout to decide the final grade point of the candidate at the time of graduation. The system has 30% weightage for continuous assessment, 30% for mid-term test and 40% for the final test. This pattern reduces the stress on students at the final examination and encourages continuous learning.

		The candidate has to maintain enough attendance to earn the credits. New reforms will be text-messaging to absentees and their parents. A new online electronic attendance system has been introduced which shall ensure attendance of students and faculty. Video recording of all lectures will start soon.
	3. Addition of electives	A number of Electives has been added to the syllabi. For the UGs electives are offered from IIIrd semester in the second year, even for the basic sciences and general engineering. The students opt based on their career choice. In the final year, the electives are available in cross-disciplinary manner. The PG courses have elective courses in Sem-I and Sem-II.
	4. Carrying out teacher evaluation by students	The students do evaluate the teachers by anonymous feedback. The new reform will be 24x7 evaluation by students. The electronic feedback system was made available to the students through the computer Centre for all courses. Before leaving the course the students fill in the feedback form in computer centre. Individual faculty member can access the report online from intranet. Some of the faculty members also voluntarily conduct the feedback for their courses at the end of the course, in paper form. The faculty member can submit the brief summary of the feedback to HoD.
	5. Starting of new PG programs, as planned	In 2009-10, we have started some few Master's programs 1. M.Tech in Green Technology 2. M.Tech. in Food Biotechnology 3. M.Sc. in Industrial Chemistry 4. M.Sc. in Engineering Mathematics 5. M.Sc. Textile Chemistry TEQIP fellowships allowed an increase in the MTech Capacity by 25%. The number of admission in each Masters course in Chemical Technology will be increased to 18 from 2014-15 Also new Ph.D programs were initiated in 2009 in

1. Green Technology
2. Food Biotechnology
3. NanoTechnology
4. Civil engineering
5. Mechanical Engineering
6. Electronics Engineering
7. Electrical Engineering
8. Food Science

To cater the needs of the increasing research activities following facilities have been created in 2013-14
(i) 500 MHz NMR facility in Dyes Department
(ii) Biotechnology lab in chemical engineering department
(iii) 5 new labs in DBT-ICT centre
(iv) 400 MHz NMR for Pharma Dept.

		The drawing hall and the KV auditorium are renovated in 2013-14 with latest facilities. ICT-DAE Centre offers interdisciplinary admission to Ph.D. Tech program in Chemical Engineering.
	6. For enhancing qualification, deputing to other institutions and/ or admitting within the institution those teachers that have a Bachelors degree only	92.7% of faculty members are Ph.D. qualified and active researchers
		4 of the 5 faculty members, having MTech qualifications, are registered for Ph.D. in IIT, TIFR and VJTI. Once these candidates complete their Ph.D.s, only one faculty member will have MTech degree., taking the % of faculty to 98% with PhD qualification.
	7. Conducting continuing education and/or skill enhancement programs for industry	The Institute regularly conducts Workshops in areas of current Interests of Industry where industry participants are present.
		Institute faculty also conducts theme based training programs for specific industry which is treated as consultation assignment.
		The Refresher courses were conducted for the following industries
		2012: Indian Chemical Council, Pharmalink consulting Ltd., Abbott Indian
		2013: Indian Chemical Council, LOreal, Reliance Industries Ltd.
		2014: United Phosphorous Ltd., PI Industries, SRF Ltd., IPCA laboratories Ltd., McLeod Pharma, FAMIcare Ltd.,
		The Institute also conducts Training programs for faculty members of other engineering Institutes in specific areas under UGC-Networking Resource Centre.
		In 2013, under TEQIP, ICT conducted 'TEQIP Innovation Meet' involving several TEQIP Institutes in the country.
	8. Inviting experts from industry and eminent institutions for special lectures	ICT has developed several endowments for inviting experts from Industry and academia every year. The Institute has about 82 endowments to invite experts every year. In addition, specifically under TEQIP, under Industry Institute Interaction 43 industry persons were invited for giving lectures.
1.3	The amount of financial powers assigned / delegated to the following. If no delegations has been done so far, state the proposed action for each level with the corresponding timeline:	1. HoDs and Centre coordinators are authorized to utilize the funds available for the Department and concerned Centres
		2. Each Centre has board and/or advisory body to take decisions of expenditure.
		3. The Principal Investigator of a research project has authority of placing order upto Rs. 10 lakhs without Purchase Committee's approval
		4. The Investigator can place direct orders for items costing up to Rs. 25000/-
		5. Each faculty member has freedom to use the funds acquired for his/her project for specified objectives.
	1. Board of Governors	The Board takes decisions only for Major projects.
	2. Head of Institution for: (a) single purchase of equipment, and (b) recurrent expenditure	The Head of the Institution is Vice-Chancellor who can give approvals for special purchases.
	3. Dean	Deans can place order up to 10L. Beyond 10L, an approval of Purchase Committee/ BoG is needed. Recurring expenditure is permitted.
	4. Heads of Department	HoD and Centre coordinator can place order upto 10L. Beyond 10L, an approval of Purchase Committee is needed. Recurring expenditure is permitted.

	5.Faculty	Principal Investigators can place order upto 10L. Beyond 10L an approval of Purchase Committee is needed. Recurring expenditure is permitted.
1.4	Progress in starting new PG programs, as proposed	No new PG programs were proposed under TEQIP as the Institute has already a number of PG and Ph.D. programs
1.5	Actions taken to fill up seats in the existing PG programs	All MTech seats with UGC fellowship are filled in. Last year the AICTE offered fellowships to GATE qualified candidates admitted to the Institute. This year, the fellowships are back with UGC.
		Under TEQIP, additional 64 fellowship were offered in 2013-14. Considering the 49 MTech admissions in 2012, in 2013-14, a total of 113 students were supported with TEQIP Teaching assistantship. In addition, 12 Ph.D. candidates were supported by Research Assistantship
1.6	Actions taken to reduce vacancies in faculty positions	1. The faculty and staff positions have been advertised in February 2014.
		2. We continue to chase industries to establish Industry Chairs or to increase the endowment of the existing chairs.
		3. We have taken 5 additional faculty under UGC- faculty recharge program(1); DST-Ramanujan(1) and DST-INSPIRE(3) faculty members for the Departments where acute shortage of faculty exists. In addition, UGC has sanctioned 12 faculty recharge programme (FRP) positions so far. 6 of them will join within next 6 months.
		4. We also appoint industry persons as Adjunct Professor and/ or Honorary Professors
1.7	Status of faculty appointed on regular basis, and proposed actions to fill up all faculty positions on regular basis	Advertisement for filling faculty positions has been released in February 2014. The interviews are scheduled in August 2014. The scrutiny of the applications is complete.
1.8	Progress in getting pedagogical training in both the modules	03 faculty members, who had joined ICT in recent years went for Pedagogy Training. 61 faculty members, went for subject knowledge domain training 51 faculty members went for seminars in the technical subjects. ICT also developed 2 in-house programs for 'Mentoring Skills' for new faculty members. The program was attended by 25 faculty members from the Institute.
1.9	New Activities (since project start or the last performance audit) undertaken for enhancing interaction with industry	Several initiatives have been taken by ICT for enhanced interaction with Industry
		1. Regular visits of senior faculty members with industry R&D for interaction
		2. Inviting industry experts to interact with departmental level and Institute level.
		3. Inviting industry persons for giving expert lectures
		4. Inviting industry for collaborative projects
		5. Inviting industries for participation in conferences and workshops as sponsor, resource persons, exhibitions of products
		6. Industry training of UG students(it is mandatory)

		7. Inviting industry to challenge the students to solve industrial problems
		8. Establishment of industry chairs, visiting professorships, instituting scholarships and donations for specific purposes
		9. Inviting the industry as examiners of MTech and PhD. Theses
		10. Inviting industry to evaluate final year projects
1.10	Generation, retention and utilization of the non-tuition fee revenue generated through various activities	1. The funds generated by donations are used for the purpose they have been collected.
		2. Overhead components of Government (15% with a cap) and Industry(25%) projects are added to General Fund of the Institute to pay for utilities and deficit of the budget.
2.1	Progress in instituting practice of teacher evaluation by students	The students evaluate the teachers by anonymous feedback. The electronic feedback system is made available to the students through the Information Processing Centre for all courses. Some of the faculty members also voluntarily conduct the feedback for their courses at the end of the course, in paper form. In case of any complaint from students for academic purposes, Dean(Acad.) is authorized to take action.
		In 2012-13, 113 students of 240 graduates gave their feedback. In 2013-14 so far 94 students have submitted their comments.
2.2	Current percentage of teachers evaluated by students in one subjects taught	In 2013-14: All faculty members were open for evaluation. However, the student's participation in the electronic feedback had been poor. In 2012-13, 113 students of 240 graduates gave their feedback. In 2013-14 so far 94 students have submitted their comments.
2.3	Current percentage of teachers evaluated by students in more than one subjects taught	In 2013-14: All faculty members were evaluated. In 2012-13, 113 students of 240 graduates gave their feedback. In 2013-14 so far 94 students have submitted their comments.
2.4	State the incentives being offered to the faulty for participation in consultancy assignments, R&D, and continuing education programs conducted by the institution for industry	1. Faculty member can retain honoraria of meetings, thesis evaluation, sitting fees of meetings, etc. 2. Faculty member is allowed to retain 2/3rd consultation fees without using Institute facility. 3. Faculty members who have been performing well are nominated to National level prizes, awards and fellowships.
		4. Faculty members, generating funds from CEPs and Conferences can retain 60% of surplus for individual faculty development funds, and 10% of surplus is given non-teaching staff fund.
		5. Faculty member taking industrial research projects is allowed to charge professional fees. It is treated as consultation fees.
		6. Faculty member can accept Board Membership of companies and retain the sitting fees.
		7. ISCMA has been giving best professor, best employee and 24 awards for annual performance. The Institute has special awards for teachers based on evaluation by students.
3.1	Are the 4 funds established?	Yes
3.2	If yes, what is the amount in each fund?	Corpus fund: 380 lakhs Faculty Development Funds: 95 lakhs Equipment replacement Funds: 95 Lakhs Maintenance funds: 95 lakhs
3.3	Is the contribution to each fund as per the requirement in the PIP?	Yes

3.4	State the quantum of financial powers delegated to: (a) BOG; (b) Head of Institution; (c) Deans, and (d) Heads of Departments	The Head of the Institution is vice-Chancellor. For major infrastructure projects, the BoM gives the approval.
		Deans, HoDs, Centre Coordinators and Project principal investigators can place orders upto 10L without Purchase Committee.
		Beyond 10L approval of Purchase Committee is needed.
		Recurring expenditure is permitted at all level with cap the same as above.
3.5	If less than those recommended in the PIP, state the reasons for the shortfall, and actions planned to comply with the project recommendations.	NA
4.1	Number of ongoing sponsored projects from industry	144
4.2	Number of industry awarded consultancy assignments completed	2010-11: 123 amount: 66.48 L 2011-12: 178 amount: 128.87 L 2012-13: 150 amount: 56.98 L 2013-14: 126 amount: 110.48 L
4.3	Number of ongoing industry awarded consultancy assignments	126
4.4	Number of organizations and industries with whom MOUs have been signed for joint R&D	2010: 17 2011: 20 2012: 21 2013: 05 2014: 03
5.1	List the UG programs accredited on date by name	The visit of a Committee for M Pharm course is over. Results are awaited.
		The Institute has applied for Accreditation in May 2014 for all UG courses; These courses were accredited until July 2013.
5.2	• State program-wise action taken to get accredited the eligible UG program that are yet to be accredited. • Describe difficulties faced, if any.	Applications for accreditation of all UG courses have been filed. A few data points are to be uploaded to complete the process. The NBA site permitted uploading the applications only in March 2014. Now major data have been uploaded for all UG courses. The site also had problem with number of faculty members for a course.
5.3	List the PG programs accredited on date by name	M. Tech. – Bioprocess Technology M. Tech. – Food Biotechnology M. Tech.- Pharmaceutical Technology The visit of a committee for 5 MTech programs was over on April 2013. An appeal has been filed to AICTE for the Committee's report for 6 MTech Courses and a visit from another committee is expected in near future to reevaluate those courses. Applications for remaining 5 Masters courses is being files.
		It is also a matter of pride that the department of Chemistry has received accreditation of Royal Society of Chemistry, UK, for its courses

5.4	• State program-wise action taken to get accredited the eligible PG program that are yet to be accredited. • Describe difficulties faced, if any.	Applications for remaining PG courses (MChemEngg, MPharm MTech-Green technology, MTech-Food Biotechnology) will be filed in this year. The fees for the same have been paid.
6.1	Give the number of papers published in national refereed journals from the date of joining the Project.	2011: 12 2012: 14 2013:23 2014:03
6.2	Give the number of papers published in Foreign refereed journals from the date of joining the Project.	2011-235 2012-307: 2013-340 2014-255
6.3	Number of patents filed since joining the Project	2011: 14 2012: 8 2013: 18 2014:05
6.4	Number of patents obtained since joining the Project	2012:07 2013:10
7.1	Actions being taken for identifying weak students	1. Mid-term exam performance was used to identify the preparedness of the students
		2. A formal diagnostic test was conducted for all first year UG and PG students. This data was analysed comprehensively to understand the underlying reasons of performance of the students
		3. The tests have been also conducted on Third year students to see the progress of the students. These results are awaited.
7.2	Number of students that have benefited from remedial teaching since joining the Project/ since the last performance audit	A number of students were identified in different disciplines. Those who failed in mid-term exam as well as those who were at borderline were asked to attend remedial classes. It has improved the performance of the students in Mathematics. But only the students who were admitted in the later stage of the admission process were found to be failing in 'Organic chemistry'. The remedial measures will be taken up for these students.
7.3	Number of students that have benefited from specialized soft skills and professional skills training programs conducted since the last performance audit	1. Finishing Schools: A number of workshops were organized to develop soft skills in the graduating class. The workshops were all students of the final year, I,e 240+ students in UG programs and 190 students in second year of PG programs. Only 55% of the eligible students availed the facility. (Communication Skills-, Interview Skills-)
		2. Lab Safety Workshop: This workshop is now compulsory for all students admitted to Masters and PhD programs.
7.4	Status of establishment and functioning of Finishing School	A number of workshops were conducted for the third and final year students during 2013-14. Total 592 candidates have attended the finishing school. UG – 386 PG – 206

Institute of Chemical Technology

Matunga, Mumbai-400019 State: Maharashtra

Governance and Development Plan

The Board of Management of the Institute is governed by the UGC guidelines for the Deemed University and as an Elite Institute of the State of Maharashtra the Government of Maharashtra has approved New Statutes for the Institute which ensures more independent participation in the Board of Management.

BOARD OF MANAGEMENT

The Board of Management is the principal organ of Management and Principal Executive Body of ICT.

The following is the new Constitution of the Board approved by the State Government which now ensures more independent members on the Board.

1.	Vice-Chancellor	Chairperson
2.	Pro Vice-Chancellor	Member
3.	Deans, not exceeding two (by rotation based on seniority)	Members
4.	Three eminent academicians nominated by the Chancellor	Members
5.	One eminent academic to be nominated by Central Government in consultation with UGC	Member
6.	Two Teachers(professor, Associate professor) by rotation based on seniority	Members
7.	One nominee of sponsoring Society	Member
8.	Registrar of the Institute	Member Secretary

The Governance of the Institute is through various Empowered Committees that report to the Board of Management

Sr.	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 recurring expenditure and the total nonrecurring- expenditure of the year based on the income and resources of the institute. 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.
		It also considers fee structures and other changes decided by the administration

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 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 harmonious employee relations
6	Deans & Associate Deans, Controller of Examination	There are 4 Deans (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, The Deans assists the Vice Chancellor in performing his duties. The Associate Deans assist the Deans
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.

The administration of the Institute is through a structure made of four Deans and 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)	Student Affairs And Human Resource Development (Sahrd)	Research Consultancy And Resource Mobilization (Rcrm)	Infrastructure And Campus Development (Icd)
Undergraduate Programmes	Students Welfare	Resource Mobilization	Purchase Committee
Postgraduate Programmes	Welfare of Support Staff	IPR and Technology transfer	Hostel
Admissions	Grievances Redressal Cell	Research Collaborations	Campus, Eco-campus Classrooms, Gardens
Examinations	Legal Cell		
Library	Women's Cell		
Academic Activities	Special Cell		Canteen
Unfair means in examinations and Vigilance	Equal Opportunity Cell		Safety
Merit-cum-means and Trust Scholarships	Appellate Committee		Scrap disposal
Travel Grant	Cultural Activity		
Publications	Anti-ragging		
Diploma Course in Chemical Technology Management (CTM)	Social Responsibility Cell		Computerization and Records
	Disciplinary Action		
	Cell to Eliminate Sexual Harassment		

PRIMARY ACCOUNTABILITIES

	Practice	Self-Review comment	Development Plan
1	Has the Governing Body approved the institutional Strategic vision, mission and plan identifying a clear Development path for The institution through its long Term business plans and annual budgets?	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 desires to leverage its strength in research & Innovation to build further the University at a world class level. 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.	We have asked for additional campus looking at next 50 years of expansion into new courses and research areas and a one- time-grant of development from the State Government.
	Has the Governing Body ensured the establishment and monitoring of proper, effective and efficient systems of Control and accountability to ensure Financial sustainability?	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 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.	The Functional Committees will be reconstituted according to new statutes of the Institute, approved recently by the State of Maharashtra.

	Is the Governing Body monitoring Institutional performance and Quality assurance arrangements? Are these benchmarked against other institutions to show that They are broadly keeping pace with the institutions they would regard as their peers or competitors to ensure and enhance institutional reputation?	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 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 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	To attract more talented faculty, 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. A new faculty tower is being built for new faculty members which should be available at the end of 2014. Additional research building is planned to accommodate increased faculty strength and new equipments are being purchased for frontier areas of research. The plans are afoot to build a Research and Innovation Park in the Western India in a consortium with other technical, engineering and science organizations and Industry. ICT initiated a virtual Innovation Networking project in 2014 as a Pilot project for the Innovation Park
		We have been retaining talented faculty members so far in the Institute. In the last few years the number of faculty is increasing because of chairs created specially by ICT. New faculty supported by DST and UGC as INSPIRE Fellows, Ramanujan Fellows and UGC-FRPs has increased our repertoire and expertia.	

	Has the Governing Body put in Place suitable arrangements For monitoring the head of the institution's performance?	A planning and Monitoring Board which meets once in a year to consider the performance of each department. 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.	More frequent meetings of the Planning and Monitoring Board have been planned. 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 shall be constituted for Monitoring of performance at micro-level. Even after the TEQIP program is over the activities initiated by the TEQIP shall be continued.

OPENNESS AND TRANSPARENCY IN THE OPERATION OF GOVERNING BODIES

	Practice	Self-Review comment	Development Plan
	Does the Governing Body publish Annual report on institutional performance?	The Institute publishes Annual Report of the Institute giving details of the achievements of Departments and individual in his/her discipline. It is part of the Institute's functioning for several years to take stock of performance every year and appreciate the best performers.	The practice of publishing Annual Report will continue. It has been expanded to encompass every activity on the campus.
	Does the Governing Body maintain, and publicly disclose, a register of interests of members of its governing body?	The Institute publishes, details of every Individual working in the Institute, right from the Board Members to non-teaching staff. They are available on Institute's website, Annual Reports, and diary which are usually sent major academic & Research institutes. Every visitor to ICT is given this set of documents. The details disclosed are pertaining to the role of each member in the Institute. The other information of the members cannot be disclosed.	It is part of practice of the Institute to disclose the information to the maximum extent and shall be continued, without affecting privacy of the individuals.
	Is the Governing Body conducted In an open manner, and does It provide as much information as possible to students, faculty, The general public and potential Employers on all aspects of Institutional activity related to academic performance, Finance and management?	The Information about the Institute, its funding generated through research projects, industrial consultations are disclosed in Annual report which is available on the ICT's website for public. The BoM's decisions are available in a register kept in VC's office in office which are free to any individual of the Institute to read or can have access to.	The Institute plans to develop a web based browser system that can be accessible to all stake holders. The academic performance of the students will be also displayed on the website. It is planned to maintain a fully functional MIS system for the University in order to respond to the queries of all stakeholders, particularly rom students for their academic performance. The decisions of putting all financial details on the website will be placed to the new Board in the near future.

KEY ATTRIBUTES OF GOVERNING BODIES

	Practice	Self-Review comment	Development Plan
	Are the size, skills, competences and experiences of the Governing Body, such that it is able to carry Out its primary accountabilities Effectively and efficiently, and Ensure the confidence of its Stakeholders and constituents?	The Members of the BoM are well accomplished scientists and administrators in their own right. However, we need more active and frequent participation of the members from the Board in functioning of the Institute. The Institutional Committees also require frequent evaluation on formal basis.	A new Board Composition has been approved by the State Government and shall be in place in soon. This review mechanism is now brought in because of TEQIP committees which look into functioning of several committees of the Institute. Involvement of alumni is also sought in this planning and monitoring mechanism.
	Are the recruitment processes and procedures for governing Body members rigorous and transparent?	The appointment of BoM is through the State Government through nominations.	The new Board shall be formulated soon as per the new statutes issued by the State Government. The procedure of selection of the Board members has been laid out clearly in the BoM composition and statutes and shall be followed to the letter and spirit.
	Does the Governing Body have actively involved independent Members and is the institution Free from direct political interference to ensure academic Freedom and focus on long term Educational objectives?	The existing BoM has significant presentation from Internal faculty. There has been also participation from the State Administration, which finds it difficult to attend all of the meetings. There has been no political interference in the board so far. However, as State Government funded University, the Institute has to follow political decisions regarding reservations in admissions and recruitment.	The new BoM shall have more independent representation from external academic experts. We hope that we will have more unbiased input from the members in future and selection of the Board members shall be dependent on the time that the members can give for the Institute and Board meetings.
	Are the and responsibilities of The Chair of the Governing body, the Head of the Institution and The Member Secretary serving the governing body clearly stated?	The statutes of the functioning of the Institute clearly state the responsibilities of every person in the Institute, including board members.	The Government of Maharashtra has approved new statutes for functioning of the Institute which shall be implemented soon.
	Does the Governing Body meet regularly? Is there clear evidence that members of the governing body Attend regularly and participate actively?	There are four meetings every year of the Governing Body. The minutes of the meeting are meticulously kept and recorded.	There have been at least four meetings every year and the practice will continue. A sub committee of the BoM may be formed to take decisions which can meet more frequently.

REGULATORY COMPLIANCE

	Practice	Self-Review comment	Development Plan
	Does the Governing Body ensure regulatory compliance and, subject to this, take all final decisions on matters of fundamental concern to the institution?	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.	The functioning of the Board need to make more responsive to other bodies, particularly, the faculty and non-teaching staff members who contribute to the growth of the Institute. Every Board member will need to have contact with all the stake holders of the University. This will be emphasized while selecting the board members in future.
	Does the regulatory compliance Include demonstrating compliance with the 'not-- for-- profit' purpose of education institutions?	The Institute is an Educational Institute which has dedicated itself to the advancement of science and knowledge.	ICT retains the non-profit organization nature. The Institute has mission of spreading knowledge to everyone and not profiteering from any activity. Education, Research and Innovation of national relevance shall be focus of the Institute.
	Has there been accreditation and/or external quality assurance by a national or professional body? If so, give details: name, status Of current accreditation etc.	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 based on rigorous review of the performance of the departments in the ICT. All our 9 UG courses accredited were thrice at five years intervals until July 2013 and application for renewal for all UG courses has been already filed. Of 14 PG courses, 2 courses were accredited until 2013 while 9 were accredited until 2011. At present, 3 PG courses are accredited and for seven PH courses an appeal has been filed. Applications for all other PG technology and engineering courses have been filed in 2014.	We would like to get all UG and PG courses accredited by Dec 2014 by NBA. Being now a University, ICT has also geared up for accreditation by NAAC. The Chemistry Department of ICT is also seeking Accreditation from Royal Society of Chemistry, UK. The laboratories of planned Research and Innovation Park shall also seek ISO certification.

ACTIVITY-WISE DEVELOPMENT PLAN

	Institutional Sustainability	Plan of action
1	Strategic plan to map out a clear development path for the institution	There is strategic plan drawn for expansion of the activities over the next Twenty Five & Fifty years with establishment of Technology Centres, Innovation University and Research and Innovation Park. We have asked for additional campus, from the State Government, looking at next 100 years expansion. The funding from State Government is limited but the Central agencies have been very supportive and the funding is being increased through leveraging the research activities under schemes UGC, DBT, DAE and other funding agencies.
2	Ability of the institution to focus on the essential challenges and to adapt to the changing environment	ICT faculty has plans to adopt for the changes taking place in education and professional environments, with reference to global scenario. In the last 15 years, ICT could stand against the popularity if IT degress and still attracted good students for its degree and research program. The research and Innovation approach has now become more relevant in global competition.
3	External rankings and benchmarking wrt peers or competitors	We would be bench marking ourselves against the best in the World. The performance of the Institute shall be in terms of number of publications, number of graduates & Post graduates and Ph.D.s, number of patents and technology transfer and internal and external revenue generation. ICT continues to strive for attaining a pinnacle position in the country and would like to compete with globally acclaimed institutes, like MIT, Stanford.
4	Attracting and retaining the caliber of faculty needed to deliver our vision for the institution	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. ICT will attract also new faculty supported by DST and UGC as INSPIRE Fellows, Rananujan Fellows and UGC-FRPs.
5	Skills & HR issues	Training programs for improving the skills at non-teaching staff are being planned for supporting the increasing activities of the Institute. The State Government has reviewed our needs for positions of additional faculty and support staff and within next 3-4 months, the number will be increased significantly. Also all vacant positions are being advertised with the support of the Government.
6	Confidence in students and faculty.	At PG level, there is definitely issue of quality of students at the entry level, which is being addressed by providing additional training to the newly admitted students.
7	Threats to our viability and strategies for managing them	The major issues in Development plan is linked to limited infrastructure for supporting large number of research students, timely payment of their scholarships, and increasing utilities for enhanced research activities are being addressed through research projects. The faculty shortage shall be taken care of by creating endowment chairs, DST INSPIRE fellows and UGC-FRP appointments. The shortage of non-teaching staff shall be supported by the Institute through funds created by research projects and consultancy assignments.

Research		
1	Research wrt mission and position of the institution	The research activities have strong base of fundamental science. At the same time, it should have direct applicability in industry as well as for social benefits. There is conscious effort to see that the work does not remain in papers and theses. We do want to remain at the lead of the research and innovation revolution that is taking place. The emphasis shall be given for Innovation, entrepreneurship and for the student's development.
2	Assessing the success of the institution's research	The output is to be measured in terms of number of Ph.Ds. and postgraduates, number of publications in peer reviewed journals, the patents that are filed and granted and number of industrial consultancy assignments, along with the external revenue generation to support the Institute by technology transfer.
3	Improving research outputs in terms of quality and cost recovery	The number of Ph.D. students and Number of Post-graduates have been increased in recent years which shall be maintained. State-of-the –art equipments have been installed which are made available to students at no extra cost. The cost of the research is entirely borne by the research projects with the faculty members and centrally supported schemes. This approach shall continue, to maintain independence of academic research.
4	Relationship between research and teaching	We strongly believe that research enriches a teacher and thus insist that everybody in ICT should be engaged in active research. We should have 98% faculty with PhD. in coming couple of years. Ph.D. shall be also minimum qualification for getting faculty position in ICT and every faculty member, shall be Ph.D. supervisor.
5	Relationship between research and knowledge transfer	The research output needs to be employed to get even economic benefits and recognition from peers. The knowledge transfer from labs to plants requires either participation of an Industry or involvement of faculty members with industries. Both models are in practiced in ICT and therefore establishment of a Research and Innovation Park has been proposed which shall not only support ICT's processes or products but also other Institutes in Western India.
6	Financial implications of our research activity	Every faculty member, involved in research, has to bring in funds for his/her own research. Industry supported endowed chairs and Ph.D. fellowships have been actively sought.

Knowledge Transfer and Relationship		
1	Mission in Knowledge Transfer	ICT interacts with industries as well as with other academic institutes and research organizations for sharing the knowledge generated in ICT. ALL faculty members participate as resource persons in workshops/refresher courses. Networking as been built in the ICT culture. Today we have more than 85 MoU for joint works including foreign university for joint Ph.D. degrees. ICT has also developed an 'Innovation Networking' with other TEQIP institutes in the State of Maharashtra and is ready to take challenge of working other Institutes in Western India.
2	Identifying and exploiting opportunities to develop additional income and services	The major external revenue is generated through Research projects. These are contract research with few months duration to three-four years durations. Being our major strength, the research opportunities shall be, therefore, exploited to the fullest extent. Patents have been of obtained and also technology can be transferred to industry.

3	Reputation and contribution in local and regional communities	ICT stands tall amongst its peers in terms of quality of graduates produced and the research. In social community around the Institute, ICT shall take more proactive role to address the social issues of water , energy and affordable health care.
6	Alumni and Fund-raising activities	A strong UDCT Alumni Association is working in ICT with more than 5200 members. Many of these members actively participate in fund raising activities of Institute, deliver lectures, and mentor the students. The alumni shall be actively pursued for their contribution, both financial as well as non-financial to the Institute to grow.

Financial Health		
1	Financial Status of institution	At present, the research activities are completely supported by individual efforts of faculty members and support received from central funding agencies under Special assistance program. Generating external funds through research projects is very important. 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. We will have to increase the revenue at least 30-40% every year to generate enough corpus in next ten years.
		But considering the current state, we may have to work on developing a large corpus for sustenance of the activities in long terms. This is being targeted by Technology development and Transfer.
2	Information management of the institution	The Planning and Monitoring Board shall take steps to ensure maintenance of quality and timelines of the information. A web based MIs system shall be in place in net six-eight months to provide all the information to the BoM members.
4	Financial strategy and policies	All our investments are in Government Securities without loss of the capital. As an Educational Institute, we have to follow State Governments' rules and regulations and directives. The accounts of each scheme are audited internally as well by external auditors. We approach industries and philanthropist to assist us in specific activities.

Estates and Infrastructure Action Plan		
1	Adequacy of infrastructure	We do need additional campus and additional buildings to grow as envisaged in strategic plans. We have petitioned to the State Government for additional space. The State Government has promised us land for a satellite campus.
2	Facilities to meet student expectations, to attract high quality staff, and to deliver academic objectives	We need additional resources, such as the hostels, faculty accommodations and lab space. Plans are afoot to build these infrastructure in near future if we get land near Mumbai from the State Government. E-Governance will be adopted for easing the functioning of the Institute.
3	Managing technology, information systems and innovation	The funding from industry is clear indication of Innovation activities. We plan to partner with industries, small or major, to provide support to industries in a symbiotic environment.
4	Management of capital projects and the effectiveness of planned program.	There are constraints because of limited resources but currently the capital expenditure is effectively managed. We have made special provision for maintenance and campus development funding endowment. Donations and partnerships with industry are actively pursued to generate corpus for the Institute.

Staff and Human Resource Development		
1	Institution's overall management of staff and with the quality of HR strategy and advice to governors	A long term solution for addressing several vacancies of faculty and staff is necessary. The Government has just sanctioned filling of all vacant positions and will create additional ones. The ICT provides ample opportunities for every staff members for qualification upgradation.
2	Quality of appointments made to senior positions and the way these posts are managed and appraised	The appointments are based on experience and merit and shall be main criteria for appointments. The Board of Management has also raised the minimum qualification beyond AICTE norms. The minimum qualification for faculty member shall be Ph.D.
3	Framework of succession planning	The second tier of faculty membersare being groomed for taking more important positions in future by sending them for management capacity enhancement training and subject related trainings.
4	Framework for performance management	We have now a new statutes approved by the State which are based on the Elite Status of the institute like IITs, IITSc and IISERS. This will bring in more accountability in the performance of the Institute. E-Governance is also being brought in for in-house discipline

Governance, Leadership and Management		
1	Working of the governing body and its committees	A more active and frequent participation of the members from the Board is expected in functioning of the Institute when a new Board shall be appointed with more external members. A more frequent evaluation on formal basis is now brought in because of TEQIP which looks into functioning of several committees of the Institute.
2	Composition of the governing body and the processes for refreshing its membership and maximising the contribution of governors effective	The Board structure shall be similar to what exits for IITs and NITs which will have a more autonomous representation. The structure similar to IIT's board shall make it more effective.

First Year TAs (TEQIP MTechs) Admitted in (2013-14)

Sr.	Course Name	Candidate	Title of Project	Project Guide	Category
1	M. Chem. Engg.	i) Kabade Balkrishna Ketan	Quantitative Mapping of Solids Handling in Miniaturized Flow Reactors Under Sonication	Dr. D. V. Pinjari	SBC
2	M. Chem. Engg.	ii) Sapkal Pradyumna Vilas	Textile waste water treatment using membrane bioreactor	Mrs. K. V. Marathe	OPEN
3	M. Chem. Engg.	iii) Patil Ajinkya Ashok	Engineering non spherical particles for improved biomedical applications	Dr. Ratnesh D Jain	OPEN
4	M. Chem. Engg.	iv) Kardam Vikas	Removal of copper from copper waste in a pulsed sieve plate extraction column (PSPEC) using LIX 84-I as extractant	Dr. V. K. Rathod	SC
5	M. Pharm.	i) Lambe Aditi Suresh	Extraction & isolation procedures for pellitorine from anacyclus pyrethum	Professor K. S. Laddha	OBC

6	M. Pharm.	ii) Kumbhar Sangita Balbhim	Evaluation of Pharmacological activity of Pithicellobium dulce plant	Professor A. R. Juvekar	OBC
7	M.E (Plastic Engineering)	i) Koli Akshay Ganesh	Manufacture and testing of blow moulds	Dr. A. C. Rao	OPEN
8	M.E (Plastic Engineering)	ii) Dodia Vishwa Harshad Bhai	Manufacturing of blow moulds for industrial application.	Dr. D. D. Sarode	OBC
9	M.E (Plastic Engineering)	iii) Misal Pooja Durgadas	Manufacturing of PETG master batches and its uses	Dr. V. R. Gaval	OBC
10	M.E (Plastic Engineering)	iv) Patel Sunil Kumar	Study of Master Batch For Various Polymer	Dr. R.S.N. Sahai	Open
11	M. Tech (Textile)	i) Ulman Khushalini Nitin	Use of Admicellar polymerization in textiles	Professor S. R. Shukla	OPEN
12	M. Tech (Textile)	ii) Mukherjee Indrajit Dilip	Dyeing & Finishing of textiles with layer by layer techniques.	Prof(Dr) S.R.Shukla	OPEN
13	M. Tech (Textile)	iii) Bhawsar Shripad Jeevan	Green Textile Processing	Dr. R. V. Adivarekar	OBC
14	M. Tech (Textile)	iv) Gupta Dharmendra Ramdhani	Modification of fibre	Professor (Dr.) M.D.Teli	OPEN
15	M. Tech (Textile)	vi) Vade Akshay Narottam	Application Of Magnetic Field In Textile Processing	Dr. R. D. Kale	NT-D
16	M. Tech (Textile)	vii) Powar Ajinkya Sudhir	Synthesis of Chitosan and its application in textile	Dr. R. V. Adivarekar	OPEN
17	M. Tech (Textile)	viii) Pati Pramodkumar Parameshwar	Process Intensification in textile processing for value addition	Dr. R. V. Adivarekar	OPEN
18	M. Tech (Textile)	ix) Patil Swapnali Yashavant	Synthesis and application of Eco-friendly flame retardants on textile.	Dr. R. V. Adivarekar	OPEN
19	M. Tech (Food Engg & Technology)	i) Patil Vishruti Rajendra			OBC
20	M. Tech (Food Engg & Technology)	ii) Kulkarni Nikhil Girish	Newer techniques for extraction of oil from flaxseeds	Professor Rekha Singhal	OPEN
21	M. Tech (Food Engg & Technology)	iii) Mali Swapnil Tanaji	Chemistry and technology of Euryale Ferox	Professor Rekha Singhal	OBC
22	M. Tech (Food Engg & Technology)	iv) Pathade Ajay Anna	studies on extrusion processing of vegetables	Dr. U. S. Annapure	SC
23	M. Tech (Oils)	i) Honmane Bharat Chandrakant	Deacidification of cottonseed oil	Dr. Dipak Pinjari	NT-C
24	M. Tech (Oils)	ii) Chudhari Suryakant Yogesh	Synthesis and characterization of Estolide and their derivatives by using castor oil	Dr. A. P.Pratap	NT-C
25	M. Tech (Oils)	iii) Devasarkar Ganesh S.	Detoxification of Oil meal (cake)	Dr. A. P. Pratap	OPEN

26	M. Tech (Oils)	iv) Bhole Gandhar Sunil	Sugar Fatty ester Ethoxylates as Demulsifiers for Petroleum Sludge	Dr.J. S. Waghmare	SC
27	M. Tech (Pharma)	ii) Raut Atul Suresh	Solubility Enhancement of Poorly Water Soluble Drug by Nanoformulation	Professor P.R. Vavia	OBC
28	M. Tech (Pharma)	iii) Kande Kishor Vasantrao	Microwave assisted development of Orally Disintegriting Tablet(ODT)	Professor P.V. Devarajan	NT-D
29	M. Tech (Pharma)	iv) Waghmare Vijaya Sadashiv	Fabrication of starch-silver nanofiber by electrospinning	Dr. P. D. Jain	SC
30	M. Tech (Polymer Engineering and Technology)	i) Buchade Nitesh Sanjay		Professor P. A. Mahanwar	NT-C
31	M. Tech (Polymer Engineering and Technology)	ii) Gadgeel Arjit Ajay	Depolymerization of polymer by solution method	Dr. S. T. Mhaske	OPEN
32	M. Tech (Polymer Engineering and Technology)	iii) Bhavsar Siddhant Ravindra	Waterbased composite coating	Dr. R. N. Jagtap	OBC
33	M. Tech (Polymer Engineering and Technology)	iv) Geed Priyanka Harishchandra	Synthesis of thermally stable polymite & their nano composite	Dr. V. V. Shertukde	Open
34	M.Tech(Surface Coating Technology)	i) Gandohar Roshan Mukund	Fabrication of Superhydrophobic coating	Dr. S. T. Mhaske	OBC
35	M.Tech(Surface Coating Technology)	ii) Vastani Madhav	Anti-Carbonation Coatings	Dr. R. N. Jagtap	NT-B
36	M.Tech. (Surface Coating Technology)	iii) Pinjari Sahil Abdul	Improving the Conductivity of Polymer for Stealth Coating Application : Conductive Polymer(Polyaniline)	Dr.V. V. Shertukde	OBC
37	M.Tech(Surface Coating Technology)	iv) Rane Pradnya Chandrakant	Hyperbranch polyester amide coating	Dr. S. T. Mhaske	Open
38	M.Tech (Bioprocess Technology)	i) Gorantyal Pooja Naresh	QbD based media engineering for vancomycin production	Dr. S. B. Kale	OBC
39	M.Tech (Bioprocess Technology)	ii) Sarda Neha Nitin	Production purification & characterization of Bispecific antibodies	Dr. S. B. Kale	OPEN
40	M.Tech (Bioprocess Technology)	iii) Aher Ashutosh Deepak	Isolation & Purification of soluble receptor for advanced glycation end products	Dr. S. S. Sathaye	OBC
41	M.Tech (Bioprocess Technology)	iv) Japhalekar Kshitija Arun	Growth engineering of microalgae and cyanobacteria for carotenoids production	Dr. Reena Pandit	SC

42	M. Tech (Food Bio-Technology)	i) Kusmode Sneha Ashok	Studies in Brining and Pickling Of Selected Indian Fruits and Vegetables	Dr.Laxmi Ananthanarayan	OPEN
43	M. Tech (Food Bio-Technology)	ii) Nimbalkar Megha Dayanand	Mushroom processing	Professor S. S. Lele	OPEN
44	M. Tech (Food Bio-Technology)	iii) Savant Sayali Sanjay	Studies in development of formulations based on protein hydrolysates	Dr. Laxmi Ananthanarayan	OPEN
45	M. Tech (Food Bio-Technology)	iv) Vitore Bhaulal Lucky	Study of Calcium Degradation Bacteria in Food Industry Waste	Professor S. S. Lele	SC
46	M. Tech (Perfumery & Flavour Technology)	i) Keni Swapnesh Chandrkant	Control release of different fragrance molecules from the substrate by hydrolytic cleavable and photocleavable mechanisms.	Professor N. Sekar	SBC
47	M. Tech (Perfumery & Flavour Technology)	ii) Lale Lakhan Ashokrao	Extraction of essential oils from Flowers to develop the top note	Dr. J.S. Waghmare	OBC
48	M. Tech (Perfumery & Flavour Technology)	iii) Chavan kirti Deelip	Development and characterization of controlled systems for fragrances	Dr. R. D. Jain	OPEN
49	M. Tech (Perfumery & Flavour Technology)	iv) Vibhute Neha Deepakrao	Isolation & Purification Of Bioactives from spices	Dr. Amit P. Pratap	OBC
50	M. Tech (Perfumery & Flavour Technology)	iv) Kuchekar Rohan Sharadkumar	Known Aldehydes & their derivatives in perfumery synthesis & its application	Dr. G. S. Shankarling	OBC
51	M.Tech (Green Technology)	i) Dhonde Loukik Deepak	Hydrotreatment of Vegetable oils to produce renewable diesel	Dr. P. D. Vaidya	Open
52	M.Tech (Green Technology)	ii) Bole Ameya Ajit	Process intensification in pharmaceutical industry:Celecoxib	Professor V. G. Gaikar	Open
53	M.Tech (Green Technology)	iii) Galgali Ankita Jayant	Hydrolysis of ethylesters	Dr. V. K. Rathod	Open
54	M.Tech (Green Technology)	iv) Kukade Sapana Arjun	Solid acid/base catalysts for rearrangement reaction	Professor R. V. Jayaram	SC
55	M.Tech (Green Technology)	v) Pawar Sonali Khandu	Functionalization of carbon-synthesis and applications	Professor R. V. Jayaram	SC
56	M.Sc. (Chemistry)	i) Chenna Divya Ravinder	Synthesis of nanoparticles	Professor B.M.Bhanage	Open
57	M.Sc. (Chemistry)	ii) Attri Vimalkumar N.	Modification of Nucleocides by sonogashira reaction	Dr. A. R. Kapdi	Open

58	M.Sc. (Chemistry)	iii) Bhat Neetha Subrananyeshwar	Organic synthesis and reaction	Professor S. D. Samant	Open
59	M.Sc. (Chemistry)	iv) Bhalerao Navin Ravindra	Emulsification Of Vegetable Oil	Professor J. M. Nagarkar	SC
60	M.Sc. (Chemistry)	v) Gaikwad Akshay Arun	Synthesis of cation sensing fluoresent chemosensor	Dr. Dipanwita Das	SC

Second Year TAs (TEQIP MTechs) Admitted in (2012-13)

Sr.	Degree	Names of candidate	Title of Project	Project Guide
1.	M.Chem.Engg.	Ankit Gada	Economic analysis of solar assisted drivers	Professor B.N.Thorat
2.	M.Chem.Engg.	Sandeep Kendre	Classification & selection of industrial filteration systems for varios applications	Professor B.N.Thorat
3.	M.Chem.Engg.	Adhirath Wagh	Bio-mass be-construction & conversion technology	Professor A.M.Lali
4.	M. Tech. Dyestuff Technology	Rohit Nitin Bhide	Synthsis of fluroscent compound	Professor N.Sekar
5.	M. Tech. Dyestuff Technology	Amruta R Joglekar	Synthesis of phthalocyanine using green methods & study of formic acid in reduction reaction	Dr. G.S. Shankarling
6.	M. Tech. Dyestuff Technology	Sayali Govind Kulkarni	Synthesis of colorants for biological[M.tech(Dyes)]applications	Professor N. Sekar
7.	M. Tech. Fibers and Textile Processing Technology	Mahajan Geetal Atul	Multi-functional finishing of textiles	Professor R.V.Adivarekar
8.	M. Tech. Fibers and Textile Processing Technology	Bansal Prabhat Shobha Anil	Functional finishing of synthetic & natural	Dr. R.D. Kale
9.	M. Tech. Fibers and Textile Processing Technology	Maurya Shailesh Ramdhani	Upcycling of textile	Professor M.D.Teli
10.	M. Tech. Fibers and Textile Processing Technology	Ms. Shitole Pallavi Adinath	Application for biopolymer in textile	Professor M.D.Teli
11.	M. Tech. Fibers and Texile Processing Technology	Raybole Abhisek Pratap	Application of nano-emulsions in textiles	Professor M.D.Teli
12.	M. Tech. Food Engg. and Tech.	Thati Shivkumar	Development & characterization of gluten free Indian traditional food	Dr. Shalini Arya
13.	M. Tech. Food Engg. and Tech.	Swati B Sonawane	Preservation of Indian Traditional food	Dr. Laxmi Annatha narayan
14.	M. Tech. Food Engg. and Tech.	Tripti Pande	Replacement of Dhoya in Dairy Confectionery	Professor S. S. Lele
15.	M. Tech. Food Engg. and Tech.	Mahesh Kharat	To study about formation of Benzene in Indian traditional food & waste to mitigate them.	Professor Rekha Singhal
16.	M.Tech. Food Biotech.	S. Chaitanaya Krishna	Studies in Plasma processing	Dr.U.S. Annapure

17.	M.Tech Oils, Oleochemicals and surfactants Tech.	Gorle Pravin Narayanrao	Studies in Amphoteric surfactants	Dr. Amit Pratap
18.	M.Tech Oils, Oleochemicals and surfactants Tech.	Dhumal Trupti Dhanraj	Studies of peduculisis	Dr. J.P Waghmare
19.	M.Tech Oils, Oleochemicals and surfactants Tech.	Chavan Ravindra Prakash	Studies of Sulphonation & Sulphation Reaction	Dr. Amit Pratap
20.	M.Tech Oils, Oleochemicals and surfactants Tech.	Wanjari Nikita Sunil	Exteration of anti oxidant from waste	Dr. J. S Waghmare
21.	M. Tech. Pharmaceutical Sci. and Tech.	Dolas Atul Jankiran	Kinetic study of cataysed reaction	Professor K. G. Akamanchi
22.	M. Tech. Pharmaceutical Sci. and Tech.	Shinde Abhijit Fulchand	Newer methods in flurination reaction	Dr. M.S. Degani
23.	M. Tech. Pharmaceutical Sci. and Tech.	Lanjewal Nikhil Namdeo	Tudalafil: Nanoformulation on approach for improving bioavailability and solubility	Professor P.R.Vavia
24.	M. Tech. Pharmaceutical Sci. and Tech.	Shete Rahul Tatyarao	Dissolution enhancement of drug Artemether by using solid dispersion Technique.	Dr. P.D. Amin
25.	M. Tech. Polymer Engg.	Pal Amarjeet Arjun	Study the stability of super absorbent polymer	Dr. V.V. Shertukde
26.	M. Tech. Polymer Engg.	Praharaj B. Manoj	Polymer nanofiber composites for natural gas piping application	Professor P.A. Mahanwar
27.	M. Tech. Polymer Engg.	Hajgude Ajay	Enhancement in toughninng by using reclaim rubber	Dr. S.T.Mhaske
28.	M. Tech. Polymer Engg.	Arakh Amar Ashok	Enhancement in toughening of plastics with reclaim rubber	Dr. S.T.Mhaske
29.	M. Tech. Polymer Engg.	Mr. Tarade Rohit	Surface modification of P.E. for waterbase in painting	Dr. V. V. Shertukde
30.	M. Tech. Polymer Engg.	Avinash V. Khandagale	Recent development in thermoclassic vulcanizates in automotive application	Dr. S.T.Mhaske
31.	M. Tech. Surface Engg.	Wazarkar Kunal Dattatray	Synthesis and Characterization of flame retardant coatings	Dr. A.S.Sabnis
32.	M. Tech. Surface Engg.	Jamdar Vandana Sahayog	Synthesis and Characterization of condensation polymers for surface coatings applications	Dr. A.S.Sabnis
33.	M. Tech. Surface Engg.	Pache Ruchika Dhanraj	Synthesis of phthalte free plasticizers using Karanja oil and Rice bran oil via green chemistry and its application for PVC particulate composites	Professor P.A. Mahanwar
34.	M. Tech. Surface Engg.	Miss Prachi Karanjkar	Impact VeoVa based binders for dirt pick up resistance paints	Professor R.N. Jagtap
35.	M.E. (Plastic) General Engg.	Patil Sharad Vasant	Tool development for injection moulding	Dr. S. P. Deshmukh

36.	M.E. (Plastic) General Engg.	Kute Sumit Shambhaji	Plastic product design of automotive component	Dr. V. R. Gawal
37.	M.E. (Plastic) General Engg.	Patil Priyanaka Vilas	To study HDPE & EVA blend	Dr. A.C.Rao
38.	M.E. (Plastic) General Engg.	Choudhari Vijendra Rajindra	Injection moulding process line development program (R&D)	Dr. R. S. Sahai
39.	M.Tech. Bioprocess Technology	Konnur Sushant Jagannath	Granulation of jaggery	Professor B.N.Thorat
40.	M.Tech. Bioprocess Technology	Lodha Saurabh Dineshkumar	Reaction kinetics of lipse mediated reaction	Dr. Annamma
41.	M.Tech. Bioprocess Technology	Bakuhandi Shradha Sunil	Designing & evaluation of SERUM free media for cell cultured	Dr. S. B. Kale
42.	M.Tech. Bioprocess Technology	Tijore Kiran Ashok	Effect of co2 on growth and lipid/oil content in microalgae.	Dr. Reena Pandit
43.	M . Tech. Green Technology	Tated Sumit Pravin	Zein protein based nanocomposites films	Dr. A. S. Sabnis
44.	M . Tech. Green Technology	Nadar Shamraja Selwadasan	Studies in Enzyme Modifications	Dr. V. K. Rathod
45.	M . Tech. Green Technology	Rohra Nanda Manoharlal	Sustainable utilization of wastewater streams for biomass propagation for biofuel production	Dr. Reena Pandit
46.	M. Tech. Green Techology	Nhivekar Girish Sunil	Studies in Enzyme applications	Dr. V. K. Rathod
47.	M. Tech. Perfumery and Flavour Technology	Shaikh Ahmed Raza Mubarak	Studies in carbonyl compounds & use of formic acid as reducing agent for the synthesis of aroma chemicals	Dr. G.S. Shankarling
48.	M. Tech. Perfumery and Flavour Technology	Tomke Prerana Dnyanoba	Green synthesis of flavor enzyne catalysed synthesis of flavor	Dr. V. K. Rathod
49.	M. Tech. Perfumery and Flavour Technology	Deshmukh Ashwini Rajabhau	Enzyne catalysed synthesis of flavor	Dr. V. K. Rathod

RAs (Ph.D.s) (2013-14)

Sr.	Department	Name of Candidate	Degree	Project Title	Project Guide	Category
1	Department of Physics	Mr.Sandeep Padmakar Jape	Ph.D (Sci)	Studies of Crystallization kinetics in thermoplastic/ thermotropic liquid crystalline polymer blends	Dr.(Mrs) V. D. Deshpande	Open
2	Department of Food Engineering & Technology	Ms.Supriya Hemchandra Raut	Ph.D(Sci)	Studies in Carbonate Precipitating and Degrading Microorganisms in Materials	Professor S. S. Lele	Open

3	Department of General Engineering	Mr.Vikramsinha Sarjerao Korpale	Ph.D (Tech.)	Coal fuel efficiency improvement through design and development of solar energy assisted dryer for Commercial Thermal Power Generation	Dr. S. P. Deshmukh	NT-C
4	Department of Dyestuff Technology	Mr. Manoj Madhukar Jadhav	Ph. D (Sci)	Synthesis of Novel Colorants for Dye Sensitized Solar Cells	Professor N. Sekar	OBC
5	Department of Fibre & Textile Processing Technology	Trupti Iranna Sutar	Ph. D (Sci)	Studies in Blood Clotting Materials	Dr. R. V. Adivarekar	OBC
6	Department of Dyestuff Technology	Milind Rajendra Shreykar	Ph.D(Tech.)	Synthesis of Novel Red Emitting Coumarin & ESIPT Dyes for Functional Application	Dr. N. Sekar	SC
7	Department of Mathematics	Mr. Srimant Maji	Ph.D(Sci)	Computational Fluid Dynamics	Dr. A. K. Sahu	Open
8	Department of Dyestuff Technology	Pravin Nimba Borase	Ph.D(Sci)	Synthesis of novel heterocyclic colorants and supramolecular host for high tech applications.	Dr. G. S. Shankarling	OBC
9	Department of Dyestuff Technology	Ms. Rajkumari Vijilata Devi	Ph.D(Sci)	Synthesis of natural products	Professor P. M. Bhate	Open
10	Department of Chemistry	Prateek Jain	Ph. D (Sci)	Synthesis & application of Metal Oxide catalysts for Organic synthesis	Dr. S. D. Samant	Open
11	Department of Chemical Engineering	Jitendra Govind Tongaonkar	Ph.D (Tech.)	Studies in interfacial science : Dynamics and stabilization of foam	Professor S. S. Bhagwat	Open

Undergraduate Research Summer Trainees Supported by TEQIP in 2013-14

Sr.	Name of the Student	Department	Research project	Project Guide
1	Ankita Mukhtyar	Department of Chemical Technology	Solubility of soap in hydrotrope solution	Professor V. G. Gaikar
2	Deep Sunil Chhichhia	Department of Chemical Technology	Ultrasound assisted antisolvent crystallization of benzoic acid and review paper on cooling crystallization	Professor 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	Professor A. B. Pandit
5	Ankit Deepak Kanthe	Department of Chemical Technology	Synthesis of multifunctional catalysts for green synthesis	Professor G. D. YADAV
6	Maahir Arora	Department of Chemical Technology	Study of the rate of co2 absorption in amine using a stirred reactor	Professor 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	Professor 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 characterization	Dr. P R Nemade
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	Professor 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.	Professor A. M. Lali, Dr. Annamma Anil
18	Sanjana Vijay Karpe	Department of Chemical Technology	Study of cascade engineered reactions	Professor 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	Professor A.B. Pandit
26	Tejal V. Sawant	Department of Chemical Technology	Wastewater treatment by cavitation	Dr. P. R.Gogate
27	Ujjval 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	Professor 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 grapes	Dr. S.M. Sontakke
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	Professor 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 Technology	Study on the synthesis of biolubricant based on renewable source.	Dr. Amit Pratap
46	Aishwarya Bannagare			
47	Kaustubh Rane			
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 combinationation & 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	Professor M. S. Degani
55	Vimisha Dharamdasani	Department of Pharmaceutical Sciences & Technology	Development of poly(d, l- lactide-co-glycolide) nanoparticles for protien 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	Professor P. V. Devarajan
59	Sonalika Arup Bhattaccharjee	Department of Pharmaceutical Sciences & Technology	Preparation and characterization of an ophthalmic microemulsion gel of azithromycin	Professor P. V. Devarajan
60	Neil Chavan	Department of Polymer Science & Technology	Synthesis of nanocomposites of co-polymer of aniline & orthoanisidine & tio2	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 & Technology	Coreshell of baso4 & tio2 nanoparticles	Dr. S. T. Mhaske
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	Professor R. N. Jagtap
68	Vaibhav Edlabadkar			

Qualification Improvement for Staff Members (2013-14)

Sr.	Duration	Department	Staff Name	Objective	Training Institute
1	Session I: 18-19, Session II: 20-21, Session III:23-24 June 2014	Department of Pharmaceutical Sciences & Technology	Non-Teaching staff from all over ICT(106 Participants)	Methods for self motivation, Understanding stress, Tips for tackling stress-(Yoga, praanaayaam, meditation, alternate therapies like reflexology, etc.)	Mrs. Lakshmi Raju, (Private Trainer)
2	1Year from 31st January, 2014	Department of Chemical Engineering	Mr. S. M. Mane	Payment of PhD fees for year 2013-14 under non teaching staff devlopment program	ICT, Chem Engg. Dept
3	6 months from 12th August, 2013	Department of Dyestuff Technology	Mr. H.R. Fegade	Learn MS Office 2010(Advance)	Saitech Computer, Dombivali(E)
4	Jan 2014- Dec 2014	Department of Food Engineering & Technology	Mrs. Sagrika S. Jadhav	To manage stores more efficiently & effectively	Welingkar School
5	One Year from 22nd July, 2013	Department of Chemistry	Mr. Prabhakar S. Gaikwad	To learn new softwares which will be very much helpful in the processing of Dept. work	BBC Infotech
6	8th July, 2013	Department of Fibres & Textile Processing Technology	Mr. Nilkantha J.Rajam	To enhance the self skills in particular field to get knowledge for Institutional Advantage	YashwantRao Chevan Maharashtra Open Industrial Engg. Institute Thane certification course
7	20th July, 2013	Department of General Engineering	Dr. S. P. Deshmukh	To gain knowledge of energy conservation	Renewable Energy & Energy Conservation Applications in University Campus
8	20th July, 2013	Department of General Engineering	Milind Talathi	To gain knowledge of energy conservation	Renewable Energy & Energy Conservation Applications in University Campus
9	20th July, 2013	Department of General Engineering	Prakash Jadhav	To gain knowledge of energy conservation	Renewable Energy & Energy Conservation Applications in University Campus

10	104Hrs from 1st August 2013	Department of General Engineering	Mr. B.R. Budhawale	To develop auto CAD based drawings on capabilities	ICON CAD EDUCATION A-204, Om Rachana Bldg, Sector - 17, Near Apana Bazar, Vashi, Navi Mumbai 400705
11	3-4 Months (2hrs daily) from 1st August 2013	Department of General Engineering	Mr. P.S.Wale	To develop English Speaking Capabilities	My Speaking School 2nd floor, Borgaonkar Complex, Near Kalyan Bus Depot., Kalyan(w)
12	24th & 25th Sept, 2013	Department of General Engineering	Mr. Milind M Talathi	To expose project engineer to latest knowledge of rehabilitation & retrofiting	IIT Bombay, FICCI & ASTR
13	2Months from 21st Oct, 2013	Department of General Engineering	Mr. Vivekanand Bhaskar Gorule	To expose support staff toAuto CAD, Computer aided drawing	Government Polytechnic, Mumbai
14	2Months from 21st Oct, 2013	Department of General Engineering	Mr. Prakash Ganpat Jadhav	To expose support staff to CCTV, HVAC, Fire protection, PA system	Government Polytechnic, Mumbai
15	6Months from 15th Oct, 2013	Department of Oils,Oleochemicals and Surfactant Technology	Dr. Arun B. Jogi	C, C++ to know about - softwares of various instruments	M/s. Aptech Computer Education
16	One Year from 20th August, 2013	Department of Pharmaceutical Sciences & Technology	Mrs. Anita Vivek Bankar	To enhance career development	Welingkar School
17	1Year from 20th August, 2013	Department of Pharmaceutical Sciences & Technology	Mrs. Mithila Manoj Sardar	To enhance career development	Welingkar School
19	6 months from 8th August, 2013	Department of Pharmaceutical Sciences & Technology	Mr. Hemanta Kumar G. Sahoo	To learn in computer hardware & networking system	NIIT Badlapur
20	4Years from 8th August, 2013	Department of Polymer & Surface Engineering	Dyandeep R. Kadam	Complete my B.tech in electronics & Teleco. It will help me in development work	YES Education - Karnataka State Open university
21	1Year from 26th August, 2013	Information Processing Center (IPC)	Rajendra Sheshrao Maske	To enhance the self skills in particular field to get knowledge for Institutional Advantage	Seed Infotech
22	9Months from 21st Oct, 2013	Information Processing Center (IPC)	Abhishek P. Ghadi	MCSE(Microsoft Certified System Expert)	Ms. IP Solutions (Dadar)
23	19th Aug to 23rd Aug, 2013	Library	Ms. Vanita S. Homal	To learn Library Automation & Networking	NISCAIR, New Delhi

24	19th Aug to 23rd Aug, 2013	Library	Priti Pandurang Sawant	To learn Library Automation & Networking	NISCAIR, New Delhi
25	19th Aug to 23rd Aug, 2013	Library	Mr. Vignesh U. Dalvi	To learn Library Automation & Networking	NISCAIR, New Delhi
26	One Year from 20th August, 2013	Stores Department	Miss. Smita S. Waghmare	To enhance career development	Welingkar School
27	One year from 13th August, 2013	TEQIP	Sachin B. Kadam	To knew principles of Management to do office work effectively	Welingkar School
28	1year from 4th August, 2013	TEQIP	Sachin B. Kadam	To enhance qualification for the development of myself & aid in the department	YCMO
29	1year from 8th August, 2013	Academic Section	Ganesh D.Chiman	To enhance qualification for the development of myself & aid in the department	Relavant Management system. Karnataka State Open university
30	6Months from 15th Oct, 2013	Academic Section	Bhagyashri Joshi	To improve the skills in Database Management System	NIIT, Dadar
31	6Months from 15th Oct, 2013	Academic Section	Abhishek B. Rane	To improve the skills in Database Management System	NIIT, Dadar
32	6Months from 15th Oct, 2013	Academic Section	Santosh Vishnu Pawar	To improve the skills in Database Management System	NIIT, Dadar
33	6Months from 15th Oct, 2013	Academic Section	Vijay Anant Mulam	To improve the skills in Database Management System	NIIT, Dadar

List of Staff Members sent for workshop on 'Stress Management & Motivation' Conducted at ICT

Staff Member List					
1	Dr. Ravindra V. Sawant	32	Ms. Sanghamitra A. Bhavsar (VC Office)	63	Mr. Ashish M. Sathye (Adm)
2	Mr. Jiten S. Jadhav	33	Mrs. Rekha S. Patil (VC Office)	64	Mrs. Bhavana S. Jadhav (Adm.)
3	Mr. Hemanta G. Sahoo	34	Mr. Shailesh A. Dombale (Account)	65	Mrs. Priti P. Sawant (Library)
4	Mrs. Anita V. Bankar	35	Mr. Sandeep A. Udmale (Account)	66	Mr. Jitendra S. Pawar (Library)
5	Mr. Manveer M. Rana	36	Ms. Swapna P. Mohite (Academic)	67	Mr. Ramchandra V. Malusare(Library)
6	Mrs. Mithila M. Sardar	37	Mr. Anil P. Yadav (Academic)	68	Ms. Urmila K. Sathe (Chem. Engg.)
7	Mr. Mahendra T. Kudekar	38	Mrs. Anju D. Kandari (Academic)	69	Mr. Mahesh S. Haskar (Chem. Engg.)

8	Mr. Santosh D. Chile	39	Mr. Vilas G. Phalke (Textile)	70	Miss. Patil S. Dasharath (Chem. Engg.)
9	Mr. Krishna B. Dhengale	40	Mr. Jyotisingh I. Rana (Textile)	71	Mr. Lalit Eknath Sawant (Chem. Engg.)
10	Mr. Kiran T. Chaudhari	41	Mr. Prabhakar S. Gaikwad (Chemistry)	72	Mr. Patil J. Kachru (Chem. Engg.)
11	Mr. Sunil N. Jadhav	42	Mr. Suresh B. Khapne (Chemistry)	73	Mr. Rupesh T. Alim (Chem. Engg.)
12	Ms. Rekha S. Khatal	43	Mr. Bhiva R. Rawool (Chemistry)	74	Mr. Parag P. Bhatade (Chem. Engg.)
13	Mr. Yogesh C. Borade	44	Mr. Yogesh D. Raut (IPC)	75	Mr. Suhas R. Chile (Chem. Engg.)
14	Mrs. Sadhana V. Dingankar	45	Mr. Abhishek Ghade (IPC)	76	Mr. Ramesh L. Kalambate (Oil Dept.)
15	Mr. Vaibhav V. Jadhav	46	Mr. Ashok S. Jadiyar (Library)	77	Mr. Sudhir D. Mahadik (Oil Dept.)
16	Mr. K. D. Gavtade	47	Mr. Sharad S. Shende (Library)	78	Mr. Vishal T. Kurade (Oil Dept.)
17	Mrs. Mugdha M. Amberkar (Stores)	48	Mr. Dinesh A. Bhosale (Library)	79	Mr. Arun B. Jogi (Oil Dept.)
18	Ms. Smita S. Waghmare (Stores)	49	Ms. Vanita S. Howal (Library)	80	Ms. Sayli D. Sawant (Exam Sect.)
19	Mrs. Mansi M. More (Stores)	50	Mrs. Lalita H. Chauhan (Adm.)	81	Mrs. Urvashi A. Vangara (Exam Sect.)
20	Ms. Sangeeta R. Dhakne (Food Dept.)	51	Mr. Vinyak Ghag (Adm.)	82	Mr. Vinay K. Sakpal (Exam Sect.)
21	Mr. Rohan R. Yadav (Food Dept.)	52	Ms. Namrata S. Kargutkar (Chem. Engg.)	83	Mrs. Bhagyashri M. Joshi (Exam Sect.)
22	Mr. Rushikesh K. Bhosale (Food Dept.)	53	Mrs. Poonam V. Khachane (Chem. Engg.)	84	Mr. Vijay A. Mulam (Exam Sect.)
23	Mr. Sandeep V. Raghatwan (Account)	54	Mrs. Ranjana M. Pillai (Chem. Engg.)	85	Mr. Ankush P. Ghadge (Textile)
24	Mr. Vikram S. Kurade (Account)	55	Mrs. Supriya D. Yavali (Chem. Engg.)	86	Mr. Prakash Khot (Textile)
25	Mr. Vaibhav N. Valkunde (Account)	56	Mr. Julal P. Gavhane(Chem. Engg.)	87	Mr. Sachin RahandAle (IPC)
26	Mr. Prabhakar S. Gaikwad (Chemistry Dept.)	57	Miss. Amita A. Chavan (Chem. Engg.)	88	Mr. Rajendra Kamble (IPC)
27	Ms. Sangita Golatkar (VC Office)	58	Mr. Uttam S. Yadav (Chem. Engg.)	89	Mrs. Madhuri M. Dicholkar (IPC)
28	Mrs. Anushka A. Bhandare (VC Office)	59	Mr. Avadhut G. Prabhu (Chem. Engg.)	90	Mr. Sainath Mhatre (IPC)
29	Mrs. Reema R. Sawant(Academic)	60	Mr. Suyog Patil (Chem. Engg.)	91	Mr. Suresh K. Hasaye (PPV Dept.)
30	Ms. Rupali R. Rane (Academic)	61	Mr. Ajay V. Jadhav (Oil Dept.)	92	Ms. Priyanka J. Sarang (Exam Sect.)
31	Mrs. Vishakha M. Patil (Oil Dept.)	62	Mrs. Shubhangi S. Jadhav (Oil Dept.)	93	Mrs. Amruta G. Mayekar (Oil Dept.)

List of Staff Members sent for English Speaking Training course Conducted at ICT (18th Nov. 2013 to 31st March 2014)

Sr.	Name	Department	Sr.	Name	Department
1	Asha Bhangre	Academic	81	Sharad Shende	Library
2	Anju Kanduri	Academic	82	Jitendra Powar	Library
3	Namrata Kachway	Academic	83	Dipesh Bhosle	Library
4	Rupali Rane	Academic	84	Ganesh Kadam	Library
5	Pradeep Parab	Academic	85	Sunil Keni	Library
6	Ganesh Masale	Academic	86	Vignesh Dalvi	Library
7	Yogeshwar Tondalekar	Academic	87	Vanita Howal	Library
8	Priyanka Sarang	Academic	88	Ashok Jadiyar	Library
9	Sayli Sawant	Academic	89	Priti Sawant	Library
10	Santosh Pawar	Academic	90	Bhaskar Mali	Mali
11	Sonal Shinde	Academic	91	Shailesh Kadam	Mali
12	Shrutika Bhosale	Academic	92	Prakash Name	Mali
13	Shekhar Phawade	Academic	93	Srikant Todankar	Mali
14	Anil Yadav	Academic	94	Ganesh Dait	Mali
15	Sapna Mohite	Academic	95	Sachin Sawant	Mali
16	Urvashi Vanjara	Academic	96	Rahul Sagare	Mathematics
17	Abhishek Rane	Academic	97	Rakesh Shirsat	Mathematics
18	Radhika Gunjal	Academic	98	Ajay Jadhav	Oils, Oleochemicals & Surfactants Technology
19	Bhagyashree Joshi	Academic	99	Arun Jogi	Oils, Oleochemicals & Surfactants Technology
20	Vijay Mulam	Academic	100	Vishakha Patil	Oils, Oleochemicals & Surfactants Technology
21	Rajni Raut	Accounts	101	Sachin Dhadve	Oils, Oleochemicals & Surfactants Technology
22	Supriya Mayekar	Accounts	102	Vishal Kurade	Oils, Oleochemicals & Surfactants Technology
23	Swati Patade	Accounts	103	Sudhir Mahadik	Oils, Oleochemicals & Surfactants Technology
24	Mahesh Patil	Accounts	104	Amruta Mayekar	Oils, Oleochemicals & Surfactants Technology
25	Shailesh Dombale	Accounts	105	Shubhangi Jadhav	Oils, Oleochemicals & Surfactants Technology
26	Vaibhav Valkunde	Accounts	106	Jitendra Jadhav	Pharmaceutical Sciences & Technology
27	Sunil Chandiwade	Accounts	107	Krishna Dengle	Pharmaceutical Sciences & Technology
28	Vikram Kurade	Accounts	108	Sunil Jadhav	Pharmaceutical Sciences & Technology
29	Manisha Varadkar	Accounts	109	Yogesh Borade	Pharmaceutical Sciences & Technology
30	Sandeep Udmale	Accounts	110	Anita Bankar	Pharmaceutical Sciences & Technology
31	Bharat Dingankar	Accounts	111	Hemanta Sahoo	Pharmaceutical Sciences & Technology
32	Smita Kinjale	Accounts	112	Yuvraj Waghmare	Physics

33	Datta Kamble	Admin	113	Chetan Solanki	Physics
34	Vinayak Ghag	Admin	114	Suraj Pawar	Physics
35	Anil Salvi	Admin	115	Pradeep Nikam	Physics
36	Narendra Patil	Admin	116	Amar Mhaskar	Physics
37	Janardan Mandavkar	Admin	117	Milind Thorat	Physics
38	Praveen Kharat	Admin	118	Bikaji Satardekar	Polymer & Surface Coating
39	Naresh Paradkar	Admin	119	Sanjay Gharat	Polymer & Surface Coating
40	Shankar Jagale	Admin	120	Supriya Pawar	Polymer & Surface Coating
41	Nandkumar Lakhan	Admin	121	Radhika Gurav	Polymer & Surface Coating
42	Gaurav Sonawane	Admin	122	M A Ansari	Polymer & Surface Coating
43	Sharaddha Shelar	Admin	123	Suresh Hasaye	Polymer & Surface Coating
44	Lalita Chavan	Admin	124	Chandrakant Kumbhar	Polymer & Surface Coating
45	Vinayak Matal	Admin	125	Prakash Patkare	Polymer & Surface Coating
46	Avadhut Prabhu	Chemical Engineering	126	Deepak Karande	Polymer & Surface Coating
47	Suyog Patil	Chemical Engineering	127	Anil Dicholkar	Polymer & Surface Coating
48	Rupesh Alim	Chemical Engineering	128	Dnyandeep Kadam	Polymer & Surface Coating
49	Amita Chavan	Chemical Engineering	129	Adam Khan	Security
50	Uttam Yadav	Chemical Engineering	130	Ravichandra Rana	Security
51	Namrta Kargutkar	Chemical Engineering	131	Mansi More	Stores
52	Poonam Khachane	Chemical Engineering	132	Smita Waghmare	Stores
53	Umesh Paralkar	Chemical Engineering	133	Mugdha Amberkar	Stores
54	Urmila Sathe	Chemical Engineering	134	Ganesh Chiman	TEQIP Office
55	Satish Mane	Chemical Engineering	135	Sachin Wadikar	Teqip Office
56	Lalit Sawant	Chemical Engineering	136	Pooja Demblani	Teqip Office
57	Vishal Bhambid	Chemical Engineering	137	Sachin Kadam	Teqip Office
58	Babaji Tilve	Chemistry	138	Yogesh Tetgure	VC office
59	Bhiva Rawool	Chemistry	139	Prashant Samudra	VC Office
60	Shefali Kadam	Dyestuff	140	Sangita Golatkar	VC office
61	Surendra Sonawane	Dyestuff	141	Anushka Bhandare	VC office

62	Subhash Jadhav	Eco cooker	142	Sanghamitra Bhavsar	VC office
63	Pranali Gurav	Fibre & Textile Technology	143	Rekha Patil	VC office
64	JyotiSingh Rana	Fibre & Textile Technology	144	Deepak Malusare	Workshop
65	Prakash Khot	Fibre & Textile Technology	145	Sanjay D Patel	Workshop
66	Ankush Ghadge	Fibre & Textile Technology	146	S D Vengurlekar	Workshop
67	Nilkanth Rajam	Fibre & Textile Technology	147	Jayant Ghag	Workshop
68	Vilas Phalke	Fibre & Textile Technology	148	Pradeep Poddar	Workshop
69	Pramila Pawar	Food Engineering & Technology	149	Leslie Nunis	Workshop
70	Rushikesh Bhosale	Food Engineering & Technologys	150	Prakash Chavan	Workshop
71	Chitra Koli	Food Engineering & Technologys	151	Bhagwan Budhavale	Workshop
72	Sangita Dhakne	Food Engineering & Technologys	152	Rajesh Dudhmal	Workshop
73	Sagirka Jadhav	Food Engineering & Technologys	153	Dhananjay Tajane	Workshop
74	Sainath Mahatre	Information Processing Centre	154	Shrikant Mane	Workshop
75	Rajendra Kamble	Information Processing Centre	155	Prashant Dalvi	Workshop
76	Abhishek Ghadi	Information Processing Centre	156	Bhimrao Bagul	Workshop
77	Yogesh Raut	Information Processing Centre	157	Vivek Gorule	Workshop
78	Wahid Khan	Library	158	Shailendra Shirgaonkar	Workshop
79	Pradip Gurav	Library	159	Prakash Jadhav	Workshop
80	Ramchandra Malusare	Library	160	Nehal Solanki	Workshop

List of Industry Persons invited for Expert Lectures (2013-14)

Sr.	Date	Month	Department	Activity	Industry Expert Invited For Guest Lecture	Designation of Industry Speaker & Industry Name	Objective	Beneficiaries
1	18-Dec-13	December	Department of Chemical Engineering	Industry Institute Interaction	Dr. Indraneel Chatterjee	Promoter Director of Vidyan Biocommerce Limited	Lecture or Material & energy balance	M.Sc. (Chemistry)
2	16-01-14	January	Department of Chemical Engineering	Guest Lecture	K P J Williams	Sales Manager at Renishaw plc in UK	Departmental Lecture series	Industrial Interaction

3	23-09-13	September	Department of Chemical Engineering	Guest Lecture	Lakshmi Venkatesh	Deputy General Manager Process at Petrofac Engineering India Ltd.	Lecture on lead process engineer on number of projects ranging from petrochemicals/ refinery and oil & gas to food/fine chemicals & one full day lecture on Hazop	Final Year CE Students
4	20-03-14	March	Department Of Chemical Engineering	Guest Lecture	Ms. Kiran Golwalkar	Consulting Chemical Engineer & ex-visiting faculty in Visvesvaraya National Institute of Technology, Nagpur	Guest lecture "Safety Management & project Management in the chemical Industry"	Final Year B.Chem, Engg. Students
5	26-08-13	August	Department of Food Engineering & Technology	Enhanced Interaction with Industry	Dr. S. K. Samant	Vice President at R&D Choc & Tech Services	To familiarize students with advances in Coco & chocolate processing	M.Tech. Students (Food engineering & Technology)
6	17-10-13	Oct	Department of Food Engineering & Technology	Lecture for M.Tech(FET) Students	Dr. Hormaz Patva	Sensient India Pvt. Ltd. As Technical Manager	To familiarize students with industrial aspects of food processing	M.Tech students of FETD
7	18-01-2014 to 31-01-2014	January	Department of Food Engineering & Technology	Guest Lecture	Dr. Hormaz Patva	Sensient India Pvt. Ltd. As Technical Manager	To familiarize students with topics of practical of industrial relevance from an expert working in the industry	17 Studentsof second year B.Tech (Food Engg. +Tech)
8	20-01-2014 to 31-01-2014	January	Department of Food Engineering & Technology	Guest Lecture	Dr. Hormaz Patva	Sensient India Pvt. Ltd. As Technical Manager	To familiarize students with topics of practical of industrial relevance from an expert working in the industry	17 Studentsof second year B.Tech (Food Engg. +Tech)
9	22-01-2014 to 31-03-2014	January	Department of Food Engineering & Technology	Guest Lecture	Dr. Joseph I Lewis	Scientific Panel Member Labelling and member on various experts groups in Food Safety & Standards Authority of India.	To invite an authority on food regularities as a visiting faculty for one of the courses of B.Tech	B.Tech (Food Enff + Tech)--Final Year
10	20-02-14	February	Department of Food Engineering & Technology	Guest Lecture	Dr. Joseph I Lewis	Scientific Panel Member Labelling and member on various experts groups in Food Safety & Standards Authority of India.	Knowledge on Food Waste Processing	B.tech & M.Tech Students (40 Students approx.)

11	12-02-14	February	Department of Food Engineering & Technology	Guest Lecture	Dr. Rashmi Kolhe	Chocolateiering from Berry Callebaute's - Chocolate Academy, Belgium	To conducting lecture(30-1 lecture +1 Tutorial) for sem VIII B.Tech Students(Food Science +Technology)	Final Year B.Tech Students
12	14-02-14	February	Department of Food Engineering & Technology	Industry Institute Interaction	Dr. Arun V. Natu	Free lance consultant under banner of "Environmental Protection Services"	Knowledge on Food Waste Processing	B.Tech & M.Tech Students (40 Students approx.)
13	21-02-14	April	Department of Food Engineering & Technology	Guest Lecture	Dr. P. N. Shastri	President in Apanga Mahila Bal Vikas Sanstha Blind School campus, Nagpur	To introduce the audience to opportunities for small entreprenueres in Traditional foods	Students of the department (Masters as well as PhD)
14	20-02-14	April	Department of Food Engineering & Technology	Guest Lecture	Professor K. Niranjan	Professor in University of Reading	To get an exposure on 'Advances in food engineering' from an authority in the subject	M.Tech (Food Engg Tech) Students of Sem II
15	08-07-13	July	Department of Chemical Technology	Industry - Institute Interaction	Dr. Ravi Mariwala	Director in Scientific Precision Pvt. Ltd.	Reimbursement for visiting faculty from Industry(July 2013)	Dr. Ravi Mariwala
16	18-02-14	February	Department of Chemistry	Guest Lecture	Dr. Milind Vaidya	Project manager in Capabilities F&LT	To conduct A perspective on technical careers for M.Tech & PhD Students of Green Tech	All M.Tech & PhD Students(Green Tech)
17	12-07-13	July	Department of Fibres & Textiles	Lecture by Institute Expert	Dr. Prasad Potluri	Reader in Textile Composites and Head of Textile Science & Engineering Group at University of Manchester	Information about Medical devices to Aerospace Materials: Research Opportunities for fibre Science & Textiles Tech	ICT faculty, Student & Alumni
18	26-08-13	August	Department of Fibres & Textiles	Guest Lecture	Dr. Pariti Siva Rama Kumar	Global Audit Manager in Sustainable Textile Solutions, DyStar	To enhance knowledge of students & industry participants in textile processing	Students, Industry Partners
19	04-01-13	January	Department of Fibres & Textiles	Public Lecture	Dr. Imtiyaz Ansari	Sheffield Hallam University	Beneficial for students and knowledge enhancement	Students of Textile dept & Industry Personnel

20	20-01-14	January	Department of Fibres & Textiles	Guest Lecture	Professor Sandra Downes	Professor of Biomaterial Sciences at 'School of Material Science, Manchester University' in UK.	To enhance knowledge on bio-materials & water remediation	Students, Industrial persons, Faculties
21	30-01-14	January	Department of Fibres & Textiles	Guest Lecture	Shirish S. Jogalekar	Sr. Lecturer at Moon Co. Hsg. Soc. Ashokvan, Borivali	Introducing a textile calculation	Student, Faculties, Industrial Persons
22	10- 31 October, 2013	October	Department of Food Engineering And Technology	Guest Lecture	Dr. Malathy Venkatesh	Stern ingredients(I) ltd.	To appraise students with development on use enzymes in food processing	Students of FETD - PG & Doctoral
23	25-08-13	August	Department of Food Engineering And Technology	Enhanced Interaction with Industry - Expenditure on Academic Networking with Industry	Dr. Joseph I Lewis	Scientific Panel Member Labelling and member on various experts groups in Food Safety & Standards Authority of India.	To conduct a course of 14lectures(2L*7) for M.Tech students	Students (9) of M.tech (Food Engg. Tech)
24	26-11-13	November	Department Of General Engineering	Guest Lecture	Dr. Mahendra B Parmar	Director of Polyblend Colour Concentrate	To enhance knowledge about Recycling of Plastic Waste	GE Department, Students of M.E. (Plastic)
25	20-11-13	November	Department Of General Engineering	Guest Lecture	Dr. Mahendra B Parmar	Director of Polyblend Colour Concentrate	To enhance knowledge about Recycling of Plastic Waste	GE Department, Students of M.E. (Plastic)
26	16-11-13	November	Department of General Engineering	Public Lecture	Kabra Gopal L	Manager-Busineess Development at Helvoet rubber & Plastic Technology, Pune	To expose students to "Techno commercial evolution of injection molded component	Faculty & M.E.(Plastic) Student
27	19-11-13	November	Department of Mathematics	Public Lecture on Six Sigma - A way of Life	Dr. Ramesh V.P.	Assitant Professor in School of Mathematics & Computer Science, Tamil Nadu	Public lecture on Six- Sigma	Students and faculties
28	19-11-13	November	Department of Mathematics	Public Lecture on Operation Research in Railways	Dr. Narayan Rangaraj	Professor in IIT, Bombay	Public Lecture on Operation Research in Railways	Students and faculties
29	25-11-13	November	Department of Mathematics	Public Lecture	Mr. Sachin M Dedhia	Cyber Security Lecture by Sachin Dedhia, Skynet Secure CyberNet, Mumbai	Public lecture on Cyber Security to make faculty and staffs aware of threats	Students & Faculty of ICT
30	12-02-13	December	Department of Mathematics	Public Lecture	Professor D. K Deshpande	Executive Director, HPCL Mumbai	Public Lecture on Disaster Management	Students, Faculty & Staffs

31	31-01-14	January	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Ms. Janetri Dave	Assistant managar At VVF(India) Ltd.	To deliver a lecture on Oleo-The building blocks of Versatile Chemicals	Students of Oils Department
32	31-01-14	January	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Dr. Amogh Joshi	Assitant Manager at VVF (India) Ltd.	To deliver a lecture on Oleochemicals scenario	Students of Oils Department
33	14-02-14	February	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Dr. Rajeev Churi	Managing Director, at Sarbi Group of Companies	To deliver a lecture on newer development and opportunities in lubricant Industry	Students of Oils Department
34	06-02-14	February	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Mr. Madhur Khandelwal	Managing Director, at Khandelwal Finvest Pvt. Ltd.	To deliver a lecture on overview on essential oils & Frangnances	Students of Oils Department
35	27-02-14	February	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Mr. Sanjay Asthana	Marketing Advisor in Wuerth, Germany	To deliver a lecture on "Recent Trends in Base Oil Industry"	Students of Oils Department
36	13-02-14	February	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Mr. Purushottam Madhukar Ozarkar	Balmer Lawrie & Co Ltd.	To deliver a lecture on "Lubricating greases-Technology Challenges"	Students of Oils Department
37	12-02-14	February	Department of Oils,Oleochemicals and Surfactant Technology	Guest Lecture	Mr. Suraj Shaha	Executive Business Development in Creative Industrial Estate	To deliver a lecture on ethoxylates, its applications & market Dynamics	Students of Oils Department
38	12-04-13	December	Department of Pharmaceutical Sciences and Technology	Lecture	Mohmad Farooq Shaikh	Lecturer – Neuroscience In Monash University	The adult zebrafish: A better model for antiepilepic Screening	All Research Students

Development programs attended by faculty (2013-14)
Qualification Improvement, Management Capacity Enhancement, Subject Knowledge Enhancement

Sr.	Duration	Department	Activity	Faculty Name	Objective	Beneficiaries	Institute
Management Building Capacity							
1	20-23 Feb, 2014	Department of Fibres and Textile Processing Technology	Faculty & Staff Development Programme	Professor S. R. Shukla, & Shri Sachin B. Kadam	Workshop on "Recruitment Rules & Reservation in Services"	ICT	Integrated Training & Policy Research
2	23 -27/ 09/ 2013	Department of Fibres and Textile Processing Technology	Management Capacity Enhancement	Professor S.R.Shukla	Manage stress and time at work	Professor S.R.Shukla	Jaipur Productivity Centre
3	12-14 June 2013	Department of Food Engineering And Technology	Management Capacity Enhancement	Professor S. S. Lele	Get Advance Traininjg by IIM	Professor S. S. Lele	IIM

4	23 -27/ 09/ 2013	Department of Food Engineering and Technology	Management Capacity Enhancement	Dr. U. S. Annapure	Manage stress and time at work	Dr. U.S.Annapure	Jaipur Productivity Centre
5	20-23 Feb, 2014	Department of Food Engineering And Technology	Faculty & Staff Development Programme	Dr. U. S. Annapure	Workshop on "Recruitment Rules & Reservation in Services"	ICT	Integrated Training & Policy Research
6	11-13 Feb 2014	Department of Food Engineering And Technology	Faculty Development Programme	Dr. Shalini S. Arya	To gain an understanding of documentation and calculations of various parameters read for NBA + NAAC Accreditation	Department as a whole	Engineering staff College of India
7	08-12 March 2014	Department of General Engineering	Management Capacity Enhancement	Dr. S. P. Deshmukh	To Attend 2nd WOSA(World Summit on Accreditation) 2014 at Hotel the Ashok Delhi	Training on Accreditation Techniques for Institute	National Board of Accreditation Delhi
8	27 May 2014	Department of General Engineering	Faculty Enhancement Activities	Dr. D. D. Sarode	To get training on Environment management framework	ICT, Mumbai	SFFU, Gujarat, NPIU
9	23 -27/ 09/ 2013	Department of Physics	Management Capacity Enhancement	Dr. R. R. Deshmukh	Manage stress and time at work	Dr. R. R. Deshmukh	Jaipur Productivity Centre
10	23 -27/ 09/ 2013	Library	Management Capacity Enhancement	Mr. Amogh Lokhande	Manage stress and time at work	Mr. Amogh Lokhande	Jaipur Productivity Centre
Pedagogical Training							
1	May 5 - 9 & May 23,24,28-30, 2014	DBT - ICT	Faculty Development	Dr. Annamma Anil	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
2	May 5 - 9 & May 23,24,28-30, 2014	DBT - ICT	Faculty Development	Dr. Gunjan Prakash	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
3	03-08 July 2014	DBT - ICT	Capacity Development of Faculty	Dr. Reena Pandit	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
4	03-08 July 2014	DBT - ICT	Capacity Development of Faculty	Dr. Pamela 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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
5	20-24/1/ 2014	Department of Chemical Engineering	Engineering Pedagogical Trainig Programme	Dr. Neetu Jha	Engineering Pedagogical Trainig Programme	Students	Shruth & Smith Foundation
6	23-27 June, 2014	Department of Chemical Engineering	Workshop onrganized by TEQIP cell of IIT-Kanpur "Mechanics in Physics"	Dr. Vishwanath H. Dalvi	Gain insights into teaching of physics and related fields. Invaluable for teaching and staying current as a researcher.	Dr. V. H. Dalvi	IIT Kanpur

7	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Vishwanath Dalvi	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
8	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Ashwin Patwardhan	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
9	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Vijay Kumar	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
10	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Prakash Vaidya	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
11	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Sachin Mathpati	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
12	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. V. K. Rathod	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
13	28-29 March, 2014	Department of Chemical Engineering	Pedagogy Training	Dr. Parag R. Nemade	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
14	May 5 - 9 & May 23,24,28-30, 2014	Department of Chemical Engineering	Faculty Development	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
15	May 5 - 9 & May 23,24,28-30, 2014	Department of Chemical Engineering	Faculty Development	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
16	May 5 - 9 & May 23,24,28-30, 2014	Department of Chemical Engineering	Faculty Development	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
17	03-08 July 2014	Department of Chemical Engineering	Capacity Development of Faculty	Dr. Sadhana Sathey	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
18	03-08 July 2014	Department of Chemical Engineering	Capacity Development 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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
19	03-08 July 2014	Department of Chemical Engineering	Capacity Development of Faculty	Dr. Parag Nemade	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer

20	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. Anant Kapadi	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
21	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. Shreaedha Tiwari	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
22	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. R. V. Jayram	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
23	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. Kaustubh Joshi	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
24	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. S. D. Samant	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
25	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. B. M. Bhanage	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
26	28-29 March, 2014	Department of Chemistry	Pedagogy Training	Dr. J. M. Nagarkar	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
27	21-24th Oct 2013	Department Of Chemistry	Faculty Development Programme	Dr. Kaustubh Joshi	Getting acquainted & trained with the process of setting up question papers in Olympiad mode	UG Students	Homi Bhabha Centre for Science Education, TIFR
28	21-24th Oct 2013	Department Of Chemistry	Faculty Development Programme	Dr. Shraeddha Tiwari	Getting acquainted & trained with the process of setting up question papers in Olympiad mode	UG Students	Homi Bhabha Centre for Science Education, TIFR
29	8-10th Nov. 2013	Department Of Chemistry	Faculty Development Programme	Professor R. V. Jayaram	National Seminar on Chemistry Education & Research & national convention of Chemistry Teachers	Research & PG Students	National Convention Of Chemistry Teachers (NCCT - 13)
30	28-29 March 2014	Department Of Chemistry	Conference	Professor S. D. Samant	To introduce teaching-learning modes to young faculty of ICT	Faculty & ICT	ICT
31	03-08 July 2014	Department of Chemistry	Capacity Development of Faculty	Professor Radha Jayaram	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
32	May 5 - 9 & May 23,24, 28-30, 2014	Department of Dyestuff Technology	Faculty Development	Professor N. Sekar	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
33	03-08 July 2014	Department of Dyestuff Technology	Capacity Development of Faculty	Professor Prakash Bhate	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
34	20-24/ 1/ 2014	Department of Dyestuff Technology	Engineering Pedagogical Trainig Programme	Dr. G. S. Shankarling	Engineering Pedagogical Trainig Programme	Students	Shruth & Smith Foundation

35	28-29 March, 2014	Department of Dyestuff Technology	Pedagogy Training	Dr. Prakash Bhate	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
36	28-29 March, 2014	Department of Dyestuff Technology	Pedagogy Training	Dr. N. Sekar	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
37	28-29 March, 2014	Department of Food Engineering & Technology	Pedagogy Training	Professor Rekha Singhal	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
38	28-29 March, 2014	Department of Food Engineering & Technology	Pedagogy Training	Dr. Shalini Arya	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
39	May 5 - 9 & May 23,24, 28-30, 2014	Department of Food Engineering & Technology	Faculty Development	Dr. Shalini Arya	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
40	03-08 July 2014	Department of Food Engineering & Technology	Capacity Development of Faculty	Dr. Smita Lele	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
41	03-08 July 2014	Department of Food Engineering & Technology	Capacity Development of Faculty	Dr. Jyoti Sontakke	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
42	03-08 July 2014	Department of General Engineering	Capacity Development of Faculty	Dr. Vivek Gaval	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
43	03-08 July 2014	Department of General Engineering	Capacity Development of Faculty	Dr. R. N. Sahai	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
44	03-08 July 2014	Department of General Engineering	Capacity Development of Faculty	Dr. Prerna Goswami	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
45	May 5 - 9 & May 23,24, 28-30, 2014	Department of Oils, Oleochemicals & Surfactants Technology	Faculty Development	Dr. Jyotsna Waghmare	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer

46	28-29 March, 2014	Department of Pharmaceutical Sciences & Technology	Pedagogy Training	Dr. A. R. Juvekar	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
47	28-29 March, 2014	Department of Pharmaceutical Sciences & Technology	Pedagogy Training	Dr. Prajakta Dandekar	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
48	28-29 March, 2014	Department of Pharmaceutical Sciences & Technology	Pedagogy Training	Dr. Ratnesh Jain	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT
49	May 5 - 9 & May 23,24, 28-30, 2014	Department of Pharmaceutical Sciences & Technology	Faculty Development	Dr. Prajakta 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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
50	May 5 - 9 & May 23,24, 28-30, 2014	Department of Pharmaceutical Sciences & Technology	Faculty Development	Professor Mariam Degani	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
51	May 5 - 9 & May 23,24, 28-30, 2014	Department of Pharmaceutical Sciences & Technology	Faculty Development	Professor Vandana Patravale	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
52	May 5 - 9 & May 23,24, 28-30, 2014	Department of Pharmaceutical Sciences & Technology	Faculty Development	Professor Padma Devarajan	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
53	03-08 July 2014	Department of Pharmaceutical Sciences & Technology	Capacity Development of Faculty	Dr. Sujit Jogwar	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
54	03-08 July 2014	Department of Pharmaceutical Sciences & Technology	Capacity Development of Faculty	Professor P.D.Amin	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
55	03-08 July 2014	Department of Pharmaceutical Sciences & Technology	Capacity Development of Faculty	Professor Archana Juvekar	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 stess.	ICT Faculty	Mrs. Lakshmi Raju, Private Trainer
56	28-29 March, 2014	Department of Physics	Pedagogy Training	Mr. Siddharath Kasturirangan	To introduce teaching-learning modes to young faculty of ICT	Faculty Members & Students	ICT

Faculty Ph. D							
1	3Years	Department of General Engineering	Enhancement for Qualification	Mrs. Prerna Goswami	To Upgrade the qualification by submitting Ph D thesis	Shri. M A Kerawalla, Institute and Students at large	VJTI
2	3Years	Department of General Engineering	Enhancement for Qualification	Mr. M.A.K. Kerawalla	To Upgrade the qualification by submitting Ph D thesis	Mr. M.A.K. Kerawalla, Faculty of General Engineering Department	VJTI
Subject Knowledge Enhancement							
1	25th & 26th Oct. 2013	DBT - ICT	Faculty Development Programme	Dr. Sandeep Kale	To organise workshop on advances in Bioprocess Technology	industry staff, academicians & Student of Bioprocess Technology	ICT
2	07-06-13	Department of Chemical Engineering	Enhancement for UG & research- Poster Presentation	Dr. P.R. Nemade	Poster Presentation arrangements for display of UG Research	C.E. Department	
3	07-08-13	Department of Chemical Engineering	Conference	Dr. Neetu Jha	Paper Presentation In a Conference on Advanced Nanomaterials & Engineering Technologies	Dr. Neetu Jha	Sathyabama University, Jeppiaar Nagar, Rajiv Gandhi Road, Chennai - 600119, Tamil Nadu, India
4	11-15th Nov. 2013	Department of Chemical Engineering	Faculty Development Programme	Dr. Prakash D. Vaidya	Participation in Faculty Development Program on Catalysis, Chemistry Research Centre, BIT & PPISR, Bangalore	Academia	Catalysis, Chemistry Research Centre, BIT & PPISR, Bangalore
5	21-22 Feb 2014	Department of Chemical Engineering	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	Faculty in the area of instrumentation & control	Department of Instrumentation & Control
6	11-12, April 2014	Department of Chemical Engineering	Faculty Development	Dr. C. S. Mathpati	Present proposal for funding to DAE(BRNS)	Dr. C. S. Mathpati	TPDM Mangalore University, Karnataka
7	11-12, April 2014	Department of Chemical Engineering	Faculty Development	Dr. P. R. Nemade	Present proposal for funding to DAE(BRNS)	Dr. P. R. Nemade	TPDM Mangalore University, Karnataka
8	8-12 July 2013	Department of Chemical Engineering	Faculty Enhancement Activities	Dr. V. H. Dalvi	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.	Dr. V. H. Dalvi	VJTI, Mumbai.
9	8-12 July 2013	Department of Chemical Engineering	Faculty Enhancement Activities	Dr. C. S. Mathapati	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.	Dr. C. S. Mathapati	VJTI, Mumbai.

10	11-13 Feb 2014	Department of Dyestuff	Faculty Development Programme	Professor N. Sekar	To understand a)The different initiatives taken by Govt of India for quality assuarance in Technical & higher education b)The latest outcome based systems of NBA based on 1000 point scale and conduct Self Assessment c)The Accreditation criteria of NAAC d)The different models of Quality in Technical & Higher education & application of Total Quality approach	ICT	Engineering staff College of India
11	11-13 Feb 2014	Department of Dyestuff	Faculty Development Programme	Dr. G. S. Shankarling	To enhance Research activities	Dyestuff Technology Department, ICT	Engineering staff College of India
12	11-13 March 2014	Department of Dyestuff	Faculty Development Programme	Professor N. Sekar	To enhance Research activities	Dyestuff Technology Department, ICT	JAMAL MOHAMED COLLEGE (Autonomous) Tiruchirappalu, India
13	05-07 March, 2014	Department of Fibres & Textile Processing Technology	Faculty Development Programme	Professor M. D. Teli	To under go training for faculty development for qualified Learning Systems	Department Faculty	Mr. Shiv Khera, Business Consultant, Qualified Learning Systems
14	05-07 March, 2014	Department of Fibres & Textile Processing Technology	Faculty Development Programme	Professor S. R.Shukla	To under go training for faculty development for qualified Learning Systems	Department Faculty	Mr. Shiv Khera, Business Consultant, Qualified Learning Systems
15	05-07 March, 2014	Department of Fibres & Textile Processing Technology	Faculty Development Programme	Dr. R. D. Kale	To under go training for faculty development for qualified Learning Systems	Department Faculty	Mr. Shiv Khera, Business Consultant, Qualified Learning Systems
16	Immediate	Department of Fibres & Textile Processing Technology	Research Activity	Professor S. R. Shukla	To study the Chemical Processing of Exi silk	Purchasing of Silk Fabric for Research work	Jharkhand Silk Textiles & Handicraft Dev. Cop. Ltd.
17	12-16 Dec 2013	Department of Fibres & Textile Processing Technology	Visit to Exhibition	Dr. R. D. Kale	To understand & see new technologies/product related to polymer	Faculty, Students & ICT	9th Plastivision India 2013 (International Plastic Trade Show)
18	29Nov- 5 Dec, 2013	Department of Food Engineering And Technology	Faculty & Staff Development Programme	Dr. Shalini S. Ary	To attend training on "Classical Biotechnology & Genomics for new & improved food products"	Dr. Shalini S. Ary	CAS-TWAS Centre of Excellence and The World Academy of Science (TWAS)
19	18-21 Dec 2013	Department of Food Engineering And Technology	Faculty Development Programme	Professor Rekha Singhal	To give an invited talk at an International conference(Organised once in 4 Years)	Community of Food Scientist + Technologists of language	CSIR-CFTRI(Central Food Technological Research Institute
20	2days	Department of General Engineering	Faculty Development Programme	Dr. D. D. Sarode	To expose project engineer to latest knowledge of rehabilitation and retrofitting	ICT for rehabilitation works	IIT Bombay, FICCI & ASTR

21	24th & 25th Sept	Department of General Engineering	Faculty Development Programme	Milind M Talathi	To expose project engineer to latest knowledge of rehabilitation and retrofitting	ICT for rehabilitation works	IIT Bombay, FICCI & ASTR
22	06-10 January, 2014	Department of General Engineering	Subject Knowledge Enhancement	Mrs. Prerna Goswami	One week workshop on Non-linear State Estimation	General Engineering Department, Students of ICT	VJTI
23	13-17 January, 2014	Department of General Engineering	Subject Knowledge Enhancement	Mrs. Prerna Goswami	One week workshop on smart grid: Perspectives in Cyber security	General Engineering Department, Students of ICT	VJTI
24	10-14 Feb 2014	Department of General Engineering	Subject Knowledge Enhancement	Dr. Dilip D. Sarode	To refresh and gain additional knowledge in Concrete, Networking with national and international experts in Concrete	ICT R & D, General Engineering Dept., Students of UG & PG	The Fourth International fib Congress 2014, Mumbai
25	22-28 Sept, 2013	Department of Mathematics	Faculty Development Programme	Dr. Ajit Kumar	Visiting IIT kanpur to collaborate with Professor Joydeep Dutta, Dept. of Maths, IIT Kanpur to collaborate on Optimization Techniques.	Ajit Kumar & Department of Mathematics	IIT Kanpur
26	14-15 Sept, 2013	Department of Oils, Oleochemicals & Surfactants Technology	Faculty Development Programme	Dr. Dipak Pinjari	Presentation at schemcon 2013	Dr. Dipak Pinjari	SCHEMCON 2013
27	30-09-13	Department of Oils, Oleochemicals & Surfactants Technology	Faculty & Staff Development	Professor P. M Bhate	To attend the workshop	ICT, Mumbai	National Vocational Education Qualification
28	7/9/2013 -11/ 9/ 2013	Department of Pharmaceutical Sciences & Technology	Participation as session chair at ERS, Annual Cong. 2013	Prajakta Dandekar Jain	Attend & Chair a session, Networking opportunity 2) Discussin with experts about my research on biotech. Molecules for respiratory infections, 3)Gain new knowledge to update teaching & research 4)Try to establish 6collaborations	GA New knowledge will be applied for teaching & research, Establish new collaborations	
29	6 Months	Department of Pharmaceutical Sciences & Technology	Faculty Development	Professor P. V. Devarajan	Training in FACS	Department of Pharmaceutical Sciences & Technology	Training at NIIH, Mumbai
34	2-6th December 2013	Department of Physics	Faculty Development Programme	Dr. R. R. Deshmukh	New trends in Nano technology & to learn advanced characterization techniques	Dr. R. R. Deshmukh & ICT Students	Department of Metallurgy and Materials Science
35	8-12 July 2013	Department of Physics	Faculty Enhancement Activities	Dr. R. R. Deshmukh	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.	Dr. R. R. Deshmukh	VJTI, Mumbai.
36	30th Sept - 3rd Oct, 2013	Department of Polymer and Surface Engineering	Technical paper presentation in International conference to be held in New Delhi	Dr. Anagha S. Sabnis	To present reseach paper in the International Conference 'CORCON'	Dr. Anagha S. Sabnis	CORCON

37	8-12 July 2013	Department of Polymer and Surface Engineering	Faculty Enhancement Activities	Dr. A. S. Sabnis	Introduction to CFD in Engineering Domain using Computing Softwares, at VJTI, Mumbai.	Dr. A. S. Sabnis	VJTI, Mumbai.

International Travel Supported by TEQIP of Faculty Members

Sr.	Month	Designation	Department	Name of Applicant	Activity	Amount
1	August, 2013	Professor	Department of Chemical Engg.	Professor Aniruddha. B. Pandit	International Travel Grant under TEQIP-II	1,58,047
2	July, 2013	Professor	Department of Fibre & Textile Processing Technology	Dr. Mangesh.D. Teli	International Travel Grant under TEQIP-II	1,28,273
3	August, 2013	Associate Professor cum Workshop Supdt.	Department of General Engg.	Dr. Suresh Pandurang Deshmukh	International Travel Grant under TEQIP-II	1,50,000
4	July, 2014	Assistant Professor	Department of General Engg.	Dr. Vivek R. Gaval	International Travel Grant under TEQIP-II	90,000
5	July, 2013	Assistant Professor	Department of Mathematics	Professor Ajit Kumar	International Travel Grant under TEQIP-II	37,431
6	Sept. , 2013	Assistant Professor	Department of Pharmaceutical Sciences & Technology	Dr. Prajakta Dandekar Jain	International Travel Grant under TEQIP-II	1,68,181
7	July, 2013	Assistant Professor	Department of Physics	Professor Sidhharth Kasthurirangan	International Travel Grant under TEQIP-II	64,704
8	July, 2014	Professor	Department of Polymer & Surface Coating	Professor P. A. Mahanwar	International Travel Grant under TEQIP-II	1,80,000
9	July, 2014	Assistant Professor	Department of Polymer & Surface Coating	Dr. Anagha Sabnis	International Travel Grant under TEQIP-II	88,356

List of Industry Visits of Students & Faculty

Sr.	Date	Department	Activity	Faculty Name	Objective	Beneficiaries	Industry Name
1	17-01-14	DBT-ICT	Industry Visit of M.Tech Bioprocess Technology student to ACPL, Jalna and Wokhardt, Aurangabad	Dr. S. B. Kale with Students of M.Tech Bioprocess Technology	To learn process eg. Extraction, centrifugation,mixing, purification which are operating at industrial scale	Students of M.tech Bioprocess Technology (34 Candidates)	Abhay Cotex Pvt. Ltd., Bhakti extraxction-Jalna, Geeta edible oil Refinery- Jalna, Wokhardt Ltd. Aurangabad
2	27-09-13	Department of Chemical Engineering	Industry Institute Interaction	Dr. Ravi Mariwala	Adjunct Professor impart instruction on plant utilities	Dr. Ravi Mariwala	ICT

3	26 to 28-10-2013	Department of Chemical Engineering	Industrial visit	Dr. P. R. Nemade, Dr. V. H. Dalvi & Dr. S. S. Jogwar	Organize industrial visit for final year B.Chem students to RCF students	Fianl Year Students(Total 40 students)	Rashtriya Chemicals and Fertilizers(RCF) Ltd., Mumbai
4	28-11-13	Department of Chemical Engineering	Industrial visit	Professor V. G. Gaikar	Inaugration of SABIC R & D Center and to Discuss potential Collaboration	Institute of Chemical Technology	SABIC TECHNOLOGY Center
5	31-01-14	Department of Chemical Engineering	Industry Institute Interaction	Professor V. G. Gaikar	To discuss with BPCL, research projects to be undertaken at ICT	Dept. Of Chem. Engg	Bharat Petroleum Corporation Ltd.
6	17-05-14	Department of Chemical Engineering	Industry Institute Interaction	Dr. Neetu Jha	Present proposal for funding to GAIL(India) Ltd.	Dr. Neetu Jha	GAIL Corporate Office, 6th Floor Board Room, 16 Bhikaji Cama Place, R.K.Puram, New Delhi.
7	17-05-14	Department of Chemical Engineering	Industry Institute Interaction	Dr. P. R. Nemade	Present proposal for funding to GAIL(India) Ltd.	Dr. P. R. Nemade	GAIL Corporate Office, 6th Floor Board Room, 16 Bhikaji Cama Place, R.K.Puram, New Delhi.
8	13-01-14	Department of Chemistry	Industrial Visit to RCF	M.Sc 1st Year & 2nd Year (Total 39 Students + 1 Faculty)	To make the students get an experience of industrial scenario	M.Sc. Students	Rashtriya Chemicals and Fertilizers(RCF) Ltd.
9	07-08-13	Department of Fibers & Textile Processing Technology	Enhanced Interaction with Industry	Professor M.D. Teli, Mr. Ravindra Adivarekar, Dr. Sujata Pariti, Dr. Ravindra Kale, Mr. Sushil Ajgaonkar, Professor Sanjeev Ramchandra Shukla	GAP Analysis of Ethiopion Textile Industry & University	Ethiopion Textile Industry & University	Ethioplanairlines
10	30-08-13	Department of Fibers & Textile Processing Technology	Enhanced Interaction with Industry	Professor M.D. Teli	Links with the Industry & Exchange of technological Advances	Textile Department	Textile Association of India(TAI) Indore
11	28-08-13	Department of Fibers & Textile Processing Technology	Enhanced Interaction with Industry	Professor R.V.Adivarekar, Professor M.D.Teli, Dr. S. Pariti	Meeting with SITRA's Director for development of Ethiopian Textile industry for joint project	ICT, Mumbai	SITRA Service for excellence
12	18-11-13	Department of Fibers & Textile Processing Technology	Industry Institute Interaction	Professor R. V Adivarekar, Dr. R. D. Kale, S. R. Shukla & Dr. Sujata Pariti	To explore the possibilities of research in the field of glass fibres	Industry & students	Taloja Plant
13	26-11-13	Department of Fibers & Textile Processing Technology	Industry Institute Interaction	Professor R. V Adivarekar, Dr. R. D. Kale & Dr. Sujata Pariti	To understand the requirement & project work discussion for Ink Jet Pvt. Tech	Textile Department	Huntsman
14	10-03-13	Department of Fibers & Textile Processing Technology	Industry Visit	Professor R. V Adivarekar, Dr. R. D. Kale & Dr. Sujata Pariti	Actual working of Textile wet processing at industrial level	M.Sc. Textile Chemistry students(22 Students & 3 faculties)	BSLSuitings

15	15-01-14	Department of Fibres & Textile Processing Technology	Seminar	Faculty & Students of ICT	To enhance knowledge of students in textile characterization methods	Students & faculty of ICT	Agilent Technologies
16	31-01-14	Department of Fibres & Textile Processing Technology	Industry Visit	Professor R. V Adivarekar, Dr. R. D. Kale, S. R. Shukla & Professor M. D. Teli & 25 PG(PHD + M.Tech) students	To visit Technical testing industry, to know about manufacturing process & product Development	Students & Faculty of the Textile Dept.	garware-Wall Ropes Ltd.
17	February	Department of Fibres & Textile Processing Technology	Industry Visit	Professor M.D. Teli + 25 Students from S. Y. B.Tech	To make students aware about the product & productions process of the Industries	S.Y.B.Tech Textile Students & Professor Teli	Ethoxyethers
18	13-02-14	Department of Fibres & Textile Processing Technology	Industry Visit	Professor M.D. Teli + 25 Students from S. Y. B.Tech	To visit the industry to learn about the Industrial Production Processes	S.Y.B.Tech Textile Students	Oswal F.M.Hammerle Textiles Ltd. Plot No. T-5/T-5 Part-1, Five Star MIDC, Kagal Kolhapur-416216, Maharashtra
19	04-03-14	Department of Fibres & Textile Processing Technology	Industry Visit	Dr. R. D. Kale & Dr. Sujata Paiti	To make student understand manufacturing of glass fibre	T.Y.B.Tech Textile, Students Dyes, Pharma & PG Textile students	Owens Corning India Pvt. Ltd.
20	22-10-13	Department of Food Engineering And Technology	Industry Institute Interaction	Dept. Of Foods	To showcase the qualifications of the students + their courses for placement in Industries	UG + PG Students seeking placement in Industry	Graphic Printers
21	06-01-14	Department of Food Engineering And Technology	Industrial Visit	25 Third B.Tech Year + Final Year Students	To visit the nestle of India at Ponda & to get a practical outlook to theory courses that the students have taken	Students of third+Final year B.Tech (Food Engg Tech)	Nestle Ponda Factory
22	10-04-13	Department of Food Engineering And Technology	Industry Institute Interaction	Dr. Malathy Venkatesh	To appraise students with development on use enzymes in food processing	Students of FETD - PG & Doctoral	Stern ingredients(I) ltd.
23	22-23 February, 2014	Department of Food Engineering And Technology	Industry Visit	Professor S. S. Lele & B.Tech Students	Visit & Train small Industry as Dehydration at Trilok Food, Satara	UG(B.Tech) students	Trilok Food India
24	24-10-13	Department of General Engineering	Industry Institute Interaction	Kabra Gopal L	To expose students to "Techno commercial evolution of injection molded component	Faculty & M.E.(Plastic) Student	Helvoet rubber & Plastic Technology, Pune
25	15-02-14	Department Of General Engineering	Industry Institute Interaction	Dr. V. R. Gaval & M.E. Students	To visit Helvoet Rubber and plastic Technology, Pune	M.E. Students and General Engg Dept.	Helvoet Rubber and plastic Technology, Pune
26	25-11-13	Department of Green Technology	Industrial visit	Dr. P. D. vaidya & Dr. Parag Sutar + 28 Students from M.Tech-Green Technology	To enable the students to get an experience in the industrial exposure	F. Y. M. Tech (Grren Technology)	Rashtriya Chemicals and Fertilizers(RCF) Ltd.
27	26-09-13	Department of Oils, Oleochemicals and Surfactants Technology	Factory Visit	Dr. Smita Jadhav & Dr. Amit Pratap	To visit the M/S Godrej Industries Ltd.	Students of Oils Department	M/s Godrej Industries Ltd.

28	18-11-13	Department of Pharmaceutical Sciences & Technology	Industrial visit	Dr. Anant Kapdi & 63 Students & 1 Ph. D Student	To visit Pharma industries and learn about in-plant processes	Pharma Dept.	MDC Pharma, Brooks Labs & United Biotech & PANACEA BIOTECH & instite will be NIPER, IMTECH etc.
29	13-08-13	Department of Polymer & Surface Engineering	Industry Institute Interaction	Professor P. A. Mahanwar	To explore the possibilities of Project	Students	AkzoNobel India Pvt. Ltd. - Banglore
30	27-03-14	Department of Polymer & Surface Engineering	Industry Visit	Professor Jagtap with B.Tech & M.Tech Students	Enhance the knowledge of students	Students & Faculties	M/s. Johndeere Technology Cener India

List of Finishing School Activities

No	Duration	Department	Activity	Participant's Name	Objective	Deliverables
1	17/8/ 2013	All Departments	Communication & Interview skills	Kamshaft Innovations Pvt. Ltd	To improve the skills of students of ICT	Kamshaft Innovations Pvt. Ltd
2	08/12/ 13	All Departments	Communication & Interview skills	Vertois Training and Consultancy Pvt. Ltd	To improve the skills of students of ICT	Vertois Infoserve Pvt. Ltd.
3	21/10/ 2013	All Departments	Communication & Interview skills	M/s. Roy Eddington Charles & Associates	To improve the skills of students of ICT	M/s. Roy Eddington Charles & Associates
4	28/10/ 2013	All Departments	Diagnostic Test	Sahil Netwoking & Solutions	To identify need based Training	Sahil Netwoking & Solutions Pvt. Ltd.

Weak Students Activities

Sr.	Duration	Department	Activity	Participant's Name	Objective	Beneficiaries	Participation External Agency
1	26th Oct 2013	All Dept.	Remedial classes for weak undergraduate students	First Year UG Students	Conceptual teaching to weak students in organic chemistry	51 Students from F.Y.B.Tech & F.Y.B.Chem. Engg.	Dr. Lakshmy Ravishankar from Dept. of V. G. Vaze College of arts, Science & Commerce
2	24th - 28th Jan 2014	Department of Chemistry	Remedial Teaching	Dr. P. A. Sathe	To conduct remedial classes for S.Y.C.E & S.Y.B.Tech Classes in Physical Chemistry	17 Students from S.Y.C.E & S.Y.B.Tech Students	Dr. P.A. Sathe from Ramnarain Ruia College, Mumbai – 19.
3	16th Sept - 31st December 2013	Department of Mathematics	Remedial classes for F.Y.B.Tech & F.Y.CE(Applied. Math.I)	Students of F.Y.B.Tech & F.Y.CE(Applied. Math.I)	To improve the standards of weak students on object of Mathematics	53 Students of F.Y.B.Tech & F.Y.B.Chem Engg.	Mr. Ravishankar, Swami Vivekananda College, Chembur
4	January -May 2014	Department of Mathematics	Remedial classes for F.Y.B.Tech & F.Y.CE and M.Sc. Eng. Maths	Students of F.Y.B.Tech & F.Y.CE and M.Sc. Eng. Maths	Improvement of the standard of weaker students in Mathematics	64 Students of F.Y.B.Tech & F.Y.CE and M.Sc. Eng. Maths	Visiting faculty to conduct remedial classes

MOUs signed by ICT

Sr.	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	University of Saskatchewan	March, 2008	DBT-ICT Centre for Energy Biosciences	International
10	Professor M.M. Sharma Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
11	Dr. R. A. Mashelkar Chair in Chemical Engineering	April, 2008	Department of Chemical Engineering	National
12	Shri Narotam Sekhsaria, Distinguished Professor of Chemical Engineering	April, 2008	Department of Chemical Engineering	National
13	Dow Chemical International Pvt. Ltd.	July, 2008	Department of Chemical Engineering	International
14	Queensland University of Technology, Australia	July, 2008	DBT-ICT Centre for Energy Biosciences	International
15	Borouge Pte Ltd.	July, 2009	Department of Chemical Engineering and Department of Polymer and Surface Engineering	International
16	Deakin University, Australia *	2010	ICT	International
17	Microsoft Corporation	2010	ICT	International
18	Dystar India Pvt. Ltd	March, 2010	Department of Fibres and Textile Processing Technology	National
19	Lanxess India Private Limited	April, 2010	ICT	National
20	Hindustan Petroleum Corporation Ltd.	May, 2010	ICT	National
21	General Mills Operations LLC *	May, 2010	DBT-ICT Centre for Energy Biosciences	National
22	Tata Chemicals Limited	May, 2010	ICT	National
23	Chemtrols Industries Limited	May, 2010	ICT	National

24	Ishaan Industries	May, 2010	Department of Polymer and Surface Engineering	National
25	Indian Institute of Technology, Bombay	May, 2010	ICT	National
26	Department of Atomic Energy, Govt. of India	May, 2010	Department of Chemical Engineering	National
27	TERI University	July, 2010	Department of Chemical Engineering	National
28	Biotech Consortium India Limited	August, 2010	DBT-ICT Centre for Energy Biosciences	National
29	University of Illinois at Urbana-Champaign	October, 2010	ICT	International
30	Shri Kishore V. Mariwala - Professor J.B. Joshi Chair in Chemical Engineering	October, 2010	Department of Chemical Engineering	National
31	University of Mumbai	November, 2010	ICT	National
32	Groupe Des Ecoles Des Mines (GEM)	December, 2010	ICT	International
33	Veermata Jijabai Technological Institute (VJTI)	January, 2011	ICT	National
34	Royal Melbourne Institute of Technology (RMIT)	February, 2011	ICT	International
35	University of Bradford	February, 2011	ICT	International
36	Sah Petroleums Limited (SPL)	February, 2011	Department of Polymer and Surface Engineering	National
37	University of British Columbia *	February, 2011	ICT	International
38	FRP Institute *	March, 2011	Department of Polymer and Surface Engineering	National
39	Pidilite Professor M.M. Sharma Distinguished Doctoral Fellowship	March, 2011	Department of Chemical Engineering	National
40	Aker Powergas Pvt. Ltd. *	May, 2011	ICT	National
41	Ishaan Industries	May, 2011	Department of Polymer and Surface Engineering	National
42	Eli Lilly and Co.	May, 2011	Department of Pharmaceutical Sciences and Technology	International
43	North-East Institute of Sciences and Technology *	May, 2011	ICT	National
44	Science for Society (Shri Vaibhav Tidke)	June, 2011	Department of Chemical Engineering	National
45	Bombay Textile Research Association, Mumbai	June, 2011	Department of Fibres and Textile Processing Technology	National
46	Merck Specialties Pvt. Ltd.	July, 2011	Department of Chemical Engineering	International
47	Bayer Crop Science Ltd.	July, 2011	Department of Chemical Engineering	National
48	Hindustan Insecticides Ltd.	July, 2011	ICT	National
49	Saffron Eagle Biofuels	August, 2011	DBT-ICT	National
50	Rashtriya Chemicals and Fertilizers Ltd. (RCF)	October, 2011	Department of Chemical Engineering	National

51	South Illinois University, Edwardsville *	November, 2011	ICT	International
52	ONTARIO Universities International	November, 2011	ICT	International
53	Central Institute for Research on Cotton Technology	December, 2011	Department of Fibres and Textile Processing Technology	National
54	British Council Division, India British High Commission	January, 2012	ICT	International
55	The University of Nottingham	January, 2012	DBT-ICT	International
56	RCF Chair – Professor of Chemical Engineering	March, 2012	Department of Chemical Engineering	National
57	Queensland University of Technology, Australia	March, 2012	ICT	National
58	Bio-Rad Laboratories India Pvt. Ltd.	April, 2012	DBT-ICT Centre for Energy Biosciences	National
59	Wool Research Association, Thane	April, 2012	Department of Fibres and Textile Processing Technology	National
60	M/s Sanzyme Limited (Formerly Uni-Sankyo Limited)	May, 2012	DBT-ICT Centre for Energy Biosciences	National
61	Trilok Food India	July, 2012	Department of Food Engineering and Technology	National
62	Triple Pee Solution Pvt. Ltd. *	July, 2012	Department of Food Engineering and Technology	National
63	Akzo Nobel India Ltd. (ANIL)	September, 2012	Department of Polymer and Surface Engineering	National
64	Saife Vetmed Pvt. Ltd.	November, 2012	Department of Pharmaceutical Sciences and Technology	National
65	Yokogowa, Middle East	November, 2012	ICT	National
66	Privi Organics Pvt.	November, 2012	DBT-ICT Centre for Energy Biosciences	National
67	Coca Cola Ltd.	November, 2012	ICT	International
68	CSIR-Central Drug Research Institute (CDRI)	November, 2012	ICT	National
69	Homi Bhabha National Institute, Mumbai	November, 2012	ICT	National
70	Indian Institute of Chemical Technology, Hyderabad	November, 2012	ICT	National
71	National Environmental Engineering Research Institute (NEERI), Nagpur	November, 2012	ICT	National
72	National Chemical Laboratory, Pune	November, 2012	ICT	National
73	Shivaji University, Kolhapur	November, 2012	ICT	National
74	GlaxoSmithKline Consumer HealthCare Ltd., Gurgaon	November, 2012	ICT	National
75	India Glycols Ltd. Uttarakhand	December, 2012	DBT-ICT	National
76	College of Engineering, Pune	February, 2013	ICT	National

77	Ethiopian Textile Industry Development Institute (TIDI), Ethiopia	February, 2013	Department of Fibres and Textile Processing Technology	International
78	Cellworks Research India Pvt. Lt.	February, 2013	DBT-ICT	National
79	Dr. Netar Prakash Scholarship (Avensa)	March, 2013	ICT	National
80	Washington State University, USA	March, 2013	ICT	International
81	Sir Dorabji Tata Reader in Pharmaceutical Chemistry	March, 2013	Department of Pharmaceutical Sciences and Technology	National
82	Unilever Industries Pvt. Ltd.	April, 2013	ICT	National
83	Tata Chemical Ltd. for "Darbari Seth Chair of Inorganic Chemical Technology Endowment"	May, 2013	Department of Chemical Engineering	National
84	CSIR-Indian Institute of Petroleum (IIP)	May, 2013	ICT	National
85	Michigan State University, USA	June, 2013	ICT	International
86	North Maharashtra University, Jalgaon	June, 2013	ICT	National
87	Kirloskar Integrated Technologies Ltd.	July, 2013	ICT	National
88	ADDIS ABABA Science and Technology University, Addis Ababa, Ethiopia	Sept, 2013	Department of Fibres and Textile Processing Technology	International
89	EID Parry (India) Ltd.	Oct, 2013	ICT	National
90	Queensland University of Technology, Australia	Nov, 2013	DBT-ICT Centre for Energy Biosciences	International
91	Institute of Science, Mumbai	January, 2014	ICT	National
92	Universitat De Valencia (Spain)	February, 2014	ICT	International
93	Glenmark Research Centre(Non Disclosure Agreement)	February, 2014	ICT	National
94	Reliance Technology Group (Non Disclosure Agreement)	February, 2014	ICT	National
95	Tata Institute of Social Sciences	April, 2014	ICT	National

Enhancement of R&D Activities

Sr.	Duration	Month	Department	Activity	Participants Name	Objective	Beneficiaries
1	04-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
2	15-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
3	08-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
4	14-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
5	01-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department

6	03-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
7	07-02-14	February	Department of Dyestuff Technology	Enhancement of R & D And institutional consultancy activities	Dr. G. S. Shankarling	For the institutional consultancy activities	Dyestuff Tech Department
8	12-Dec-13	February	Department of Pharmaceutical Sciences & Technology	Enhancement of R & D	Dr. Prajakta Dandekar Jain	Project defense DBT & DST Fellows' Meet	Dr. Prajakta Dandekar Jain, ICT
List of Workshops/Seminars for Research & Development Activities							
1	28-09-13	September	Department of Food Engineering & Technology	Expenditure on organizing in house subject area training programs/ workshops/ continuing education program	Faculty, Students from ICT, other institutes & Industries	To exchange & share knowledge on scientific aspects of processing of traditional foods	Faculty, Students from ICT, other institutes & Industries
2	10-04-13	October	Department of Pharmaceutical Sciences & Technology	Seminar by Dr. S. S. Bhagwat Shivaji University, Kolhapur	40 Students	To deliver a talk on eye cosmetics for benefit of UG students/ PG students	Undergraduate B. Pharm Students/ M.Pharm Students
3	17-18 Jan 2014 (Organised at ICT)	January	Department of Polymer & Surface Engineering	Organizing at National Conference on Advances in Polymers & Coating-Rangotsav2014	Dept. Of Polymer & Surface Engineering	Organizing at National Conference on Advances in Polymers & Coating-Rangotsav2014	Researcg Students of all over the India and Industry delegates
4	3rd & 4th March 2014 (Organised at ICT)	February	Department of Chemistry	Rasayanam 2014 & Catschol 2014	Department of Chemistry	Research Presentations & Poster Presentations	Department of Chemistry
5	25th to 26th Sept, 2013	September	TEQIP Office	Workshop / Seminar	All Institute members + Outside participants	To provide the attendees with an overview of 'Innovation' & to showcase innovation at ICT	All Attendees (All Institute Members + Outside participants)
Industry Institute Interaction For Research & Developemnt Activities							
1	28-11-13	December	Department of Chemical Engineering	Industry Institute Interaction	Professor David Thompson	MoU Exchange	Ict Faculty/ Students & ATENBIOTH
2	10-02-14	February	Department of Chemical Engineering	Under graduates summer internship Advertisement in Current Science	Department of Chemical Engineering	Advertisement in Current Science Magazine for Summer Internships	Department of Chemical Engineering
3	06-02-14	February	Department of Chemical Engineering	Enhanced R & D	Professor V. G. Gaikar & Professor A. B. Pandit	To discuss collaborative projects with faculty of SGGIES, Nanded	ICT
4	20-21 March 2014	February	Department of Chemical Engineering	Industry Institute Interaction	Professor V. G. Gaikar	To attend 2nd Foundation Day Meet of BIRAC	ICT
5	12-Dec-13	December	Department of Chemical Engineering	Enhanced R & D	Dr. Ratnesh Jain	Presentation of R&D Proposal on Public health & food & Nutritional Interventions	Dr. Ratnesh Jain
6	12-Dec-13	December	Department of Chemical Engineering	Enhancement of R & D	Dr. Parag Nemade	To present proposal for funding at DBT	Dr. P. R. Nemade
7	03-Mar-14	February	Department of Chemical Engineering	Enhancement of R & D	Dr. P. R. Nemade	Present a proposal for funding under Grand Challenges India, BIRAC at New Delhi	Dr. P. R. Nemade, Dr. V. H. Dalvi

8	1st June to 15th July 2014	January	Department of Chemical Engineering	Summer Internship	S. Y. C. E	Summer research internship for students from second year B.Chem.Engg.	S.Y.C.E Students
9	12-Dec-13	December	Department of Chemistry	To deliver a lecture	Dr. J. M. Nagarkar	To present & discuss the research	Participants in the conference
10	31-01-14	January	Department of Fibres & Textile Processing Technology	Enhanced Interaction with Industry	Professor Jamdagni Rishi	To enhance knowledge on a future textile Industries & Its toad map	Students, Faculties, Industrial Persons
11	16-09-13	September	Department of Food Engineering & Technology	Lecture	Professor Stephen J. Knabel	To give exposure to UG + PG students to subject matter of their interest through faculty from abroad	Students - UG & PG of FETD
12	16-09-13	September	Department of Food Engineering & Technology	Lecture	Dr. Sara Lomonaco	To give exposure to UG+PG students to subject matter of their interest through faculty from abroad	Students - UG & PG of FETD
13	27-09-13	September	Department of Food Engineering & Technology	Lecture	Professor S.B. Chincholkar	To familarize students on an imporatant area in biotechnology	Students - Masters & Doctoral of FETD
14	10-11-13	October	Department of Food Engineering & Technology	Lecture	Professor K. Niranjan	To familiarise students with never development in Osmotic delegation of Foods	M.Tech(Sem I + II) Students of FETD
15	23-08-13	August	Department of Food Engineering & Technology	Enhancement of R&D and institutional consultancy activities inviting academic visitors from other academic & research institutions	Mr. S. Dave, Advisor, FSSAI	To familiarise students with CODEX, international food laws accepted by many countries	Students of UG,PG & Ph.D programs
16	26 May- 30 June 2014	April	Department of Food Engineering & Technology	Summer internship research programs for UG.	6 S.Y.B.Tech Students (1. Poornima Vijayan 2. Dushyant Kshatriya 3. Vaibhav Jain 4.Sawali Naware 5. Ajinkya Arun Atkare 6. Anjali Chahal)	To utilize summer break to undertake a UG project	Students of S.Y.B.Tech
17	15 May - 30 June 2014	May	Department of Food Engineering & Technology	Enhanced Interacting with Industry - Travel expenditure of students for visit to Industry	Students of Sem VI(B.Tech)	To support Travel to B.Tech - 17 Students for in-Plant Training	11 Students of B.Tech(Sem VI) Students
18	10-04-14	May - June	Department of Food Engineering And Technology	Lecture	Professor S. S. Lele	Improvement of wine quality in Tropics	Students & Faculties of ICT
19	23-09-2013 to 27-09-2013	September	Department of Polymer & Surface Engineering	Lecture	Professor P. A. Mahanwar	To interact with scientist from all over the world & deliver it	Students of ICT & PSA

20	01-06-2014 to 30-06-2014	May	Department of Polymer & Surface Engineering	Summer internship research programs for Ugs.	12 Students (1. Kiran Aher 2.Pooja Mittal 3. Azeem Khan 4. Gaurav Ahuja 5. Vaibhav Edlabadkar 6. Shantanu Nikam 7.Kowshikraman Sethuraman 8.Neha Belhekar 9.Ankit Mishra 10.Neil Chavan 11.Kiran Kundaram 12.Foram Prajapati	Research Upgradation	Students
Filing Patents under enhancement of Research & Development Activities							
1	11-11-13	November	Deparment of Chemical Engineering	Patent Filing	Professor V. G. Gaikar	Filing a patent application	ICT
2	02-01-14	January	Department of Chemical Engineering	Enhancement of R & D	Dr. Parag Nemade	Filing Patent	Dr. P. R. Nemade, Dr. V. G. Gaikar, N. Jha, K.B. Dhopte, M.M.Kadam
3	9th April, 2014	April	Department of Chemistry	Enhancement of R & D activities	Dr. J. M. Nagarkar	To file the Indian Patent	Dr. J. M. Nagarkar & Mr. S. H. Gund
4	02-01-14	January	Department of Dyestuff	Patent Filing	Professor Prakash Bhate	TO apply for Indian Patent	ICT
5	06-01-14	January	Department of Fibres & Textile Processing Technology	Patent Filing Expenditere	Dr. S. R. Shukla	Filled patent on Novel Synthesis of 2 Hydroxyethyl Terephthalamideancle and threphthalic Acid (TPA)	ICT, Dr. S. R. Shukla
6	Jan-Feb 2014	March	Department of Fibres & Textile Processing Technology	Filing Patent	Dr. R. V. Adivarekar	Patent application for patent no.473/ Mum/2013	Dr. R. V. Adivarekar, and ICT
7	Jun-14	June	Department of Fibres & Textile Processing Technology	Filing Patent	Dr. R. D. Kale	Filing Patent	Institute
8	Oct-13	December	Department of Pharmaceutical Sciences & Technology	Patent Filing	Professor V. B. Patravale	To file provisional patent application 3183/Mum/2013	ICT, Professor V. B. Patravale
9	Nov-13	December	Department of Pharmaceutical Sciences & Technology	Patent filing	Professor V. B. Patravale	To file provisional patent application 3567/Mum/2013	ICT, Professor V.B. Pateravale
Publications under enhancement of Research & Development Activities							
1	May-14	April	Department of Food Engineering And Technology	Publication	Professor S. S. Lele	Acceptance of Publication Charges	Harshali Bandekar
2	19-22 Oct	October	Department of Pharmaceutical Sciences & Technology	Publications	Dharmendra Kumar Khatri	To publish research work in journal	Dharmendra Kumar Khatri & Department of Pharmaceutical Science & Technology

3	Jan-14	February	Department of Pharmaceutical Sciences & Technology	Publication	Dr. Sadhana Sathaye	Published article in reputed peer review journal	Dr. Sadhana Sathaye
4	Jan-14	February	Department of Pharmaceutical Sciences & Technology	Publication Indian Journal of Pharm Science	Dr. Sadhana Sathaye	Published article in reputed peer review journal	Dr. Sadhana Sathaye
Consumables/ Chemicals under Research & Development Activities							
1	09-02-13	September	DBT	Consumables	Dr. Sandeep B. Kale	Consumable for R&D of M.Tech course	Research Students of M.Tech. Bioprocess Technology
2	21st to 23rd November 2013	August	DBT	Consumables	Dr. Sandeep B. Kale	Consumable for R&D of M.Tech course	Research students of M.Tech BPT
3	24-01-14	January	Department of Chemical Engineering	Sample Analysis	Mufeedah Muringa Kandy	Sample Analysis of the prepared FE-SEM for its characterization and further growth of research	Characterizational Study
4	27-01-14	January	Department of Chemical Engineering	Enhancement of R & D	Professor V. G. Gaikar	Purchase of 1TB external hard disk	Chem.Engg. Office
5	April -Oct, 2014	April	Department of Chemistry	In situ hydrogenatic for organic synthesis	Nilesh Patil	In situ hydrogenatic for organic synthesis	Students of ICT
6	April -Oct, 2014	April	Department of Chemistry	Carbonylation reaction for the organic synthesis	Sujit Charhan	Carbonylation reaction for the organic synthesis	Students of ICT
7	April -Oct, 2014	April	Department of Chemistry	To carry organic synthesis(chemical requirement)	Kirtikumar C. Badgujar	Organic synthesis	Students of ICT
8	19-07-13	July	Department of Fibres & Textile Processing Technology	Testing, Chemicals & Equipments	Dr. R.V.Adivarekar	Research work of PG Students	Research Students
9	10-01-14	January	Department of Fibres & Textile Processing Technology	Enhancement of R & D	Mr. Parag Bhavsar	To study the morphology and surface characterstics of samples	Students from department of Fibres & Textile Processing Technology
10	Jan-Feb 2014	January	Department of Fibres & Textile Processing Technology	Enhancement of R & D	Dr. R. D. Kale	To develop wet spinning set up for making fibnel	UG & PG Students of the textile department
11	13-01-14	January	Department of Fibres & Textile Processing Technology	Samples Testing - Characterization & Identification of culture	Neha Parmar	Characterization & Identification of Bacterial culture	Neha Parmar
12	09-01-14	January	Department of Fibres & Textile Processing Technology	Enhancement of R & D	Professor S. R. Shukla	Testing of samples for SEM, XRD & FT-IR for rearch work	Students from department of Fibres & Textile Processing Technology
13	20-11-14	January	Department of Fibres & Textile Processing Technology	Enhancement of R & D	Dr. R. D. Kale	Make provision for hot water in lab	UG & PG Students of the textile department
14	06-02-14	February	Department of Fibres & Textile Processing Technology	Research & Development	UG & PG Students	Various grades of fabric for research	UG & PG Students of the textile department

15	Feb-14	February	Department of Fibres & Textile Processing Technology	Research & Development	Professor S. R. Shukla	Presentation of UGC Major Research Project	ICT
16	12-08-13	August	Department of Food Engineering & Technology	Academic visitor from other academic & research institute(2013-14)	Professor K. Niranjan	To give students to the benefit of expertise + expenditure of an authority in food engg.	Students of final year B.Tech (Food Engg. & techno)
17	Jan 2014 - April 2014	April	Department of General Engineering	Coursework for PhD. From IIT, Bombay	Mr. Vikramsinha Sarjerao Korpale	To Study(1) Advanced Heat Transfer (2) CFD & Heat transfer so as to improve the simulation skills, realted Heat Transfer and renewable engineering required for research in ICT Mumbai	Mr. Vikramsinha Sarjerao Korpale
18	20 Sept - 20 Nov 2013	November	Department of Oils,Oleochemicals and Surfactant Technology	Research Chemicals	Dr. Jyotsna S. Waghmare	Purchase of Chemicals	Students from Department of Oils, Oleochemicals and Surfactant Technology
19	12-02-14	February	Department of Oils,Oleochemicals and Surfactant technology	Enhancement of R & D	Dr. J. S. Waghmare	Chemicals for Research	Students of Oils Dept.
20	10-Dec-13	December	Department of Polymer & Surface Engineering	Enhancement of R & D	Parag Kulkarni	Procurement of Chemicals for post graduate research	Department of Polymer & Surface Engg.
21	23-Dec-13	December	Department of Polymer & Surface Engineering	Procurement of Chemicals for R & D Projects	Swapnil Darji	Procurement of Chemicals for post graduate research	Department of Polymer & Surface Engg.
22	23-Dec-13	December	Department of Polymer & Surface Engineering	Procurement of Chemicals for R & D Projects	Manoj Praharaj Bhatnagar	Procurement of Chemicals for post graduate research	Department of Polymer & Surface Engg.
23	8-9 Dec, 2013	November	Department of Polymer & Surface Engineering	Sample Characterization (FESEM) at UICT NMU, Jalgaon	Kunal V. Yeole	To evaluate morphological study of syntherized nanocontainers	Kunal V. Yeole
24	8-9 Dec, 2013	November	Department of Polymer & Surface Engineering	Sample Characterization (FESEM) at UICT NMU, Jalgaon	Manoj N. Mali	To evaluate morphological study of polymer Blend samples(TPU)	Manoj N. Mali
25	12-Dec-13	December	Department of Polymer & Surface Engineering	Research & Development	Ajay M. Hajgude	Study of swollen state polymerization of PBT	Ajay M. Hajgude & PG Students
26	26-08-13	August	Department of Polymer & Surface Engineering	Research	Kulkarni Parag R.	M.Tech Research work	Students of M.Tech

List of Patents Filed (2013-14)

Sr.	Stream	Department	Patent Registered	Patent Title	Application No.	Application Filiing Date
1.	Engineering/ Technology	Department of Chemical Engineering	National	Improved regenerative Rankine cycle	2282/ Mum/2010	07-01-13
2	Engineering/ Technology	Department of Chemical Engineering	National	Novel amido-amine based compounds useful as surfactants	2393/ Mum/2010	07-01-13

3	Engineering/ Technology	Department of Chemical Engineering	National	Synthesis of novel amidoamine and glycerol based cationic surfactant	1245/ Mum/2012	07-01-13
4	Engineering/ Technology	Department of Chemical Engineering	National	Synthesis of Corrosion Inhibiting Nano Pigment Compraising Of Nano Container for Corrosion Inhibitive Coating	1539/ MUM/2012	07-01-13
5	Engineering/ Technology	Department of Dyestuff Technology	National	A class of quaternary ammonium catalyst	1129/ MUM/2011	07-01-13
6	Engineering/ Technology	Department of Dyestuff Technology	National	Styryl molecules based on substituted-1,4-diphenethyl-1,2,3,4-tetrahydroquinoxaline-6-carbaldehyde	1503/ MUM/2011	07-04-13
7	Engineering/ Technology	Department of Dyestuff Technology	National	Ultrasound assisted process for synthesis of chalcone	1504/ MUM/2011	07-04-13
8	Engineering/ Technology	Department of Fibres and Textile Processing Technology	National	Demonstrating efficacy of cleansing product	2158/ MUM/2012	07-01-13
9	Engineering/ Technology	Department of Fibres and Textile Processing Technology	National	Preparation of Nano Titanium oxide using dispersing agents	473/ MUM/2013	07-04-13
10	Applied Sciences	Department of Chemistry	National	An improved method for benimidazole synthesis from 2-haloaniline, dihalomethane and sodium azide in presence of copper complex catalyst	2450/MUM/ 2013, 2013	07-04-13
11	Engineering/ Technology	Department of Chemistry	National	Tetrazolinohydrazino pyrazolin-5-one, useful antibacterial molecule	IND 2012	07-04-13
12	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Apparatus for increased production of algalbiomass	1705/ Mum/2012	06-12-13
13	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	A process for recovery of xylitol with high yield & purity	421/ MUM/2012	15/02/ 2013
14	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Process for production of purified hydrophobic/ plastifiable protein/s, their hydrolysate/s and applications thereof	420/ MUM/2012	14/02/ 2013

15	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Process for hydrolysis of oils to produce free fatty acids and mono acyl glycerols	278/ MUM/2012	30/01/ 2013
16	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Method for preparation of fermentable sugars from biomass	PCT/IN2010/ 000355	07-04-13
17	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Process for fractionation of biomass	1762/ Mum/2010	07-04-13
18	Engineering/ Technology	DBT-ICT Centre for Energy Biosciences	National	Continuous counter current Fluidized Moving Bed (FMB) and/or Expanded Moving Bed (EMB)	505/ MUM/2009	07-04-13

List of Conferences attended by faculty

Sr.	Conference Date	Month	Department	Activity	Faculty Name	Objective	Beneficiaries
1	25-26th Oct. 2013	October	DBT	Workshop	Dr. Sandeep Kale	To organize workshop on Advances in Bioprocess Technology	Industry staff, academicians and students of bioprocess Technology
2	23-24Nov 2013	October	DBT	Conference	Mr. Prashant Kumar	To deliver presentation at conference	Students of Ph.D Tech. Bioprocess Technology
3	15-19 June, 2014	June	DBT-ICT-CEB	Attending 4th Interactional Conference on Algal biomass, biofuels & bioproducts	Dr. Gunjan Prakash	To learn new avenues in the field of algal biofuels	Research Scientist in Microbiology
4	25-27 July 2013	July	Department of Chemical Engineering	Paper presentation	Dr. Neetu Jha	Present a paper in conference	Dr. Neetu Jha
5	1-3 Dec, 2013	October	Department of Chemical Engineering	Conference	Dr. Prakash D. Vaidya	Delivery of lecture Titled "Hydrogen Production - Renewable Routes" at the 2nd International Hydrogen & fuel Cell Conference, Goa	Industry and Academia
6	23-24 Nov, 2013	October	Department of Chemical Engineering	Workshop	ICT Nano Bio-2013	To educate and inform about advances in biomaterial of Nanobiotechnology	Students/ Researchees/ industries
7	17-19 February, 2014	December	Department of Chemical Engineering	International Conference	Dr. J. M. Nagarkar	To present and discuss the research carried out by me & My group students	Participants in the conference

8	17-22 March 2014	February	Department of Chemical Engineering	International workshop on Perspectives in Dynamical Systems & Control	Dr. Sujit S. Jogwar	Establish international linkages & cooperative partnership, Upgradation of subject knowledge & research competence in the area complex & nonlinear dynamical systems	Researchers in the are of nonlinear control
9	23-27 June, 2014	June	Department of Chemical Engineering	Workshop onrganized by TEQIP cell of IIT-Kanpur "Mechanics in Physics"	Dr. Vishwanath H. Dalvi with two Ph.D Candidates)	Gain insights into teaching of physics and related fields. Invaluable for teaching and staying current as a researcher.	Dr. V. H. Dalvi
10	04-05 February, 2014	January	Department of Chemistry	Conference	Professor B. M. Bhanage	To deliver on invited talk at 16th National workshop on catalysis at NEERI	Students
11	18-19 March 2014	May	Department of Chemistry	Workshop	Department of Chemistry	To organize a workshop on laboratory safety	PhD Students of all department
12	29-30 Sept 2013	October	Department of Dyestuff Technology	Symposium	Dyestuffs Department	To discuss the frontier areas in the area of functional application of colorants	Scientist & Technologists working in the area of functional applications of colorants
13	29-07-03	July	Department of Fibres & Textile Processing Technology	Conference	Dr. Sujata Pariti	To interact with Professionals in the industries	ICT, Students
14	23-01-14	January	Department of Fibres & Textile Processing Technology	Workshop	Dept. of Textile	To enhance & give hands on experience to research on sportech.	Students & faculty
15	06-07 February, 2014	February	Department of Fibres & Textile Processing Technology	Conference	Dr. Sujata pariti	To attend conference related to fashion Technology	ICT, Textile Department
16	28-29 Nov 2013	November	Department of Food Engineering And Technology	Conference	Professor S.S Lele	Deliver invited lecture & attend IWSA	Scientists from other institutes, Students
17	18-21 Dec, 2014	December	Department of Food Engineering And Technology	Conference	Dr. U. S. Annapure	To attend IFCON - 2013 as invited to be a chairperson for one of the sessions in the conferecne	My self & students

18	21-22 November, 2013	December	Department of Food Engineering And Technology	Conference	Professor S. S. Lele	BDT-JRF Meet	DBT Students
19	15 February, 2014	February	Department of Food Engineering And Technology	Conference	Professor S. S. Lele	To interact with Women entrepreneures in foods	Department of Foods Engineering And Technology
20	30 July 2013	July	Department of Food Engineering And Technology	workshop on Codex; Principles & Procedures	Dr. U. S. Annapure	To participate in a workshop on codex; principles & procedures	Myself & Students
21	23-24 Jan 2014 (At ICT only)	January	Department of Mathematics	Conference	Dept. of Mathematics	Look at the existing situation of Mathematics & industry collaboration and look for solution to explore the interaction between two community	Department of Mathematics & Mathematics community in India
22	18-20 Nov 2013	November	Department Of Physics	Conference	Siddharth Kasthurirangan	To deliver an oral presentation entitiled "ECR Plasma Diagnostics using Bremsstrahlung Spectra" Also to present 1 Poster	S. Kasthurirangan, and Dept. of Physics
23	10-12 March, 2014	December	Department of Physics	Conference	Dr. R. R. Deshmukh	To present research work and share knowledge with the participants	My self & students
24	8-11 Dec 2013	October	Department of Polymer & Surface Engineering	Conference	Bhuwanesh Kumar Sharma	Research work presentation in international conference, named as AWPP - 2013 at Hotel cidade de, Goa.	Bhuwanesh Kumar Sharma
25	02-07 June, 2014	May	Department of Polymer & Surface Engineering	Workshop	Dr. Adarsh Rao	One week workshop on Chromatography & Spectroscopy	Dr. Adarsh Rao
26	13-14 December 2013	December	Library	Conference	Amogh S. Lokhande	To present paper in the Conference	Institute, Library & Self
27	19 April 2014	April	Library	Workshop	Amogh S. Lokhande	To know about anti-plagiarism software and its functioning	Institute
28	10-11 Januanry, 2014	January	TEQIP	Conference	Dr. U. S. Annapure, Dr. Amit Pratap, Dr. Sandeep Kale, Dr. S. T. Mhaske	Call for Participation/ Paper on TEQIP-II: Best Policies & Practices	Dr. U. S. Annapure, Dr. Amit Pratap, Dr. Sandeep Kale, Dr. S. T. Mhaske

List of Training programs attended by students

Sr.	Duration	Department	Activity	Participant's Name	Objective	Beneficiaries
DEPARTMENT : DBT-ICT						
1	29-Jun-13	DBT-ICT	Symposium	Ms. Pinky Samtani	To attand symposium on Ion Chromatography	Ms. Pinky Samtani
2	29-Jun-13	DBT-ICT	Symposium	Ms.Srubha Datta	To attand symposium on Ion Chromatography	Ms.Srubha Datta
3	15th - 19th December, 2013	DBT-ICT	Attending conference for presentation	Mr. Arjun Singh Bajwa	To deliver a presentation on "Chemoenzymatic Epoxidation of Karanja Oil"	Student of PhD Tech. BPT, DBT - ICT - CEB
4	21-23 November 2013	DBT-ICT	Attending conference for presentation	Mr. Manoj Chavan, Mr. Prashant Kumar, Ms. Mandrita Chatterjee, Ms. Gaurangi Deore	To deliver oral presentation at conference(for young scientist award)	Students of PhD tech. Bioprocess Technology
5	21-Sept-2013 & 23-Sept-2013	DBT-ICT	Attending Conference for Presentation	Ms. Paramjeet Khandpur	To deliver presentation at Conference	Students of M.tech Bioprocess technology
6	18-20 Feb 2014	DBT-ICT	Conference on Molecular modeling	Harshita V. Londhe	To learn new avenues in molecular modeling and its applications	Students of M.tech Bioprocess technology
7	18-20 Feb 2014	DBT-ICT	Conference on Molecular modeling	Tapadia Mrunmai	To learn new avenues in molecular modeling and its applications	Students of M.tech Bioprocess technology
8	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Valerie Rodrigues	To inculcate Safety principles & aspects in students	Valerie Rodrigues
9	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Smita Dattatraya Patil	To inculcate Safety principles & aspects in students	Smita Dattatraya Patil
10	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Aditya P. Sarnaik	To inculcate Safety principles & aspects in students	Aditya P. Sarnaik
11	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Anand Shyamlal Gupta	To inculcate Safety principles & aspects in students	Anand Shyamlal Gupta
12	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Singh Nitesh Kumar	To inculcate Safety principles & aspects in students	Singh Nitesh Kumar
13	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Mukesh P Pednekar	To inculcate Safety principles & aspects in students	Mukesh P Pednekar
14	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Lucy Nainan	To inculcate Safety principles & aspects in students	Lucy Nainan
15	18-19 March, 2014	DBT-ICT	Workshop On Safety Laboratory	Manoj P.Chavan	To inculcate Safety principles & aspects in students	Manoj P.Chavan

DEPARTMENT OF CHEMICAL ENGINEERING						
16	06-07-13	Department of Chemical Engineering	Enhancement of UG research students Poster Presentation	Dr. P. R. Nemade	Poster presentations arrangements for display of UG research	CE Department
17	19-21 Dec 2013	Department of Chemical Engineering	Conference	Mr. Ananda J. Jadhav	For presenting paper in SSPC conference	Mr. Ananda J. Jadhav
18	19-21 Dec 2013	Department of Chemical Engineering	Conference	Mr. Sammit E. Karekar	For presenting paper in SSPC conference	Mr. Sammit E. Karekar
19	5-8 Feb,2014	Department of Chemical Engineering	Conference	Sachin Bhikaji Jadhao	To attend Delhi Sustainable Development Summit	Professor S. S. Bhagwat
20	06-07 March 2014	Department of Chemical Engineering	Paper Presentation at CHEMENT 2014	Meena B. Singh	Presenting research work at CHEMENT 2014	Meena B. Singh
21	06-07 March 2014	Department of Chemical Engineering	Paper Presentation at CHEMENT 2014	Vaishali B. Thaore	Presenting research work at CHEMENT 2014	Vaishali B. Thaore
22	06-07 March 2014	Department of Chemical Engineering	Paper Presentation at CHEMENT 2014	Jyotsna S. Arora	Presenting research work at CHEMENT 2014	Jyotsna S. Arora
23	August- Oct[3 months]	Department of Chemistry	IOC	Rupesh H.Gaikwad	Carryout radioactivity study at IGCAR	ICT/Student
24	3-6 Dec, 2013	Department of Chemistry	IOC	Satish Lanke	Oral presentation at II SER-Bhopal in J-Nost Conference	Satish Lanke
25	25-28 Feb,2014	Department of Chemistry (Green Tech)	Conference	Mr. Rakesh S. Jain	To do poster presentationin SESTEC - 2014 on "Emerging Trends in Separation Science & Technology" Title: Extraction & Electrochemical Behavior of Palladium in Room-Temperature Ionic Liquid	Self
26	25-28 Feb,2014	Department of Chemistry (Green Tech)	Conference	Mr. Shivkumar R Chaurasia	To do poster presentationin SESTEC - 2014 on "Emerging Trends in Separation Science & Technology" Title: Extraction & Electrochemical Behavior of Palladium in Room-Temperature Ionic Liquid	Self

27	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Aishwarya Anerao	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
28	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Amit Kumat	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
29	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Denvert D'Silva	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
30	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Divya Chenna	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
31	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Neetha Bhat	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
32	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Pooja Ayare	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
33	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Preksha Zaveri	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
34	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Princy Kennedy	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
35	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Priti Singh	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry

36	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Riddhi Golwankar	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
37	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Ruchira Pereira	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
38	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Amol Chavan	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
39	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Ashish Nag	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
40	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Dipali Kedar	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
41	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Disha Lakhani	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
42	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Jyoti Dutta	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
43	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Karishma Singh	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
44	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Nighi Gaur	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry

45	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Pranjali Naik	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
46	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Prayag Sawant	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
47	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Priyanka Gajbhiye	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
48	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Sanhita Chandorkar	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
49	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Sudheer Kurup	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
50	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Ujjwal Bhojane	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
51	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Vishnu Koli	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
52	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Vrushali Raut	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
53	06-08 Feb 2014	Department of Chemistry (M.Sc.)	Conference	Prathamesh Asinkar	To know more about research going around in the world & try and incorporate these lessons in our research	M.Sc. Chemistry
54	1st oct - 2nd Oct, 2013	Department of Fibre & textile Technology	International Conference	Girendra Singh Pal	Presentation at conference, Andheri	Composite Industry

55	2-3 August 2013	Department of Fibres & Textile Processing Technology	Workshop	Mr. Shyam Divakar Phadke	Inspring development of InkJet Technology	Textile Dept & Paper Industry & student thereof
56	16-18 August, 2013	Department of Fibres & Textile Processing Technology	International Conference AFFTTN-2013	Pawan Desai	To attend conference, interact with researchers	Self
57	21-08-13	Department of Fibres & Textile Processing Technology	International Conference	Miss. Geetal Mahajan	To present a poster on my research work. To have an international exposure of research	Miss. Geetal Mahajan
58	1st - 2nd Oct.,2013	Department of Fibres & Textile Processing Technology	Presentation	Shyam Divakar Phadke	Presenting in AATCC International conference in Mumbai on October	Textile Dept & ICT
59	1st - 2nd Oct.,2013	Department of Fibres & Textile Processing Technology	Presentation	Saptarshi Maiti	Presenting in AATCC International conference in Mumbai on October	Textile Dept & ICT
60	5-7 Dec, 2013	Department of Fibres & Textile Processing Technology	Conference	Neha D. Parmar	Conference on 'Bioprocessing India 2013' IIT Delhi	Bioprocessing Industry & Student
61	25/11/2013 to 27/11/2013	Department of Fibres & Textile Processing Technology	Poster Presentation (Enhanced Interaction with Industry)	Manasi M. Joshi	Participation in the conference	Research Students & industry People
62	25/11/2013 to 27/11/2013	Department of Fibres & Textile Processing Technology	Poster Presentation (Enhanced Interaction with Industry)	Pallavi S. Badhe	Participation in the conference	Research Students & industry People
63	3-2 January 2014	Department of Fibres & Textile Processing Technology	International Conference	Sanket P. Valia	To present a paper in an international conference & to get an International Exposure	Sanket P. Valia
64	09 - 11 December 2013	Department of Fibres & Textile Processing Technology	International Conference	Sachin C. Gondhalekar	To exchange new ideas & information on issues in Chemical Engineering	Sachin C. Gondhalekar
65	06-Feb-14	Department of Fibres & Textile Processing Technology	Conference	Ajinkya S. Pawar & Swapnali Y Patil	Paper Presentation Event	Ajinkya S. Pawar & Swapnali Y Patil
66	11-12 April, 2014	Department of Fibres & Textile Processing Technology	Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Neha Parmar	For Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Neha Parmar
67	11-12 April, 2014	Department of Fibres & Textile Processing Technology	Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Umesh Balasaheb Kore	For Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Umesh Balasaheb Kore

68	11-12 April, 2014	Department of Fibres & Textile Processing Technology	Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Namata Patil	For Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Namata Patil
69	11-12 April, 2014	Department of Fibres & Textile Processing Technology	Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Shweta Vyas	For Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Shweta Vyas
70	11-12 April, 2014	Department of Fibres & Textile Processing Technology	Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Saket Kulkarni	For Paper Presentation in ICETT 2014, NIT Jalandhar INDIA	Saket Kulkarni
71	20th - 21st Feb 2014	Department of Fibres & Textile Processing Technology	To present Paper in 27th National convention of Textile engineers	Pawan Desai	To present research work interaction with industry	Students
72	29-30 April, 2014	Department of Fibres & Textile Processing Technology	Conference	Pawan V Desai	To attend international conference	Students
73	18-19 March, 2014	Department of Fibres & Textile Processing Technology	Workshop On Safety Laboratory	Umesh Balasaheb Kore	To inculcate Safety principles & aspects in students	Umesh Balasaheb Kore
74	18-19 March, 2014	Department of Fibres & Textile Processing Technology	Workshop On Safety Laboratory	Sourabh Singh	To inculcate Safety principles & aspects in students	Sourabh Singh
75	15-19 July 2013	Department of Food Engineering & Technology	Workshop	Mr. Vinit Bajaj	To learn molecular biology techniques	
76	6th Sept - 8th Sept, 2013	Department of Food Engineering & Technology	Conference	Mr. Chetan Arekar	Poster Presentation on: Effect of B.coagulans on lactose utilization in Human subjects	ICT, Students
77	6-8 Dec 2013	Department of Food Engineering & Technology	Attending a conference	Ms. Devshri Bhotmange	To attend a conference 'ICBH-2013' & expand subject knowledge	Myself & student colleages
78	18-21 Dec, 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Ms. Dhanashree Balkrishna Amane	To attend an international conference and present a part of research work	Myself,Faculty, Fellows students and the departments
79	18-21Dec 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Ms. Mugdha Pradip Dabir	To attend an international conference and present a part of research work	Myself,Faculty, Fellows students and the departments
80	18-21 Dec, 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Rahul P Rathod	To attend an international conference and present a part of research work	Myself,Faculty, Fellows students and the departments

81	18-21 Dec, 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Sonali B Gaikawad	To attend an international conference and present a part of research work	Myself,Faculty, Fellows students and the departments
82	10-12 December 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Tripti Pandey	Visit Suppliers & gather information on sweet processing	Myself will helped in research project
83	10-12 December 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Rajan Kumar	Visit Suppliers & gather information on sweet processing	Myself will helped in research project
84	18-21 Dec, 2013	Department of Food Engineering & Technology	Incremental Operating Cost	Mahesh M Kharat	Structural modification of catechin for enhanced bioactivity	Mahesh M Kharat
85	18-21 Dec, 2013	Department of Food Engineering & Technology	Poster Presentation in conference	Yamuna Devi. R	To attend International conferecne and to do poster presentation	Faculty & Department
86	18-21 Dec, 2013	Department of Food Engineering & Technology	Conference	S. Chaitanya Krishna	To attend an international conference and present a part of research work	Faculty & Department
87	09-11 Jan, 2014	Department of Food Engineering & Technology	Conference	Dattatray Trimbak Khemnar	Poster presentation, attending workshop	Dattatray Trimbak Khemnar
88	19-22 Jan, 2014	Department of Food Engineering & Technology	Conference	Swati B. Jadhav	To attend lectures on the topics in the field of interest	Swati B. Jadhav
89	Sept- Dec 2013	Department of Food Engineering & Technology	Research Project Work	Tripti Pandey	Research project work	Tripti Pandey
90	06-08 Feb 2014	Department of Food Engineering & Technology	Research	Tripti Pandey	Research project work	Students
91	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Anuradha D. Deorukhkar	To inculcate Safety principles & aspects in students	Anuradha D. Deorukhkar
92	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Ashlesha Bhagwat	To inculcate Safety principles & aspects in students	Ashlesha Bhagwat
93	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Dhanashree Balkrishna Amane	To inculcate Safety principles & aspects in students	Dhanashree Balkrishna Amane
94	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Aarti S. Ghanate	To inculcate Safety principles & aspects in students	Aarti S. Ghanate
95	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Suprama Datta	To inculcate Safety principles & aspects in students	Suprama Datta
96	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Shweta Deshaware	To inculcate Safety principles & aspects in students	Shweta Deshaware

97	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Manvi Vernekar	To inculcate Safety principles & aspects in students	Manvi Vernekar
98	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Bincy Bhaskar	To inculcate Safety principles & aspects in students	Bincy Bhaskar
99	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Madhura P Janve	To inculcate Safety principles & aspects in students	Madhura P Janve
100	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Bedade Dattatrya K	To inculcate Safety principles & aspects in students	Bedade Dattatrya K
101	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Nirali Shah Nitin	To inculcate Safety principles & aspects in students	Nirali Shah Nitin
102	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Bagul Vaishali Prakash	To inculcate Safety principles & aspects in students	Bagul Vaishali Prakash
103	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Mahendra Kumar Prajapati	To inculcate Safety principles & aspects in students	Mahendra Kumar Prajapati
104	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Avinash N. Choudhary	To inculcate Safety principles & aspects in students	Avinash N. Choudhary
105	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Rohan V Pai	To inculcate Safety principles & aspects in students	Rohan V Pai
106	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Mayank R Patel	To inculcate Safety principles & aspects in students	Mayank R Patel
107	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Mrunal Patil	To inculcate Safety principles & aspects in students	Mrunal Patil
108	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Aniruddha Vaidya	To inculcate Safety principles & aspects in students	Aniruddha Vaidya
109	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Rutuja G Vaze	To inculcate Safety principles & aspects in students	Rutuja G Vaze
110	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Mrunal A Warke	To inculcate Safety principles & aspects in students	Mrunal A Warke
111	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Sneha C Sawant	To inculcate Safety principles & aspects in students	Sneha C Sawant
112	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Snehal Agrawal	To inculcate Safety principles & aspects in students	Snehal Agrawal
113	18-19 March, 2014	Department of Food Engineering & Technology	Workshop On Safety Laboratory	Momin Bilal M Rahman	To inculcate Safety principles & aspects in students	Momin Bilal M Rahman

114	10-12 Dec 2013	Department of General Engineering	Paper presentation in conference & Publication	Dr. S.P.Deshmukh, Mr. Dipak K Kokate, Vikramsinha S.Korpale	Paper presentation and attending International conference at IIT Bombay	
115	06-08 Feb, 2014	Department of General Engineering	International Summit	Dipak H Kokate	TO attend the international summit on sustainablity pertain to research work	Dipak H Kokate(PhD Student)
116	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss. Asma D. Fakir	To participate and present a poster	Students of M.tech.(oils)
117	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss Trupti D. Dhumal	To participate and present a poster	Students of M.tech.(oils)
118	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Mr. Sadanand S. kadam	To participate and present a poster	Students of M.tech.(oils)
119	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss. Nikita S. Wanjari	To participate and present a poster	Students of M.tech.(oils)
120	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss. Ravindra P. Chavan	To participate and present a poster	Students of M.tech.(oils)
121	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Mr. Pravin N. Gorle	To participate and present a poster	Students of M.tech.(oils)
122	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss. Pallavi B. Shivdas	To participate and present a poster	Students of M.tech.(oils)
123	8-10 August, 2013	Department of Oils,Oleochemicals and Surfactant technology	OTAI Conference at IICT Hyderabad	Miss harsha D. Ashtankar,	To participate and present a poster	Students of M.tech.(oils)
124	23-24 November 2013	Department of Oils,Oleochemicals and Surfactant technology	International Conference & Expo	Mr. Sachin Vasant patil	Latest Developments in Vegetable oil Processing	Mr. Sachin Vasant patil
125	23-24 November 2013	Department of Oils,Oleochemicals and Surfactant technology	International Conference & Expo	Mr. Chetan Sharad Waykole	Latest Developments in Vegetable oil Processing	Mr. Chetan Sharad Waykole
126	23-24 November 2013	Department of Oils,Oleochemicals and Surfactant technology	International Conference & Expo	Mr. Harshal P. Borole	Latest Developments in Vegetable oil Processing	Mr. Harshal P. Borole

127	23-24 November 2013	Department of Oils,Oleochemicals and Surfactant technology	International Conference & Expo	Mr. Bhupendra R. Shimpi	Latest Developments in Vegetable oil Processing	Mr. Bhupendra R. Shimpi
128	16-18 August, 2013	Department of Pharmaceutical Sciences & Technology	Poster Presentation at International Conference	Dharmendra Kumar Khatri	To present poster at International conference at Bangalore	Students
129	16th - 18th August,2013	Department of Pharmaceutical Sciences & Technology	To Attend Conference & poster Presentation	Pankaj D. Jain	To understand drug resistant epilepsy & role of new anti epileptie	Research scholar Ph.D(Tech.)
130	19-23 October 2013	Department of Pharmaceutical Sciences & Technology	Conference	Parth Joshi	For Poster Presentation	Parth Joshi
131	19-23 October 2013	Department of Pharmaceutical Sciences & Technology	Conference	Meenal Ghune	For Poster Presentation	Meenal Ghune
132	19-22 Oct	Department of Pharmaceutical Sciences & Technology	Conference	Dharmendra Kumar Khatri	To present poster at International conference	Students
133	18-21 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Madhuri B. Shinde	For conference(IFCON) to present poster	Madhuri Shinde
134	16-18 Dec 2013	Department of Pharmaceutical Sciences & Technology	Poster Presentation	Vipin Deepak Bulani	To present the research work as poster presentation at 46th Annual conference of Indiaa Piological Society, bangalore	Vipin Deepak Bulani
135	16-18 Dec 2013	Department of Pharmaceutical Sciences & Technology	Oral Presentation	Dnyaneshwar Madhukar Nagmoti	To present the research work as poster presentation at 46th Annual conference of Indiaa Piological Society, bangalore	Dnyaneshwar Madhukar Nagmoti
136	16-18 Dec 2013	Department of Pharmaceutical Sciences & Technology	Oral Presentation	Pankaj Sudhakar Kothavade	To present the research work as poster presentation at 46th Annual conference of Indiaa Piological Society, bangalore	Pankaj Sudhakar Kothavade
137	16-18 Dec 2013	Department of Pharmaceutical Sciences & Technology	Poster Presentation	Nitin B. Gawali	To present the research work as poster presentation at 46th Annual conference of Indian Pharmacological Society, bangalore	Nitin B. Gawali

138	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Poster Presentation in conference	Sharadchandra D. Javeer	To present poster in conference	Sharadchandra D. Javeer
139	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Poster Presentation in conference	Avinash B. Gangurde	To present poster in conference	Avinash B. Gangurde
140	20-22 Dec 2013	Department of Pharmaceutical Sciences & Technology	Conference	Jaywant N. Pawar	Paper presentation in conference	Jaywant N. Pawar
141	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Dhawal Chobisa	To present poster at IPC-2013 Delhi.	Dhawal Chobisa
142	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Nikhil Lanjewar	To present poster at IPC-2013 Delhi.	Nikhil Lanjewar
143	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Mayank Patel	To present poster at IPC-2013 Delhi.	Mayank Patel
144	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Subhash Ingle	To present poster at IPC-2013 Delhi.	Subhash Ingle
145	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Mahendra Prajapati	To present poster at IPC-2013 Delhi.	Mahendra Prajapati
146	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Ganesh B. Shevalkar	To present poster at IPC-2013 Delhi.	Ganesh B. Shevalkar
147	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Jasmin Monpara	To present poster at IPC-2013 Delhi.	Jasmin Monpara
148	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Pankaj H. Jadhav	To present poster at IPC-2013 Delhi.	Pankaj H. Jadhav
149	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Ketan Y. Mahajan	To present poster at IPC-2013 Delhi.	Ketan Y. Mahajan
150	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Jameeluddin Fakhruddin	To present poster at IPC-2013 Delhi.	Jameeluddin Fakhruddin
151	20-22 Dec, 2013	Department of Pharmaceutical Sciences & Technology	Conference	Pradnya N. Vaingankar	Poster Presentation at 65th Indian Pharmaceuticals congress	Pradnya N. Vaingankar

152	23-25 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Saugandha Das	To get a platform to present research work & to be able to learn from the work presented ny other students & researchers	Would get to meet & network with various scientsts at a common forum
153	23-25 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Ms. Sandhya Pranatharthi Haran	To get a platform to present research work & to be able to learn from the work presented ny other students & researchers	Would get to meet & network with various scientsts at a common forum
154	10-11 Jan, 2014	Department of Pharmaceutical Sciences & Technology	To attend National Symposium	Aditya Arvindekar	To present poster at National symposium on "Bio Medicine" at Institute of Bioinformatics & Biotechnology, Pune	ICT
155	26Jan - 3 Feb, 2014	Department of Pharmaceutical Sciences & Technology	International Conference	Dalvi Bhagyashree R	To get new ideas in research. To gain knowledge in recent aspects of delivery	Networking & renowned scientist
156	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Pankaj D Jain	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
157	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Vaibhavi V. Peshattiwar	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
158	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Rahul S. Chaudhari	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
159	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Priya Ghumatkar	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
160	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Rufi Tambe	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
161	06-08 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Sachin P. Patil	Adult Neurogenesis:Stem Cells to therapies	Research Scholar PhD(Tech)
162	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Seminar	Kailash Moravkar	To attend the seminar/Conference	Kailash Moravkar (PhD Student)
163	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Seminar	Jayawant Pawar	To attend the seminar/Conference	Jaywant N.Pawar (PhD Student)

164	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Seminar	Harita R. Desai	To attend the seminar/Conference	Harita R. Desai (PhD Student)
165	02-05 March, 2014	Department of Pharmaceutical Sciences & Technology	Sympoisum	Aditya U. Arvindekar	To present poster at International Sympoisum on Nature Inspired Initiative in Chemistry	Aditya U. Arvindekar(PhD Student)
166	02-05 March, 2014	Department of Pharmaceutical Sciences & Technology	Sympoisum	Prashant B. Shinde	To present poster at International Sympoisum on Nature Inspired Initiative in Chemistry	Prashant B. Shinde(PhD Student)
167	02-05 March, 2014	Department of Pharmaceutical Sciences & Technology	Sympoisum	Mandar B. Mulik	To present poster at International Sympoisum on Nature Inspired Initiative in Chemistry	Mandar B. Mulik(PhD Student)
168	11-Feb-14	Department of Pharmaceutical Sciences & Technology	Conference	Ms. Rajshree L. Shinde	To discuss current issues & exchange of new ideas on drug delivery research	Intellectually stimulating forum for deliberations on current status & future trends on technological & biological aspects
169	11-Feb-14	Department of Pharmaceutical Sciences & Technology	Conference	Rohit Joshi	To discuss current issues & exchange of new ideas on drug delivery research	Intellectually stimulating forum for deliberations on current status & future trends on technological & biological aspects
170	11-Feb-14	Department of Pharmaceutical Sciences & Technology	Conference	Prashant Mande	To discuss current issues & exchange of new ideas on drug delivery research	Intellectually stimulating forum for deliberations on current status & future trends on technological & biological aspects
171	11-02-14	Department of Pharmaceutical Sciences & Technology	Conference	Bhgyashree Dalvi	To discuss current issues & exchange of new ideas on drug delivery research	Intellectually stimulating forum for deliberations on current status & future trends on technological & biological aspects

172	11-02-14	Department of Pharmaceutical Sciences & Technology	Conference	Shilpa Dawre	To discuss current issues & exchange of new ideas on drug delivery research	Intellectually stimulating forum for deliberations on current status & future trends on technological & biological aspects
173	13 - 16 Feb, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Preeti R. Wavikar	To present poster at "Nano SciTech" 2014	Preeti R. Wavikar
174	23-25 Feb 2014	Department of Pharmaceutical Sciences & Technology	Incremental Operating Cost	Neha Vivekanand Desai	To gain knowledge in the field of Pharmacy	Networking with renowned scientist
175	23-25 Feb 2014	Department of Pharmaceutical Sciences & Technology	Incremental Operating Cost	Shrikant Motiram Ghodse	To gain knowledge in the field of Pharmacy	Networking with renowned scientist
176	20-22 December 2014	Department of Pharmaceutical Sciences & Technology	Incremental Operating Cost	Gangurde Avinash Bhaskar	To attend the conference and present the poster at Delhi	Gangurde Avinash Bhaskar
177	20-22 December 2014	Department of Pharmaceutical Sciences & Technology	Incremental Operating Cost	Sharadchandra Dagadu Javeer	To attend the conference and present the poster at Delhi	Sharadchandra Dagadu Javeer
178	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Dalapathi Gugulothu	Workshop on softwares in Drug Discovery And Development	Research Students
179	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Amit Mirani	Workshop on softwares in Drug Discovery And Development	Research Students
180	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Meenal Ghune	Workshop on softwares in Drug Discovery And Development	Research Students
181	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Parth Joshi	Workshop on softwares in Drug Discovery And Development	Research Students
182	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Swati Vyas	Workshop on softwares in Drug Discovery And Development	Research Students
183	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Mahadeo Kamble	Workshop on softwares in Drug Discovery And Development	Research Students
184	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Priyanka Prabhu	Workshop on softwares in Drug Discovery And Development	Research Students

185	21-22 Jan, 2014	Department of Pharmaceutical Sciences & Technology	Conference	Preshita Desai	Workshop on softwares in Drug Discovery And Development	Research Students
186	19-20 April, 2014	Department of Pharmaceutical Sciences & Technology	Conference & Oral Presentation	Gauresh S. Somani	To attend conference & present research work	Gauresh S. Somani
187	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Rufi Tambe	To inculcate Safety principles & aspects in students	Rufi Tambe
188	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Pankaj D Jain	To inculcate Safety principles & aspects in students	Pankaj D Jain
189	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Priya Ghumatkar	To inculcate Safety principles & aspects in students	Priya Ghumatkar
190	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Chaudhari Kapil Sharad	To inculcate Safety principles & aspects in students	Chaudhari Kapil Sharad
191	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Trupti Kashinath Khatal	To inculcate Safety principles & aspects in students	Trupti Kashinath Khatal
192	18-19 March, 2014	Department of Pharmaceutical Sciences & Technology	Workshop On Safety Laboratory	Harish Kundaikar	To inculcate Safety principles & aspects in students	Harish Kundaikar
193	11th Oct to 13th oct, 2013	Department of Physics	International Conference	Arvind R. Singh	Participation will lead to interaction with renewed researcher & will broaden knowledge	Department of Institute
194	18-20 November 2013	Department of Physics	Conference	Arvind R. Singh	Participation will lead to interaction with renewed researcher & will broaden knowledge	Dept. Of Physics
195	19-21 Feb 2014	Department of Physics	International Conference	Arvind R. Singh	Participation will lead to interaction with renewed researcher & will broaden knowledge	Arvind R. Singh
196	10-12 March, 2014	Department of Physics	Conference	M.K. Malik, S.S. Parab, Anuja Jain	To present papers separately in the international conference and interact with eminant personalities in the field & research	self & felloe colleagues

197	3-4 January, 2014	Department of Physics	Conference	M.K. Malik, S.S. Parab, Anuja Jain, G.A. Arolkar, Ajinkya Trimnkhe	To present papers separately in the international conference and interact with eminant personalities in the field & research	self & felloe colleagues
198	16-02-2014 to 19-02-2014	Department of Physics	International Conference	Ajinkya Mahadev	To share, Discuss and desseminate the ideas of research trends in Bio Medical Engineering with respect to coatings & surfaces and discuss it with my peers	Myself and fellow collegues
199	10-14 June 2013	Department of Polymer & Surface Engineering	Workshop	Mr. Manoj Praharaj Bhatnagar	To study about Nano Synthesis Material Synthesis_ Characterization & Application	Mr. Manoj Praharaj Bhatnagar
200	20-Aug-13	Department of Polymer & Surface Engineering	Skill development	Miss. Shewatal Randive	Skill Development of students	B.Tech, M.tech & Ph.D students
201	30 Sept. - 3rd Oct., 2013	Department of Polymer & Surface Engineering	Participation in International conference to be held in New Delhi	Mukesh Kathalewal	To present a technical paper at the International conference,"Corcon"	Mukesh Kathalewal
202	11th Oct to 13th oct, 2013	Department of Polymer & Surface Engineering	Oral Presentation	Dipak S. Tathe	Oral presentation on "Synthesis of novel bio-based cross linker for epoxy resign" at Internal conference on advances in polymetric material 2013	Dipak S. Tathe
203	11th Oct to 13th oct, 2013	Department of Polymer & Surface Engineering	Oral Presentation	Manoj N. Mali	Presentation on "Preparation of silane cured PP-EPDM Thermo plastic vulcunizates & their effects on properties at ICAPM- 2013	Manoj N. Mali
204	11th Oct to 13th oct, 2013	Department of Polymer & Surface Engineering	Presenattaion at International conference on Advance Polymeric material 2013, Kottayam	Kunal V. Yeole	Presentation on "Corrosion protection of mild steel by using CNT loaded with 2-MBT in epoxy based coating" at ICAPM-2013, Kottayam, Kerala	Kunal V. Yeole
205	16-08-13	Department of Polymer & Surface Engineering	R & D Networking	Amarjeet A Pal	Study & Stability of superabsorbent polymer	PG

206	11-13 Oct. 2013	Department of Polymer & Surface Engineering	Poster Presentation	Rupali Nehete	Poster presentation at ICAPM: 2014, Kottayam Kerala	Rupali Nehete
207	11-13 Oct. 2013	Department of Polymer & Surface Engineering	Poster Presentation	Nikesh B. Samarth	Poster presentation at ICAPM: 2014, Kottayam Kerala	Rupali Nehete
208	11-13 Oct. 2013	Department of Polymer & Surface Engineering	Poster Presentation	Sunder T. Kelkar	Poster presentation at ICAPM: 2014, Kottayam Kerala	Rupali Nehete
209	11-13 Oct. 2013	Department of Polymer & Surface Engineering	Poster Presentation	Chandan Fuke	Poster presentation at ICAPM: 2014, Kottayam Kerala	Rupali Nehete
210	19-21st Feb, 2013	Department of Polymer & Surface Engineering	Conference	Thakar Rucha Atul	For Poster Presentation	Thakar Rucha Atul
211	19-21 Dec 2013	Department of Polymer & Surface Engineering	Presenting Paper at International Congress of Environment Research	Sunder T. Kelkar	Presenting Paper	Sunder T. Kelkar
212	4-7 Dec, 2013	Department of Polymer & Surface Engineering	Conference	Bhuwanesh K. Sharma	Scientific Paper presentation PPS-2013 International Conference	Bhuwanesh K. Sharma
213	19-21 Dec 2013	Department of Polymer & Surface Engineering	Presenting a paper in International congress of environmental Research	Parag R. Kulkarni	Presenting paper	Parag R. Kulkarni
214	06-08 Feb, 2014	Department of Polymer & Surface Engineering	Oral Presentation	Manoj N. Mali	Oral Presentation	Manoj N. Mali
215	06-08 Feb 2014	Department of Polymer & Surface Engineering	Poster Presentation	Avinash N. Khandagale	For Poster Presentation	Avinash N. Khandagale
216	06-08 February, 2014	Department of Polymer & Surface Engineering	Oral Presentation at Gold-CT,2014 NMU-Jalgaon	Rane Ajay Vasudev	To present oral presentation in International conference GOLD-ICT 201, Jalgaon	Rane Ajay Vasudev
217	06-08 February, 2014	Department of Polymer & Surface Engineering	Oral Presentation at Gold-CT,2014 NMU-Jalgaon	Rohit Sunit Pathak	To present oral presentation in International conference GOLD-ICT 201, Jalgaon	Rohit Sunit Pathak
218	07-Mar-14	Department of Polymer & Surface Engineering	Instruments	Dr. P. A. Mahanwar	For loading & unloading charges for instrument purchased under TEQIP	PSE Department
219	07-Mar-14	Department of Polymer & Surface Engineering	Instruments	Dr. P. A. Mahanwar	To purchase oil & Lubricant for installation of instrument	PSE Department

220	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Amol Baburao Hajare	Poster Presentation at NSPC, IICT Hyderabad	Amol Baburao Hajare
221	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Dinesh B Balgude	Poster Presentation at NSPC, IICT Hyderabad	Dinesh B Balgude
222	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Rohit Dattatray Karande	Poster Presentation at NSPC, IICT Hyderabad	Rohit Dattatray Karande
223	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Pathak Rohit Sunil	Poster Presentation at NSPC, IICT Hyderabad	Pathak Rohit Sunil
224	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Kunal D Wajarkar	Poster Presentation at NSPC, IICT Hyderabad	Kunal D Wajarkar
225	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Ajay V. Rane	Poster Presentation at NSPC, IICT Hyderabad	Ajay V. Rane
226	23-27 April 2014	Department of Polymer & Surface Engineering	Poster Presentation	Prachi H Karanjkar	Poster Presentation on 'VEOVA Based Binders for dirt pick up resistant architechtural paints'	Prachi H Karanjkar
227	21-23 Oct. 2013	Department of Textile & Pharma	Poster Presentation	Priti B Tayade	Latest knowledge to textile students & textile & Pharma industry	
228	17-Sep-13	Dyestuff Technology	Symposium	Kamlesh Shashikant Vadagaonkar	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
229	17-Sep-13	Dyestuff Technology	Symposium	Rajaram G. Dugane	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
230	17-Sep-13	Dyestuff Technology	Symposium	Sunil M. Rokade	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology

231	17-Sep-13	Dyestuff Technology	Symposium	Rajkumari Vijilata Devi	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
232	17-Sep-13	Dyestuff Technology	Symposium	Ashok M. Garande	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
233	17-Sep-13	Dyestuff Technology	Symposium	Hanuman Popat Kalmode	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
234	17-Sep-13	Dyestuff Technology	Symposium	Nazim Ahmad Abdul Aleem	The 27th International Carbohydrate symposium will cover all aspects of carbohydrate chemistry, biochemistry, biology, analytical tools and technologies.	Dyestuff Technology
235	3rd to 8th Oct,2013	Dyestuff Technology	Training in development of colorimetric sensors for anion/ metal cations	Yadav Urmiladevi	Study operating method and acquire full information on working principle of sensor	
236	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Manali Rajeshree	To inculcate Safety principles & aspects in students	Manali Rajeshree
237	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Jyoti Rathi	To inculcate Safety principles & aspects in students	Jyoti Rathi
238	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Balu Laxman Gadilohar	To inculcate Safety principles & aspects in students	Balu Laxman Gadilohar
239	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Pramila Balkrishna Thale	To inculcate Safety principles & aspects in students	Pramila Balkrishna Thale

240	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Pravin Nimba Borase	To inculcate Safety principles & aspects in students	Pravin Nimba Borase
241	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Avhad Kiran C	To inculcate Safety principles & aspects in students	Avhad Kiran C
242	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Bhalekar Sulochana Balasaheb	To inculcate Safety principles & aspects in students	Bhalekar Sulochana Balasaheb
243	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Archana Ashok Bhagwat	To inculcate Safety principles & aspects in students	Archana Ashok Bhagwat
244	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Manish M Raikwar	To inculcate Safety principles & aspects in students	Manish M Raikwar
245	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Dhanraj R. Mohbiya	To inculcate Safety principles & aspects in students	Dhanraj R. Mohbiya
246	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Priyanka A. More	To inculcate Safety principles & aspects in students	Priyanka A. More
247	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Preeti pant	To inculcate Safety principles & aspects in students	Preeti pant
248	18-19 March, 2014	Dyestuff Technology	Workshop On Safety Laboratory	Patil Yogesh Ashok	To inculcate Safety principles & aspects in students	Patil Yogesh Ashok

INNOVATION NETWORKING OF TEQIP INSTITUTES IN MAHARASHTRA

Project supported by :
Ministry of Human Resources and Development And Government of Maharashtra

PROFESSOR V. G. GAIKAR, *FNAE*
Institute Coordinator, TEQIP, ICT
Department: Chemical Engineering, ICT Mumbai.

RESEARCH INTERESTS:
Renewable Energy sources, Synthesis of nanoparticles for photochemical generation of hydrogen, CO_2 sequestration by reactive sorption on functionalized polymers, Molecular simulation of adsorptive separation processes, Molecularly Engineered Design of selective ligands, Reactive separation processes, Natural products and Green Technology processes, Hydrotropy, Surface Science and Engineering.

PROFESSOR A. B. PANDIT
Dean, RCRM ICT Mumbai.

RESEARCH INTERESTS:
Multiphase Rector Design, Cavitation Phenomena, Pollution control, Bubble Dynamics, Acoustic signal processing, Mixing and Hydrodymanics and Cavitational Transformations.

DR. P. R. NEMADE.
Departments: Chemical Engineering & Oils, Oleochemicals & Surfactants Technology, ICT, Mumbai.

RESEARCH INTEREST:
Membranes,Waste Management,Carbon Nanomaterials,

PROFESSOR M.D.TELI
Department: Fibres And Textile Processing Technology

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. Application of Nanotechnology and biotechnology for process intensification. Natural Dyes and functional synthetic dyes and their application on textiles. Chemical Processing and Modification of Natural and Synthetic fibers and Thickeners.

MR. S. KASTHURIRANGAN

Department: Physics, ICT, Mumbai.

RESEARCH INTERESTS:

Accelerator-based Atomic and Molecular Physics, Ion-Atom and Electron-Atom Collisions, Physics of Highly Charged Ions, Color Physics.

DR. R. D. KALE

Department: Fibres & Textile Processing Technology, ICT, Mumbai

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,

DR. RATNESH JAIN

Department of Chemical Engineering, ICT Mumbai.

RESEARCH INTERESTS :

- Novel Drug Delivery Systems, Nanoparticulate Drug Delivery, Drug Delivery Devices, Confocal Microscopy, Preclinical Imaging, Vaccines, Infectious Diseases, Microscopy Radioimaging Techniques, Cellular Models.

DR. PRAJAKTA DANDEKAR JAIN

Department: Pharmaceutical Sciences & Technology,ICT Mumbai

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.

DR. Y. S. MAHAJAN

Department:Chemical Engg., DBATU, Lonere.

RESEARCH INTERESTS:

Reaction Engineering and catalysis, Reactive separation, Reactive and Catalytic Distillation, Energy Engineering.

DR.M SADAIAH

Department: Mechanical Engg., DBATU,Lonere.

RESEARCH INTERESTS:

Machining of Advanced Materials, Micromachining, Nanomachining, Tool Condition Monitoring, Photochemical Machining, CAPP.

DR. V. B. TUNGIKAR

Department: Production Engineering, SGGSIET, Nanded.

RESEARCH INTERESTS:

Finite Element Analysis, Heat Transfer, Composites.

DR. NEETU JHA

Department : Chemical Engg., ICT, Mumbai.

RESEARCH INTERESTS:

Nanotechnology, Graphene

DR. V. H. DALVI

Department: Chemical Engg., ICT, Mumbai.

RESEARCH INTERESTS:

Molecular simulation, solar energy

DR. V. D. GOTMARE
Head Textile Manufactures Dept., VJTI, Mumbai

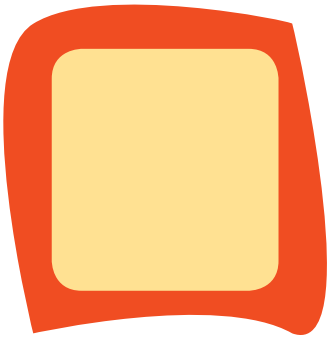
RESEARCH INTERESTS:
Textile designs

MR. D. N. JADHAV
Department: Mechanical Engg, SPCE, Mumbai

RESEARCH INTERESTS :
Fracture Mechanics,FEM, Stress Analysis

DR. NILESH RAYKAR
Department: Mechanical Engg, SPCE, Mumbai.

RESEARCH INTERESTS:
Mechanical designs, Stress Corrosion Cracking



MRS. ANUPA SUBNIS
Department: Electrical Engg, SPCE, Mumbai

RESEARCH INTERESTS:
Visual Homing

MRS. VIDYA P. JOSHI
Department: Electrical Engg, SPCE, Mumbai.

RESEARCH INTERESTS:
electronics

PROFESSOR HOLAMBE
Department: Electrical Engg, SGGSIET, Nanded

RESEARCH INTERESTS:
IRIS recognition

PROJECT ASSISTANTS WORKING ON INNOVATION NETWORKING:

- Nikit Nair.
- Rutuja Kamble.
- Pravin Chavan.
- Prachity Wankhede.
- Nikhil B Ladhe.
- Rahul R Fulmali.
- Shirish Kadam.
- Rohit A Khake.
- Parija R Ghordadekar.
- Tejal Pant.
- Ronak Gudhka.
- Holey Ajinkya Murlidhar.

INN OFFICE STAFF:

Ketan Gholap(Administration)

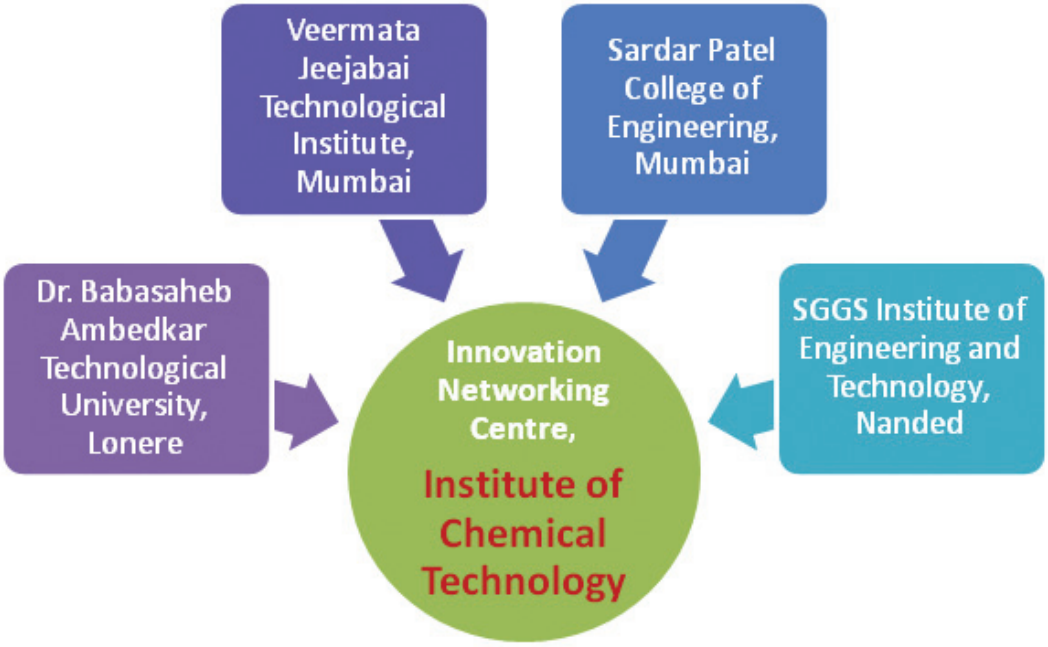
Anup Salgaonkar (Accounts)

Institute of Chemical Technology (ICT) proposed to form a virtual **Innovation Networking of TEQIP Institutes in the State of Maharashtra** who were willing to participate in the Networking Projects to share existing infrastructure and expertise to innovate New Products/ Processes/ Systems

THE FOLLOWING TEQIP INSTITUTES AGREED TO PARTICIPATE IN THE INNOVATION NETWORKING AND 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 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 supports out-of-box ideas to develop proof of concept.



BACKGROUND OF THE INNOVATION NETWORKING

The Ministry of Human Resources & Development, GoI, invited ICT to participate in a meeting on 1st August 2013, 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 long nurtured organic links with Chemical and Allied industries and is recognised recently 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, participated in the discussion. 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 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 at

ICT and at different institutes. It is hoped that this Networking will use current expertise and infrastructure available at the partner institutes to develop/create prototypes for technology development and technology transfer to Industry and also for the benefit of the local society.

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 has provision of manpower, components for the prototypes, contingency, travel and hiring services if facilities are not available at any partner institutes. Above five networking institutes have agreed to deliver the following products or processes at the end of the project.

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 shall be always ready 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.

In the absence of necessary infrastructure for the indigenous technology development, Institute of Chemical Technology (ICT) has taken the initiative to form a virtual network of Institutes in the State of Maharashtra, which brings together different engineering disciplines to build products and prototypes based on their research. It is expected that the INN shall help different industries in the region to maintain competitive edge in global scenario and society, in general.

The Innovation Networking involves use of current infrastructure at and core strength(s) of each partner Institute to develop innovation products/processes for commercialization. Most innovations require partners from other disciplines and thus creation and operation of Innovation Networking of Indian Institutes (INN) may become imperative.

INSTITUTE OF CHEMICAL TECHNOLOGY (ICT)

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 contributions to Chemical Engineering, Chemical Technology and Pharmaceutical Sciences, Biotechnology and allied sciences. TEQIP Phase I- was a major catalytic factor in ICT getting autonomy in 2003 and finally instrumental in becoming a Deemed University in 2009. ICT's vibrant research culture is a symbiosis of academic excellence and practical relevance over the past 80 years.

ICT is one of the topmost performing institutions of the country in the field of Chemical Engineering and Technology, and is 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. ICT's close

relationship to the chemical and allied industries 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. The **ICT was been 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.

ICT 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 has undisputed reputation of being an Institute that has strong linkages with Chemical and allied industries over several decades. ICT is cited at the best example of institute-industry-government collaboration by MHRD under TEQIP phase-II. The **ICT also received in 2013 the AICTE-CII Award for Institute with best Industry-Academia Interactions**. Several of its alumni and faculty have contributed immensely for the growth of Indian Chemical industry, across all scales of operations.

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. Converting this knowledge into a well developed Technology, however, needs a strong supportive infrastructure that can help in the technology transfer to industry in a more meaningful way. ICT strives to be a premier institute engaged in education, training and research in the field of Chemical Engineering/ Technology, Pharmaceutical sciences, and all 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 is key parameter in order to survive in the global competition and in the research, a majority of funding is spent today in purchasing equipments of worth of crores from companies abroad. The academia and research fraternity in Indian institutes should work together to develop competitive technologies and products that can support Indian industries as well as society in general for their needs.

The projects under this scheme are focussed to build new products/processes with clearly defined applications and thus are different from research projects in other schemes, even regular TEQIP programs. Each product from innovation project shall be a prototype for direct use as desired.

(b) **Each project has a requirement of**

- manpower
- Components for the system and its fabrication based on the project.
- contingency, travel, hiring services if facilities are not available at any partner institutes.

(c) Each expert on the review and monitoring committee shall be giving one to two days for the project meetings every month.

(d) A Innovation Networking centre has been established at ICT with three support staff members of appropriate qualifications and expertise for administration and finance. The office coordinates all the activities of the Innovation Networking.

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.

iv) 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.

v) The cost of operation and maintenance of such units shall be jointly shared by the partner institutes.

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	Professor V G. Gaikar	Professor and Project Coordinator	vg.gaikar@ictmumbei.edu.in	09920446256
2	Professor A.B. Pandit	Professor and Project co-Coordinator Dean(R&D)	ab.pandit@ictmumbei.edu.in	09920408067
4	Dr. P.R. Nemade	Member	pr.nemade@ictmumbai.edu.in	022-33612101
5	Shri S. Kasthurirangan	Member	s.kasthurirangan@ictmumbai.edu.in	022-33612666
6	Dr. R.D. Kale	Member	rd.kale@ictmumbai.edu.in	022-33612813
7	Dr. V.H.Dalvi	Member	vh.dalvi@ictmumbai.edu.in	022-33612101
9	Dr. Neetu Jha	Member	nr.jha@ictmumbai.edu.in	022-33612101
10	Dr. Ratnesh Jain	Member	rd.jain@ictmumbai.edu.in	022-33612029

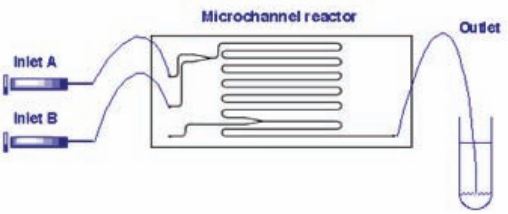
INSTITUTES PARTICIPATING IN THE INNOVATION NETWORKING PROJECT

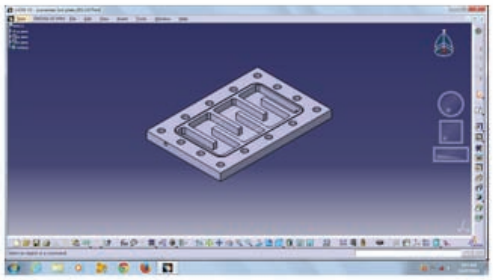
No	Institute	Areas of expertise at each Institute	Participant Faculty members
1	Institute of Chemical Technology, Matunga, Mumbai	Chemical Engineering, Textile Processing, Biotechnology, Pharmaceuticals Water management	Professor V G. Gaikar Professor A.B. Pandit Professor M.D. Teli Dr. R.D. Kale Dr. Ratnesh Jain Dr. Neetu Jha Dr. Parag Nemade Mr. S. Kasthurirangan Dr. V.H. Dalvi Dr. Prajakta D.Jain
2	Veermata Jeejabai Technological Institute, Matunga, Mumbai	Mechanical Engineering, Textile Technology	Dr. Vijay Gotmare
3	Dr. Babasaheb Ambedkar Technological University, Lonere, Raigad	Mechanical Engineering, Chemical Engineering	Dr. M. Sadaiah Dr. Yogesh Mahajan Dr. Sachin Naik Dr. Abhijit Chavan
4	Sardar Patel College of Engineering, Mumbai	Mechanical Electronics Instrumentation	Dr. Nilesh Raykar Mr. D N Jadhav Mrs. Anupa Subnis Mrs V.P. Joshi
5	SGGS Institute of Engineering and Technology, Nanded	Electrical, Electronics, Civil, Mechanical	Professor Holambe Dr. V.B. Tungikar,

THE FOLLOWING PROJECTS ARE CURRENTLY ON UNDER INNOVATION NETWORKING PROJECT

- Microchannel reactors for highly exothermic and high pressure and high temperature systems.
- Sensors for pesticides and biological species in water management and therapeutic materials.
- Continuous and tunable Microwave assisted Microreactor system for chemical reactions.
- Microwave assisted microreactor for chemical manufacturing and natural product extraction.
- Continuous and tunable cavitation system for chemical reactions.
- Ultrasound assisted sub-litre size continuous water purifier.
- Lab-scale self-sustaining pyrolysis system for polymer-to-chemicals reactor.
- Mosquito-repellent textiles using sustainable and eco-friendly materials.
- Laboratory scale inexpensive gas chromatograph.
- Continuous Enzyme Reactor in microcapillary bundles with reduced pressure drop.
- Solar energy based biomass to chemical conversion system.
- Robust Iris Recognition system.
- Polymer-Metal composite stent(s) for drug delivery in angioplasty.
- Design and fabrication of Improved Mobile blancher for turmeric processing.

MICROCHANNEL REACTORS FOR HIGHLY EXOTHERMIC AND HIGH PRESSURE AND HIGH TEMPERATURE SYSTEMS





Need of innovation: *Currently there is 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 cannot be used.*

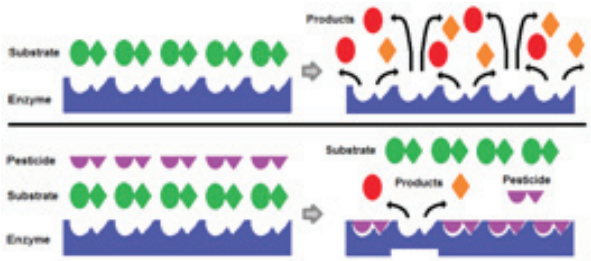
Outcome of this project will be low cost micro channels and microreactors. As and when these products are commercialized, it will help the chemical industries to replace the conventional reactors with microreactors. So the efficiency of the process industries will be improved. Even today, we are importing the microreactors at very high cost and it is not affordable to Indian process industries. With this low cost microreactor technology, we can provide great support to Indian economy.

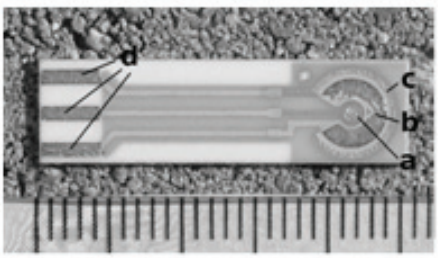
Three institutes ICT, DBATU and SPCE will work on this project. Innovation involved in the project is to manufacture low cost Micro-reactors for high T & P operations. The expertise brought in for the project from ICT includes Chemical Characterization and high end characterization facilities, Chemical Reaction Engineering Analysis, Process Design. The expertise required for project from DBATU is Microstructure/ fabrication facility and from SPCE is Electronics, Instrumentation and Control system designs.

Names of Faculty member(s) as PIs :

- *ICT : Professor V. G. Gaikar*
- DBATU : Dr. M. Sadaiah
- SPCE : Mrs. Anupa *Subnis, Dr.(Mrs.*

SENSORS FOR PESTICIDES AND BIOLOGICAL SPECIES IN WATER MANAGEMENT AND THERAPEUTIC MATERIALS.





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.

Expected outcome and its impact on regional economy: 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 are 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.

Names of Faculty member(s) as PIs :

- ICT : Dr. Neetu Jha, Dr. P.R. Nemade, Dr. Ratnesh Jain.
- DBATU : Dr. M. Sadaiah.
- SPCE : Mrs. Anupa Subnis, Dr. (Mrs) V.P. Joshi, Mr. B.B. Pimple.

CONTINUOUS AND TUNABLE MICROWAVE ASSISTED MICROREACTOR SYSTEM FOR CHEMICAL REACTIONS.

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 microreactors.

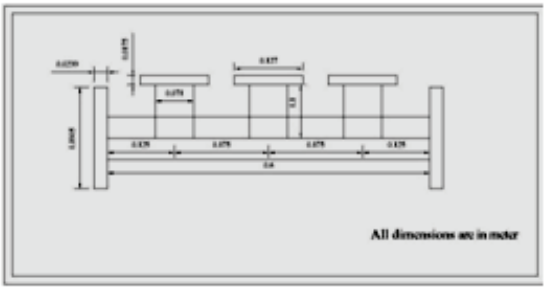
Expected outcome and its impact on regional economy: Outcome of this project will be microwave assisted microreactors for continuous manufacturing systems and process intensification of pharmaceutical products. The systems shall be useful for low volume, and high value products as speciality chemicals.

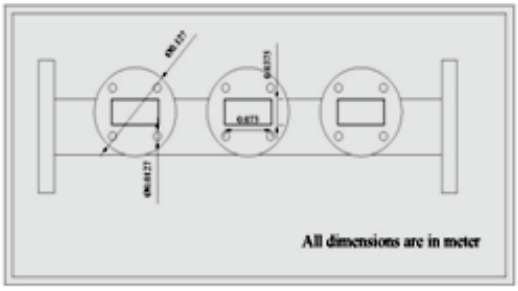
Three institutes ICT, DBATU and SPCE are working on this project. The innovation involved in the project is directed microwave energy transfer to microreactor systems for catalytic and non-catalytic reactions. The expertise for project from ICT is Microwave System analysis, Chemical Characterization and high end characterization facilities, Chemical Reaction Engineering Analysis and Process Design. The expertise required for project from DBATU is Microstructure/ fabrication facility. Deliverables of this project are Microreactor system. SPCE team provides the support for electronics and instrumentation.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Dr. Neetu Jha, Mr. S. Kasthurirangan
- DBATU : Dr. M. Sadaiah
- SPCE : Professor N.R. Raykar

CONTINUOUS AND TUNABLE MICROWAVE REACTOR SYSTEM FOR CHEMICAL MANUFACTURING AND EXTRACTION OF NATURAL PRODUCTS.





Need of innovation: Several systems are available in market for microwave extraction and synthesis. However, most of these units work at 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 100 W/m3- to 1kW/m3. Also each reaction system, needs specific designs and need to be tailor-made for the applications. Waveguides will have to designed for optimum supply of energy where the energy supply is required.

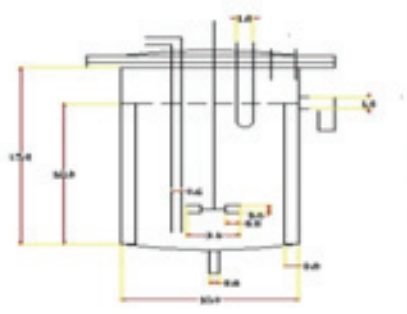
Expected outcome and its impact on regional economy: Outcome of this project will be a microwave assisted reactors for continuous manufacturing systems and extraction system for active ingredients from natural products.

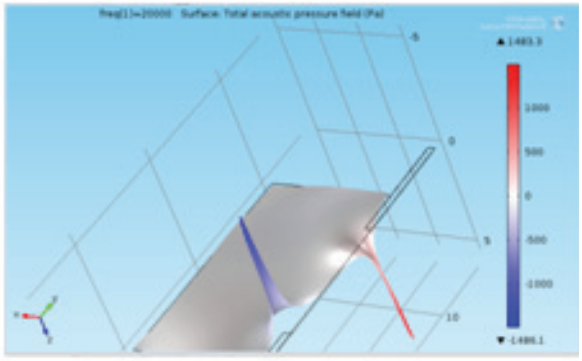
ICT and SPCE teams are working on this project with corresponding Project Investigators. Innovation involved in the Project is power tunable, and continuous microwave assisted reactors for continuous chemical manufacturing and extraction of natural products. The expertise required for project from ICT is Microwave System analysis, high end characterization facilities, Chemical Reaction Engineering Analysis. SPCE team provides support for mechanical fabrication and electrical engineering.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Dr. Neetu Jha, Mr. S. Kasthurirangan
- SPCE : Professor N.R. Raykar.

CONTINUOUS AND TUNABLE CAVITATION SYSTEM FOR CHEMICAL REACTIONS.





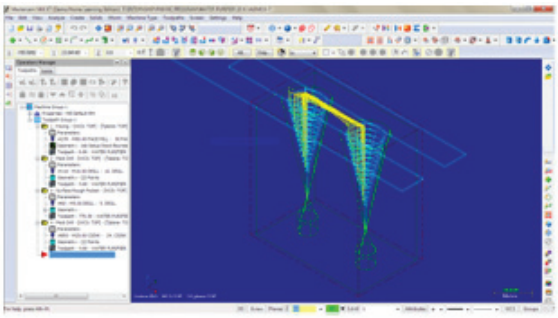
Need of innovation: Several systems are available in market for extraction and synthesis. However, most of these units work for maximum power input having density of a few MW/m3. Most of these systems are not tunable and not suitable for continuous manufacturing because of high energy input. There is 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

Expected outcome and its impact on regional economy: Outcome of this project will be a cavitation assisted reactors for continuous manufacturing systems and extraction of natural products. Two institutes ICT, DBATU have been working on this project with corresponding Project Investigators. Innovation involved in the Project is tunable, and continuous cavitation intensified reactors for continuous chemical manufacturing. The expertise required for project from ICT is Cavitation analysis, High end characterization facilities and Chemical Reaction Engineering Analysis. Expertise required for project from DBATU is Microstructure/ fabrication facility. Deliverables of this project are tunable, continuous cavitation intensified reactors for chemical manufacturing.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Professor A. B. Pandit.
- DBATU : Dr. M. Sadaiah.

CAVITATION ASSISTED SUB-LITRE SIZE CONTINUOUS WATER PURIFIER.



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.

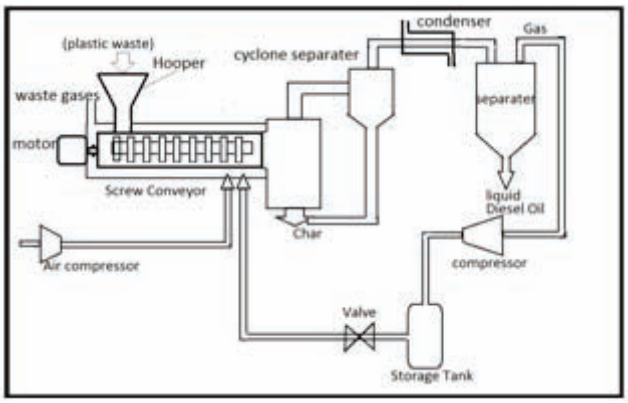
Expected outcome and its impact on regional economy: Outcome of this project will be a cavitation assisted water purification system. The product should cost less than the current water purifiers available in market or supplement them at reduced power consumption.

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.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Professor A. B. Pandit.
- DBATU : Dr. M. Sadaiah.

LAB-SCALE SELF-SUSTAINING PYROLYSIS SYSTEM FOR WASTE POLYMER-TO-CHEMICALS REACTOR



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.

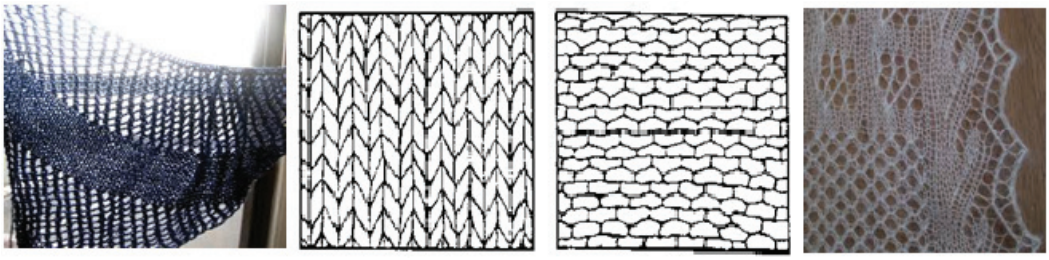
Two institutes ICT and SPCE are working on this project with corresponding Project Investigators. Innovation involved in the Project is development of Lab-scale unit for studies in pyrolysis of plastic waste to convert it into liquid fuel. Expertise required for project from ICT is Chemical Characterization 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.

Expected outcome and its impact on regional economy: Deliverables of this project is Lab-scale unit for pyrolysis of plastic waste useful for localized applications.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar.
- SPCE : Dr. N. R. Raykar, Mr. D N Jadhav.

MOSQUITO-REPELLENT TEXTILES USING SUSTAINABLE AND ECO-FRIENDLY MATERIALS.



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.

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.

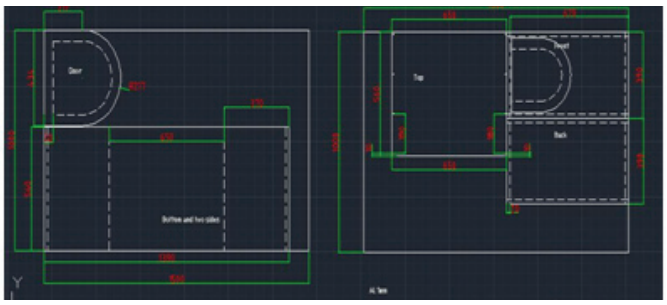
Impact on regional economy: Using country-level regressions, researchers showed that nations with successful malaria eradication programs enjoyed substantially higher growth rates in the five years following malaria eradication. Researchers estimate that, given the prevalence of malaria in the region, the disease reduces GDP growth per annum by 0.55%. The estimates of labor day's loss due to malaria amount to 1328.75 million man-days per year. The total expenditure incurred on morbidity due to malaria is Rs. 7.18 per capita per annum. The annual economic loss due to malaria is approximately Rs. 76,660 million. Thus by having an effective mechanism in terms of mosquito repellent fabrics the dangers associated with mosquito borne diseases can be eliminated resulting in saving of precious human life and financial implications associated with it.

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.

Names of Faculty member(s) as PIs :

- ICT : Professor M. D. Teli, Dr. R. D. Kale.
- VJTI : Dr. V. D. Gotmare.

LABORATORY SCALE INEXPENSIVE GAS CHROMATOGRAPH.



Need of innovation: Analytical instruments are expensive units and mostly imported. Most of these units are not manufactured in India. Majority of chemistry labs in colleges have

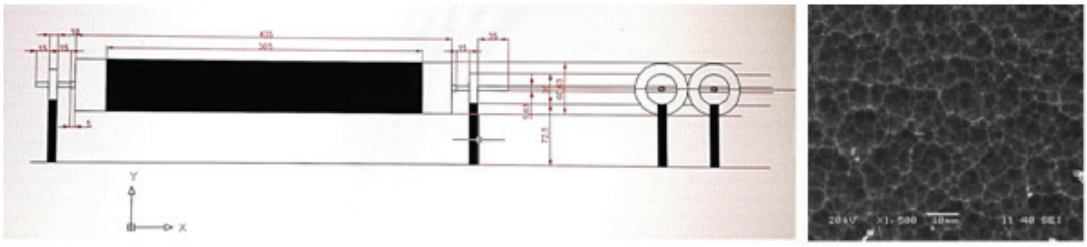
o access to such units because of cost. The units thus should be produced at lowest cost possible.

Expected outcome and its impact on regional economy: Outcome of this project will be a Low cost Gas chromatograph to be made available for Colleges for educational purpose at affordable cost. The two institutes ICT, SPCE have been working on this project with corresponding Project Investigators. Innovation involved in the project is an inexpensive gas chromatograph. The expertise required for project from ICT is Chemical Characterization and high end characterization facilities and Process Design. The expertise required for project from SPCE is Mechanical fabrication, electrical circuit designs and instrumentation.

Names of Faculty member(s) as PIs :

- ICT : Dr. Neetu Jha, Mr. S. Kasthurirangan, Dr. P. R. Nemade, Professor V G Gaikar
- SPCE : Dr. N. R. Raykar.

CONTINUOUS ENZYME REACTOR IN MICROCAPILLARY BUNDLES WITH REDUCED PRESSURE DROP.



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.

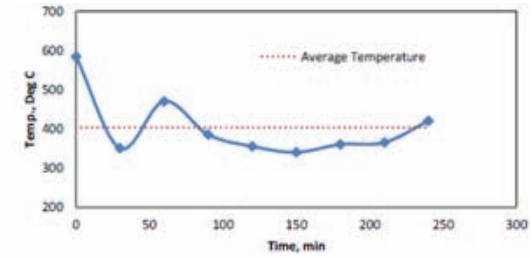
Expected outcome and its impact on regional economy: Outcome of this project will be Low cost enzyme reactor cartridges of different enzymes for different biotransformations for continuous operations to be made available for Pharma industries and science Colleges for educational purpose.

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.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Dr. P.R. Nemade.
- DBATU : Dr. Y.S. Mahajan

SOLAR ENERGY BASED BIOMASS-TO-CHEMICAL CONVERSION SYSTEM



Need of innovation: Energy for pyrolysis is either electric or thermal in most systems. Use of solar energy will make it a renewable energy utilization. It shall also be prototype for storing solar energy in useful liquid or gaseous forms. The energy integration will provide solutions for large agricultural waste utilization. It may also provide local electricity generation whenever power is not available from the grid, by burning the gas in the generator.

Expected outcome and its impact on regional economy: Outcome of this project will be a solar energy based biomass-pyrolysis system.

Two institutes ICT and DBATU are developing solar energy based biomass-to-chemical conversion system. The expertise required for project from ICT is solar concentrators, high end characterization facilities, Process Design and Pyrolysis systems. The expertise required for project from DBATU is Mechanical Fabrication.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Professor A.B. Pandit.
- DBATU : Dr. Y.S. Mahajan.

ROBUST IRIS RECOGNITION SYSTEM

Need of innovation: Advancement in the technology has made biometric systems more accurate, convenient, and secure than the widely accepted means of identification such as ID cards. A biometric system uses unique and measurable physiological or behavioral traits of people to establish their identity; hence biometrics has emerged as a reliable person identification method. Iris recognition emerges as one of the most useful modalities for biometric recognition in last few decades. The iris has an interesting structure and presents plentiful texture information. The uniqueness and variability are the keys to successful personal identifications, in order to distinguish between templates.

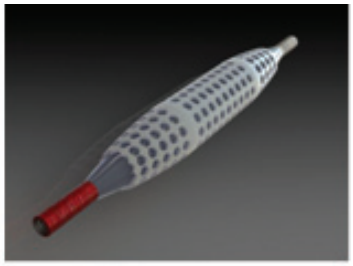
Expected outcome and its impact on regional economy: Outcome of this project will be Robust Iris Recognition System as a prototype which is affordable and robust in application.

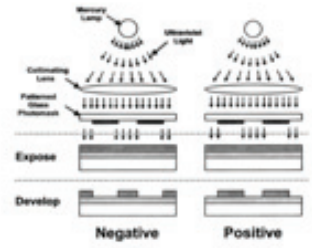
Two institutes ICT and SGGSIET, Nanded are working on this project with corresponding Project Investigators to develop Iris recognition system for biometric recognition. The uniqueness and variability of the IRIS are the keys to successful personal identifications. SGGSSIET has designed an algorithm for robust Iris recognition system. The expertise required for project from ICT is High end characterization facilities. The expertise required for the project from SGGS is Electronics and IT, Signal and Image processing.

Names of Faculty member(s) as PIs :

- ICT : Dr. Neetu Jha, Mr. S. Kasturirangan.
- SGGSIET : Professor R. S. Holambe.

POLYMER-METAL COMPOSITE STENT(S) FOR DRUG DELIVERY IN ANGIOPLASTY





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.

Expected outcome: Cost effective technology for stent which shall be Biocompatible and biodegradable polymer fortified to provide sufficient tensile strength. In USA, various industries are involved in development of stent products and recently Abbott has notified its plans to launch polymer based stents in the country. The same stent has already been commercialized in the European and Latin American markets and has recently been introduced in India.

In India, Sahajanad Medical Technologies, Surat, has developed considerable expertise and competency in the production of stents for coronary restenosis. The company has commercialized both, steel as well cobalt-chromium stents. There are only few industries in India, who have acquired expertise in designing stents and developing drug loaded stents for therapeutic applications. The Indian academia also possesses limited expertise in the development of stent products and related technologies. ICT and Shree Chitra Institute are actively working in collaboration with industry for development and commercialization of stent technologies.

Thus, India is still striving to achieve a good position in the global market with regards to development of technologies for design and development of drug-eluting stents. In addition to the limited expertise, the technologies currently employed for the manufacturing of stents are

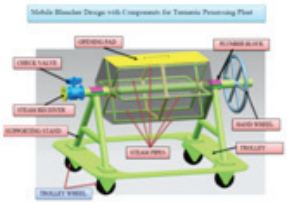
extremely expensive, thus increasing the cost of the final product. Although the cost of bare metal stents and drug eluting stents were slashed by the Government of India in late 2011, the cost of bioresorbable stents is still expected to be around Rs 3 lakh, which is beyond the reach of majority of the population in India and other developing countries. Thus there exists a strict need for developing indigenous, cost-effective technologies for designing drug-eluting stents.

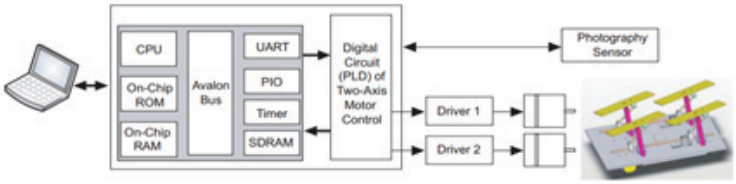
Two institutes ICT and DBATU are developing composite stents from metal and biodegradable polymers at affordable cost. Expertise required for project from ICT is Matrix development, drug incorporation, drug release, expertise pertaining to biomedical aspects of stent design. The expertise required for project from DBATU is Microstructure/ fabrication facility. Deliverables of this project is design of cobalt nanoparticle impregnated polylactide based biodegradable stent.

Names of Faculty member(s) as PIs :

- ICT : Dr. Ratnesh Jain; Dr. Prajakta Jain, Professor V G Gaikar
- DBATU : Dr. M. Sadaiah.

DESIGN AND FABRICATION OF SOLAR ENERGY INTEGRATED MOBILE BLANCHER FOR TURMERIC PROCESSING





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.

Impact on regional economy: 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.

Two institutes ICT and SGGSIET are working on this project with corresponding Project Investigators. Innovation involved in the Project is 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 is fabrication facility and Instrumentation and Control. Deliverables of this project is Solar Energy integrated Improved Mobile blancher for turmeric processing.

Names of Faculty member(s) as PIs :

- ICT : Professor V. G. Gaikar, Professor A.B. Pandit.
- SGGSIET : Dr. B.M. Dabade , Dr. V.B. Tungikar.

Innovation is a process that brings together various novel ideas, small and big alike, in a way that they have an impact on society. Every single innovation begins with someone asking, "what if?" Someone and everyone can ask that little question that can unlock big possibilities.

These are some of the challenges facing India as a nation today, which require innovative thinking and a multi-disciplinary approach for their resolution. The Innovation Meet helped to start answering these and other relevant questions. We hope to foster the growth of a nationwide network of institutions and individuals to help solve these problems at the national and even global level.

The meet was kept open to **Faculty Members and Research Student** delegates from **Engineering Institutes and Science Colleges**. Some of India' finest minds as academicians and Industry experts talked about Innovation in this meet

SPEAKERS AT THE MEET

Professor G. D. Yadav, Vice-Chancellor, ICT
Mr. Hiranmay Mahanta, TechPedia Ahmedabad
Dr. Surendra Kulkarni, SABIC, Bangalore
Dr. Nitant Mate, Kirloskar Integrated Technologies Ltd, Pune
Dr. Aravind Chinchure, Reliance Innovation Centre, Pune
Dr. Nitin Deshmukh, Kotak Finance, Mumbai
Dr. Nitin Deshpande, Unilever Industries (P) Ltd, Bangalore
Professor A. B. Pandit, ICT, Mumbai
Professor V G Gaikar, ICT, Mumbai
Dr. Ramaswamy, C-CAMP and inStem, Bangalore

PARTICIPANTS OF TEQIP INNOVATION MEET-2013 AT ICT

Sr. No.	Name of the Participants	Name of the Institution
1	M Basha	Anurag Engineering College
2	T Nageswara Rao	Anurag Engineering College
3	Paran Jyoti Sharma	BMS College of Engineering, Bangalore, Karnataka
4	Sainath K	BMS College of Engineering, Bangalore, Karnataka
5	Dr. Sudhansu Sekhar Sahoo	The College of Engineering and Technology
6	Dr. Surajit Chattopadhyay	MCKV Institute of Engineering
7	Onkara Perumal P.	National Institute of Technology, Warangal
8	Sroj Kumar Patel	NIT Rourkela
9	Amey Deepak Katdare	Rajarambapu Institute of Technology
10	Shivananda R Pujara	Rajarambapu Institute of Technology
11	Vidyullata Joshi	Sardar Patel College of Engineering
12	Dr. Asimananda Khandual	The College of Engineering and Technology
13	Sudheer A	TKM College of Engineering
14	Arun S Raj	TKM College of Engineering
15	Professor J. Hayavadana	University College of Technology
16	Professor S. Ram Mahan Rao	University College of Technology
17	Mr. Kale S. B.	Shivaji University, Kolhapur
18	Professor Bombale U. L.	Shivaji University, Kolhapur
19	Prashant Jindal	UIET, PU, Chandigarh
20	Dr. S. B. Sharma	SGGSI E&T, Nanded
21	Dr. H. N. Thati	CET, Bhubaneswar
22	Dr. Prashant Jain	SIRT, Bhopal
23	Ravi Umaye	SIRT, Bhopal
24	Professor I. A. K. Reddy	NIT Warangal
25	Dr. A. Venu Vinod	NIT Warangal
26	Professor Anupa Sabnis	Sardar Patel College of Engineering
27	Professor P. V. Devarajan	ICT, Mumbai
28	Dr. B. Padmaja Ravi	JNTU, Hyderabad
29	Dr. S. M. Sontakke	ICT, Mumbai
30	Professor B. B. Biswal	NIT Rourkela
31	Dr. Purananand V Bhale	S V National Institute of Technology, Surat
32	Dr. K. Pramanik	NIT Rourkela
33	Dr. M. Asha Ravi	JNTU, Hyderabad
34	Dr. Madhukar S. Tandale	Dr. Babasaheb Ambedkar Technological University, Lonere
35	Atul H. Bari	ICT, Mumbai

36	Supriya Hemchandra Raut	ICT, Mumbai
37	Shwetha K. Vyas	ICT, Mumbai
38	Dharmendra Kumar Khatri	ICT, Mumbai
39	Vinit K. Bajaj	ICT, Mumbai
40	Swati Vyas	ICT, Mumbai
41	Karan Chavan	ICT, Mumbai
42	Nisha Kadam	ICT, Mumbai
43	Swati Bharat Jadhav	ICT, Mumbai
44	Mandar P Badve	ICT, Mumbai
45	Yogesh Choughule	ICT, Mumbai
46	Rahul S. Patil	ICT, Mumbai
47	Manoj Pakash Deshmukh	ICT, Mumbai
48	Ajinkya Ghadge	Rajarambapu Institute of Technology
49	Ajinkya Sakhare	Rajarambapu Institute of Technology
50	Prathamesh Shastri	Rajarambapu Institute of Technology
51	Amar nalavade	Rajarambapu Institute of Technology
52	Shubham Kudale	Rajarambapu Institute of Technology
53	Amey Moreshwar Marathe	Sinhgad Institute of Pharmacy
54	Sammit E. Karakar	ICT, Mumbai
55	Girendra Pal Singh	ICT, Mumbai
56	Ghanshyam Bhosle	ICT, Mumbai

DISCUSSION FOR ICT MODEL FOR INNOVATION AND NETWORKING MEETING ON 11TH SEPTEMBER 2013

ICT had prepared a concept note on the lines of Germany's Fraunhofer Model, for the Western India with the proposed name of the model as "ICT R&T Park". In this regard, a meeting was conducted by ICT with TEQIP-II project institutions in the Western region on 11th September 2013. The entire Program was conducted in the presence of MHRD appointed observers

ISB, Hyderabad	Sridhar Seshadri	MHRD observer
IIT, Hyderabad	Dr. Vinod Janardhanan, HoD of Chemical Engineering IIT-Hyderabad	MHRD Observer
NITIE, Mumbai	Dr. Karuna Jain, Director	MHRD Observer
NPIU	Ms Puja Mehra	Sr. Advisor and Coordinator

CONCEPT NOTE FOR INNOVATION NETWORKING OF INDIAN INSTITUTES (INN)

Major Universities and academic Institutes in the country now have research as a regular activity. All TEQIP supported Institutes, in particular, have increased research activity significantly in the second phase of the project. However, lack of cohesive infrastructure hinders the Technology Development. Creating the necessary infrastructure is far away in future. Fortunately, some of the Institutes have developed a good infrastructure for research which can be used optimally by networking of these institutes. In the absence of necessary development infrastructure of a Research Park, a virtual network of Institutes willing to participate in the Innovation Networking Project was proposed by ICT in the First Phase.

The phase I of Innovation Networking is currently on and involves use of current infrastructure at and core strength(s) of each Institute to develop innovation products/processes for commercialization. Most innovations require partners from other disciplines and thus InNovation Networking of Indian Institutes may become imperative and a precursor of the ICT's Research & Innovation Park. However, because of the funding pattern under TEQIP, despite the interest and willingness of many Institutes from other States, the current INN project is restricted to the State of Maharashtra where the State has funded 25% of the project cost.

In the Phase-II of the project the proposal for supporting the Innovation Networking will be put up to MHRD for funding mostly for facilities which are not available at any Institute for completion of selected projects and for supporting operations from others who are not part of the networking, Manpower, cost of outsourcing, use of sophisticated instruments, etc. No large infrastructure investment is envisaged in the Networking Model.

The Research facilities at each Institute will be made available to partner Institutes at pay-per-use principle. The cost of the development of the Innovation project(s) should be supported by MHRD through TEQIP to the partner Institutes as their project proposals.

A monitoring Committee of Networking Institutes will monitor the progress of the Project every month to ensure the completion of projects as quantifiable output, in terms of Products, patents, prototypes & demonstrable technologies. Each project will have final techno-economic feasibility and risk analysis done as complete package. The Networking will invite industry partners as and when required in the projects(s) if the industries agree to bear the cost and /or take responsibility of commercialization under an MoU.

In the Phase-III "Technology Innovation Meet" will be organized by the Networking partners to showcase the technologies at different places once a critical number of technologies is created with appropriate IP protections for each one. Interaction with Industries will be facilitated by widespread advertisements using digital and print media for marketing these products.

ICT as a lead Institute will help the networking institutes for the interaction and discussion with the industries.

INSTITUTES WHO HAD SHOWN INTEREST IN THE ICT'S MODEL OF INNOVATION AND TECHNOLOGY CENTRE

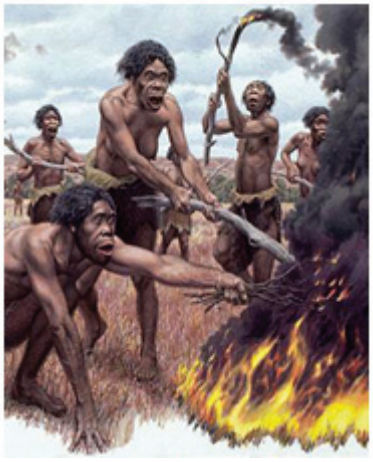
No.	State	Institute	Participants
MS01	Maharashtra	ICT, Mumbai	Professor V. G. Gaikar (TEQIP coordinator) vg.gaikar@ictmumbai.edu.in
		ICT, Mumbai	Professor A. B. Pandit (Dean R&D) ab.pandit@ictmumbai.edu.in
MS02		VNIT Nagpur	R.B.Deshmukh TEQIP coordinator mona1810@yahoo.com
MS03		Rajarambapu Institute of Technology, Rajaramnagar Dist. Sangli. 415 414.	Professor P. P. Deshpande pandurang.patil@ritindia.edu
MS04		College of Engineering, Pune,	Prof D W Pande Dean R & D and Professor - Mech Engg deanr_d@coep.ac.in
MS05		Dr. Babasaheb Ambedkar Technological University, Lonere-Raigad, PIN 402103	P.K. Brahmankar (TEQIP Coordinator) pkbrahma@yahoo.com Dr. M. Sadaiah (Associate TEQIP Coordinator) Dr. N. Agrawal (Coordinator, I-I-I Cell)
MS06		Department of Technology Shivaji University, Kolhapur	Mr.Shrikant Bhosale Coordinator-TEQIP-II, 9890387898 smb_tech@unishivaji.ac.in
MS07		University Institute of Chemical Technology North Maharashtra University, Jalgaon- 425001	Professor Satyendra Mishra Director MS, India Phone- +912572257441 M-+919423488467 smishra@nmu.ac.in
MS08		Sardar Paten College of Engineering(SPCE)	Dr. P. Shrivastava, Professor & I/C Head Civil Engineering Department m_murudi@spce.ac.in
MS09		GHRCE, Nagpur	TEQIP Co coordinator sbjaju@gmail.com
MS10		V J T I, Matunga, Mumbai 400 019	Dr. Arup Rakshitakrakshit@vjti.org.in Dr. V. D. Gotmare , Dr. H. A Mangalvedhekar , Dr. A N. Bambole, Dr. A D Padhye Dr. Sanjay M. G.
MS11		Govt. College of Engineering, Amravati	1. Dr. W. Z. Gandhare, Principal 2. Dr. V. B. Virulkar, Dean, R & D
MP01	Madhya Pradesh	SIRT Bhopal	Professor Ravi Limaye, Coordinator TEQIP coordinator_teqip@sirtbhopal.ac.in

MP02		Shri G.S. Institute of Technology and Science, Indore	Professor (Dr.) Sudhir S. Bhaduaria, Director, teqip@sgsits.ac.in
MP03		Madhav Institute of Technology and Science, Gwalior(M.P)	Dr. C. S. Malvi Dr. Manoj Gour dr_sanjeevjain@yahoo.com
MP04		Samrat Ashok Technological Institute (Engg. College) Vidisha (M.P.) India	Dr. J. S. Chauhan) Professor & Head Civil Engineering Department Co-ordinator (TEQIP-II) jsccivil@rediffmail.com Mob. No. +91-9826244840
GJ01	Gujarat	Birla Vishvakarma Mahavidyalaya (Engineering College), Vallabh Vidyanagar – 388120, Gujarat	Dr. S. D. Dhiman Email: principal@bvmengineering.ac.in dgthakore@bvmengineering.ac.in Phone: 02692 - 230104 Professor S. A. Shah
GJ02		Government Engineering College, Bhavnagar	Professor G. M. Chauhan TEQIP Co ordinator Government Engineering College, Bhavnagar 91 9824444467 gmchauhan_12371@yahoo.com
GJ03		Government Engineering College, Nr. Animal Vaccine Centre, Sector-28, Gandhinagar-382028,	Dr. Rajul K Gajjar, Principal Head, Metallurgy Department, ghupadhyay@gecg28.ac.in Dr. G H Upadhyay
GJ04		Principal, GEC Rajkot	Dr. C.H. Vithalani TEQIP coordinator gec_raj_2004@yahoo.co.in
GJ05		Shantilal Shah Engineering College,Bhavnagar,	Professor M.V. Bhatti, Associate Professor, Applied Mechanics, mvbhatti@rediffmail.com
RJ01	Rajasthan	MLV Government Textile & Engineering College, Bhilwara	Prof G K Tyagi, Director/Chairman (Institutional TEQIP Unit) Prof Shallender Sharma, Coordinator (TEQIP-II) shallender.mlvti@gmail.com
RJ02		Goverment Engineering college , Ajmer.	Professor M. M. Sharma (Principal, Govt. Engineering College, Ajmer) principal@ecajmer.ac.in Mr. Dhirendra Mathur (TEQIP Coordinator)
RJ03		College of Tech. & Engg., Udaipur - 313001 (Raj.) - INDIA	Dr. B. P. Nandwana Dean, Phone: 0294-2470510 (O), 9414472732 Email: bpnand@yahoo.com, bpnand@gmail.com

Innovations are not simple feats of brilliance (our very first example will illustrate this point beyond any doubt). Innovations are the result of great hearts: the greatest innovations are not so much the product of brilliant minds by large hearts, not a result of intellectual acrobatics but rather the long, slow, painstaking process, sometime under severe opposition, of lovingly gain a deep understanding of a problem and just as carefully and lovingly find a solution for it.

The virtues associated with innovation are courage, persistence, patience and deep commitment; and yes, access to the learning of the past. These are not the monopoly of a certain group of people; these are our shared inheritance.

DOMESTICATION OF FIRE



Courage: They had to overcome a strong instinctive fear of fire

Perspective: They had to rise above their circumstances (cold, hungry, tired, frightened) and imagine the benefits of taming this fearsome elemental force.

Perseverance: They would have to keep trying out ways to domesticate fire in the teeth of several failures or even disasters.

Community: It is critical to note that fire was domesticated by Homo Erectus which was practically an ape without the analytical abilities modern humans possess. They must have innovated on a community level, over several generations. So genius is not a prerequisite for innovation.

Fire is the first non-human force to be domesticated; the foundation of all subsequent technological advances and ecological transformation brought about by humans. Fire is not obviously attractive: indeed, being destructive, purposeless and self-perpetuating, it is a terrible, frightening phenomenon. The intellectual leap required, first to overcome one's instinctive fear of fire, and then to actually put this phenomenon to work for cooking, warmth, protection etc is a breathtaking feat. All the more incredible in that the first "men" to truly domesticate fire were not modern humans at all, but the Homo Erectus. Here is clear evidence that innovation and technology have predated the evolution of humans. The wide-ranging impact of this innovation, together with the fact that it was conceived by hungry, frightened proto-humans makes this our top innovation for all time.

(Insights from Johan Goudsblom, "The Civilizing Process and the Domestication of Fire." Journal of World History 3, no.1, Spring 1992).

DISCOVERY OF AGRICULTURE

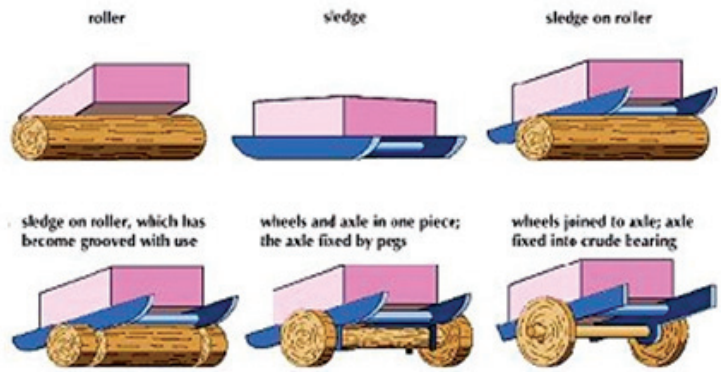
Agriculture along with animal husbandry marks the second great advance in human civilization after the domestication of fire. It has allowed the population of the earth to increase from about 10 million people living essentially at the mercy of the elements to several billion living lives substantially removed from nature. Agriculture is the cause of perhaps the greatest ecological transformation of the earth's landscape, with bio-diverse jungles and forests cleared away to make room for mono-culture of grasses. All domesticated crops were obtained from barely edible, even toxic, wild varieties after several generations of careful selection and culturing. And the number of food crops has not been substantially added to in modern times. Similarly, of the tens of thousands of species of animals existing on Earth, only about ten species have been found to be domesticable. Those ancient innovators are now utterly forgotten, but the very food we eat is a testimony to their efforts.

Perspective: Our ancestors would have to rise above their subsistence, hand-to-mouth, hunter-gatherer lifestyles to imagine the benefits of growing their own food.

Perseverance: None of the food crops or the domestic animals we have today were available to the early farmers. They had to be carefully bred over many generations to have large seeds, non-toxic pulp or docile natures.

Community: Such a multi-generation feat was only possible because of serial innovations in communities and idea sharing between communitites. It was truly a collective effort

WHEEL AND AXLE



Possible stages of innovation in developing wheel and axle.
From http://library.thinkquest.org/C004203/science/science02.htm

The Wheel and Axle are so central to transportation that it was once thought that a major metric of a civilization's progress might be its possession of this tool. However, the wheel and axle are not by themselves enough; the beast of burden (another innovation) completes a transportation solution that has lasted millennia; only ending when the internal combustion engine driven automobiles came into vogue. Only the Arctic/Antarctic Tundra, the sandy deserts and the mountain slopes were off-limits for wheeled transports.

POTTER'S WHEEL

The Potter's Wheel is perhaps the first instance of an innovation leading to industrial scale manufacturing. Clay pots had become a neccesity due to the surpluses produced by agricultural communities. The early pots were made by laying coils of clay on top of one-another and roughly fashioning them into shape. It was a tedious process and turntables (tournettes) were developed first to aid in the coiling. Once the "fast" wheel was developed, an innovative technique called "throwing" came into use where a lump of clay is thrown onto a fast spinning wheel and its contour moulded by hand.

While the idea of a wheel is fairly straighforward for a potter making pots using coils of clay, the leap to the "throwing" technique is significant. It is also interesting that once the throwing technique became established, fully specialized potters appeared – an early instance of specialized trades that eventually would lead to industrialization.

Insights from Victor Bryant "The Origins of the Potter's Wheel" Ceramics Today **http://www.ceramicstoday.com/articles/potters_wheel.htm**

INVENTION OF THE AIPHABET

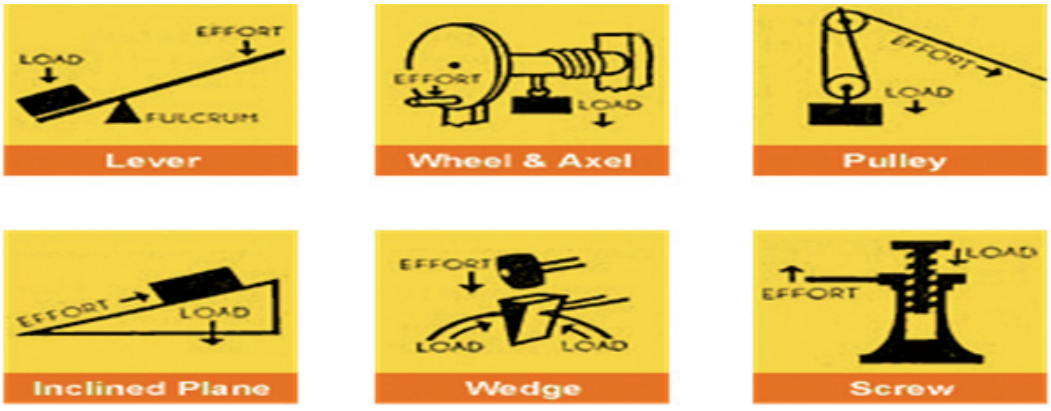
The Alphabet with distinct symbols for phenomes (vowels and consonants) signified a major advance in writing; and is so successful that of all the extant literate world civilizations except two (the Chinese and Japanese) have adopted it. This replaced the earlier written tradition of heiroglyphs or logography where each word has its own unique symbol. Whereas the logographic tradition has almost as many symbols as there are words, the alphabetic system has only a few tens of symbols capable of representing the full range of sounds in the language: greatly simplifying learning and hence invaluable (though by no means sufficient) for the spread of literacy.

(1) West Semitic Letter Names	(2) Egyptian Hieroglyphic Prototype	(3) Proto-Sinaitic (Sinai 375a) Catalog No. 89	(4) Izbet Sartah Ostracon	(5) el-Khadr Arrowhead #2 Catalog No. 91	(6) Mesha Stela	(7) Samaria Ostracon Catalog No. 90	(8) Greek Letters and Names
'aleph (ox)	(Gardiner F1)			—			A (alpha)
ḥet (fence?)	(Gardiner O42)			H			H (eta)
kaph (palm)	(Gardiner D46)			—			K (kappa)
'ayin (eye)	(Gardiner D4)					—	O (omicron)

The innovation is by no means trivial, or even immediately useful. The number of literate people at the time of the invention of the alphabet were countably few – and almost all of them would either have despised the written word or have strong resistance to a system that reduced entry barriers to their profession. It was probably initially adopted by traders as a simple means to keep logs and had little prestige until the Greeks developed and enthusiastically adopted the alphabetical system during their golden age (~800 B.C.).

This is another instance of an innovation chain – a large number of incremental innovations culminating in a standardized system of writing. A large number of people contributed to it, all of whom have been forgotten. But their legacy remains with us.

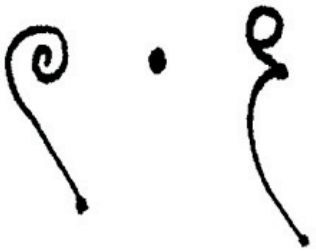
SIMPLE MACHINES



Simple Machines is a profound idea; originally by Archimedes but built on by Greek and later European philosophers. The six simple machines are the lever, the wheel-and-axle, the inclined plane, the screw, the pulley and the wedge. These can be combined to form a slew of important

machines. More importantly, the idea that there are a small number of simple machines that combine to form complex machines provided a vocabulary for ideation and discussion of machines in general. For providing a framework to understand and innovate on mechanical devices, we consider the idea of "Simple Machines" a major innovation in thought.

ZERO AS A NUMBER



Zero as a concept was well known even to the ancient Egyptians. The Greeks had long philosophical debates about zero on the lines of "can nothing be something?". A number of civilizations including Mesoamericans and Romans had the concept of a placeholder for expressing numbers according to the decimal system. However it was Brahmagupta who in his book Brahmasphu - asiddhanta treated zero as a number in its own right thereby laying the foundations of number theory and modern mathematics.

Brahmagupta's Brahmasphu - asiddhanta was translated by the Arabs who were immediately impressed by the insights on astronomy, linear algebra, trigonometry, geometry and number theory therein. For example, a number of the paradoxes by Zeno of Elea were resolved once the concept of zero was clarified. Such was his impact that Edward Saxhau (probably from insights acquired by translating Al-Beruni) said "Brahmagupta, it was he who taught the Arabs astronomy."

Although Brahmagupta drew on the works of earlier thinkers (particularly Aryabhatta), he interpreted it in important and innovative ways; making him (and Indian mathematics) part of the great chain of thought that led to the rise of the scientific method in Europe several centuries later.

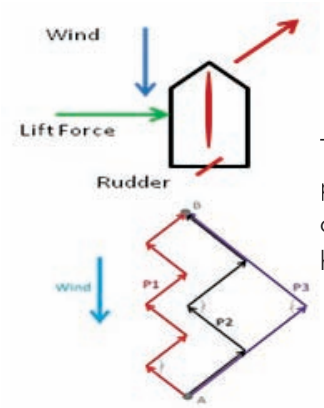
Sometimes, it is enough to teach.

LATEEN SAIL

Viking Longboat with Square Sails

A large dhow with Lateen sails

The Lateen Sail was a remarkable innovation for its time. The square sail was well known since 3200 BC and was a very efficient means of sailing: surviving until the 19th Century until it was displaced by the steam boats. However, the square sail had a problem: it could only move in the direction the wind was blowing – which was fine if you were a large trading vessel able to schedule your itinerary according to the prevailing winds. But what if you were just a small dinghy, needing to swiftly run errands to make ends meet? You could not always afford to wait for a fair wind. This is where the innovation of the lateen sail becomes invaluable – because it allows the boat to sail upwind. The lateen sail, unlike square sails, is oriented along (fore-and-aft direction) the length of the boat. When sailing downwind, it can be set to operate like a regular square sail. However, if it is desired to sail upwind, an innovative procedure called "tacking into the wind" is involved. Here, the sail acts as an air-foil which when angled correctly with respect to the wind, leads to a lift force acting on it perpendicular to the direction of the wind. This perpendicular force is converted partially into forward motion using the ship's rudder. The allows the ship to sail at an angle to the wind. To keep sailing straight, the angle of the lateen sail is periodically adjusted so that the direction of the lift force periodically reverses. This allows forward motion while motion in the direction of the lift force is zero on average.



The rudder converts lift force (perpendicular to wind direction) partially to forward thrust upwind. Frequent changes in sail orientation needed to keep forward channel narrow e.g. path P1 has a narrow channel but part P3 has the lowest number of turns.

THE ARCH

Roman Aqueduct Constructed out of a series of arches.

The Arch and the related concepts of vaults and domes can span a space a support weight above it. Before the arch, spanning a space required materials to be laid across supports and the force

on the spanning material was predominantly tensile. Since the construction material in ancient time that could take some tensile strength was wood, and because its strength was limited, large spans demanded a large number of closely spaced columns. The invention of the arch, a purely compression form, which resolves stresses into compressive stresses allowed the use of stone (a material with very high compressive strength) to span a gap, greatly facilitating building design. Now buildings could be made taller, wider but with more interior space and lesser construction material. A critically important use of the arch was in transport of water via aqueducts. The use of the arch continued till very recently when the invention of reinforced concrete and suspension bridge design rendered it obsolete.

THE MOVABLE TYPE

Movable Type and a Plate of Assembled Characters

The Movable Type is a way of printing that uses modular components to assemble a stencil of a document. The components mainly represent letters or punctuation. The stencil can then be inked and stamped on paper to reproduce the document. This is a great improvement over hand-copying texts – the conventional way of reproducing document for millennia. It is also a significant improvement over the wood-cut stencil which was laborious to produce.

Although the movable type was invented in China in 1040 A.D., its utility was limited by the large number of symbols the Chinese language (which did not adopt the alphabet) has. In contrast, the independent innovation by Gutenberg in Europe in 1452 A. D. was an instant hit, since European language already had the alphabet and could be represented by less than 50 symbols.

The resulting availability of books led to a revolution in thought in Europe. Landmark events including the Reformation, Enlightenment and the Scientific Revolution can all be directly linked with the invention of the Movable Type.

THE SCIENTIFIC REVOLUTION


Nicolaus Copernicus 1473-1543


Johannes Kepler 1571-1630


Galileo Galilei 1564-1642


Rene Descartes 1596-1650


Issac Newton 1642-1727


Antoine Lavoisier 1743-1794

"Philosophy is written in this grand book—I mean the universe—which stands continually open to our gaze, but it cannot be understood unless one first learns to comprehend the language and interpret the characters in which it is written. It is written in the language of mathematics, and its characters are triangles, circles, and other geometrical figures, without which it is humanly impossible to understand a single word of it; without these, one is wandering around in a dark labyrinth." ….Galileo Galilei

The Scientific Revolution is arguably to modern humans what the domestication of fire was to Homo Erectus. Although many ancient cultures had highly advanced philosophies (Indian, Greek) and even technologies (Romans, Chinese) for millennia, none had stumbled upon the fundamental axiom on which modern thought rests: That the universe is rational and can be described mathematically.

If Homo Erectus began the domestication of Nature with material tools, then with the Scientific Revolution, Homo Sapiens Sapiens has begun the domestication of the Intellect, with intellectual tools.

This is a revolution whose impact is yet to be fully felt.

THE STEAM ENGINE

Left: Thomas Newcomen's Steam Engine and Right: James Watt Steam Engine with Separate Condensor; Much more efficient

The Steam Engine is arguably the heart of the Industrial Revolution since it enabled, for the first time in history, the energy of plentiful fossil fuel to be converted to mechanical work on a large scale. Though such devices were conceptualized even in ancient times, it was Thomas Savery who built the "Miner's Friend", an elegant steam driven water pump with no moving parts in 1698. Thomas Newcomen improved on this with his Atmospheric Engine in 1712 where he used

atmospheric pressure to drive a piston against partial vacuum created by condensing steam; the steam was condensed partly by straying cold water directly into the cylinder. It became a great hit, with over 100 engines installed all over England. In 1765 James Watt produced a working model of his steam engine which was an improvement over Newcomen's in that it had a separate condensor: James Watt had identified that most of the steam in Newcomen's engine went to reheat the cylinder walls after each condensation cycle. This loss he eliminated by having a separate condensor. A major fabrication problem was resolved by the invention of the boring machine by John Wilkinson and the Watt engine was operational by 1774. Later inventors would build higher pressure steam engines and even later came the steam turbine – still in use today.

Interestingly, one of the reasons that the steam engine was invented was to pump out water from coal mines. The coal from these mines would in turn power the steam engines of the Industrial Revolution.

THE ASSEMBLY LINE

Ford Motor Company Assembly Line

The Assembly Line takes the concept of division of labour and applies it in an industrial setting. The most famous example is that of the Ford Motor Company where it was developed for assembling the successful Model T passenger car. The concept was simple: a worker will work faster and make fewer mistakes if he is assigned a single repetitive task rather than a number of assorted tasks. Though conceptually simple, the idea took 7 years and several intelligent men to implement. The profits from the increased production rate were so high the the company could raise wages from $1.5 to $5.0 per day!

The concept of the Assembly Line evolved into the Just In Time Revolution and other great logistical and productivity innovations of the 20th Century especially in Japan.

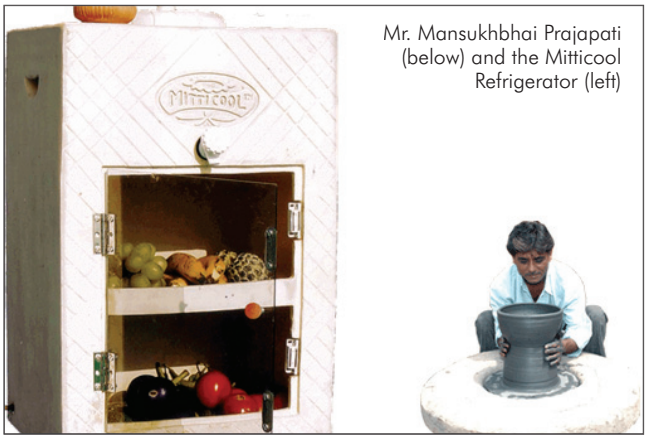
MODERN INDIAN INNOVATIONS

Fast forward to our day …

We have inherited electricity, aeroplanes, rockets, advanced thermodynamic power cycles, electronics and digital communications, satellites, internal combustion engines, polymers, business process outsourcing, the Haber's process for fixing nitrogen, a deeper understanding of biology including the revolution brought to that field by the discovery of DNA. We have seen innovations in software, materials, power production, food, building materials, medicine, entertainment, politics, economics, education and yes, also in religion.

There are so many innovations, it is unlikely that one will even be able to list them all, let alone describe them. But there are some interesting modern innovations from India.

MITTI COOL



Mr. Mansukhbhai Prajapati (below) and the Mitticool Refrigerator (left)

That water in a clay pot is several degrees cooler than the ambient was well known to most people for several hundreds of years. Several people probably also thought of keeping vegetables in clay pots for preservation.

However, it took a leap of innovation to think up the MittiCool – a clay walled box that looks and feels like a normal refrigerator: except that it does not have any moving parts and it does not use electricity.

Using the phenomenon of wet-bulb-depression, the MittiCool creates a cool cavity in which to store milk, vegetables and other perishables. It also has provision for storing cool water. And the best thing is, it works hardest during hot, dry days, when it is needed the most.

HOMEGROWN BIOMASS GASIFIER

Mr. Raj Singh Dahiya with his biomass gasifier

Biomass is plentiful in rural India. But electricity is notoriously scarce. How about building a biomass gasifier which will make electricity?

Mr. Raj Singh Dahiya has never been to school, let alone get engineering lessons. Yet he has made a biomass gasifier unit that can power a 30 hp engine for 1 hour using 20 kg of biomass.

The technology is well known: in fact, it was used to supply fuel for gas-lighting in city streets. But Mr. Dahiya has found a way to clean up the producer gas generated and send it to a diesel engine.

The key to his innovation is getting the fuel-air mix right. Mr. Dahiya can tell from the way the engine knocks how to modify the mix.

The gasifier will work on a variety of fuels and produce electricity 30% cheaper than grid electricity. It will cost Rs. 1.25 lakhs for the 10 kW unit.

MOTORCYCLE DRAWN PLOUGH

What costs Rs 16,000 and can plough an acre of land in 30 minutes with only 2 litres of fuel? Not a bullock team – a pair will cost at least Rs. 70,000/-. This is Mr. Mansukhbhai Jagani's motorcycle tractor.

Born out of the desparation of a drought that killed off the draught animals, Mr. Mansukhbai, a high school dropout, tinkered with his old Bullet motorcyle. He attached a couple of wheels

Mr. Mansukhbhai Jagani and his motorcycle based tractor.

to the back and put a toolbar across them to make a functional agricultural machine.

A number of institutions came to support Mr. Mansukhbhai including National Institute of Design, Ahmedabad for design inputs; IPR advice from Boston based law firm THT; and business plan development from Sloan School of Management, MIT, Boston. And now his motorcycle-tractor is ready for business!

TREE CLIMBING HELPRE

If you have a grove of coconut trees heavy with fruit, one of the biggest difficulties is finding skilled tree climbers to harvest the fruit for you. This problem has been chronic in rural India for a couple of decades. Yet only a handful of people have tried to tackle it head on.

One of them is Mr. D. Renganathan who has devised an ingenious tree climber with four-lock safety system that prevents accidental falls. The climber has a seat and two frames: one for the hand and another for the legs. The user alternately engages the upper and lower frames while seated and finds himself climbing the tree (or pole or whatever the frames are about). The locking system absolutely ensures safety. There is no way of moving either up or down other than the specified alternating frame engagement.

With this device, one can climb 40 ft in 5 minutes including time for setting up and dismantling the device. It costs Rs. 7,000/- and for that price you can harvest your own coconuts. That is a bargain!

LOW COST HEALTH CARE

What Walmart did for retail shopping and what Southwestern Airlines did for air travel, Narayana Hrudayala is poised to do for health care.

Brainchild of Dr. Devi Shetty, Narayana Hrudayala already runs the world's largest paedeatric cardiac hospital in Bangalore. It provides free telemedicine and performs 15,000 surgeries every year yet with a profit margin of 7.7%.

A Narayana Hrudayalaya Centre

With constant innovation in procedures, supply chains, procurement etc the hospital/movement focuses on cutting the flab so as to provide high quality, large scale treatment and low cost to Indians. It already has 5,000 beds and is building 30,000 bed facilities across India.

AFFORDABLE PROSTHETICS: JAPUR FOOT

An artifical limb for only Rs. 2,500? Sound too good to be true, given that they come for Rs. 5 lakhs in the West. But the BMVSS has been on this problem since 1975.

Developers of the iconic "Jaipur Foot", the organization is dedicated to helping rehabilitate the disabled. It has recently developed the Stanford-BMVSS "Jaipur Knee" with Standford University in the US; hailed by TIME magazine and one of the world's 50 best inventions in 2009.

They provide not only posthetics but the physiotherapy and other care needed to rehabilitate patients.

The Jaipur foot was meant specifically for the Indian disabled – who have to work in wet, muddy conditions, squat and sit cross-legged, walk on uneven terrain, walk without shoes etc. The foot is non-articulated but yet allows the full range of motion that articulated (and much more expensive) prosthetics do.

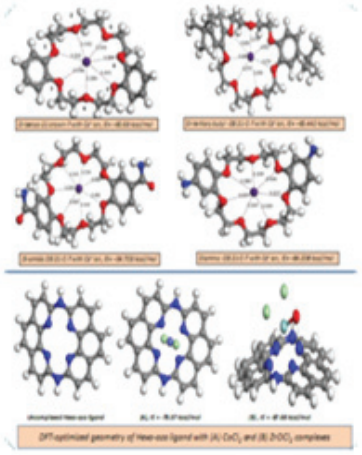
There can be no better accolade that his quote from TIME magazine (1997):

"People who live inside the world's many war zones from Afganistan to Rwanda may never have heard of New York or Paris but they are likely to know a town in Northern India called Jaipur. Jaipur is famous in strife-torn areas as the birthplace of an extraordinary artificial limb known as the Jaipur Foot that has revolutionized life for millions of landmine amputees."

And that is, in the end, what all this is about.

MOLECULAR RECOGNITION TECHNOLOGIES :

Molecular Recognition Technology (MRT) describes the state-of-the-art of designing molecular components which are highly specific to the guest molecule. We have employed quantum mechanical calculations to identify solvents/ligands selective for a given solute. Suitable ligand architecture is predicted and the synthesis of these tailor-made specific ligands produces high purity, high- concentration value-added products.

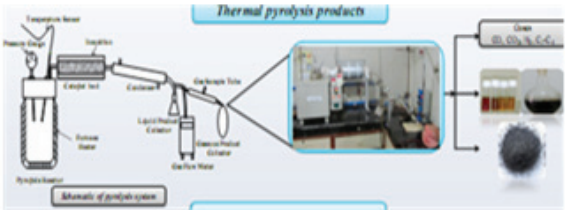


POLYMERIC ADSORBENTS FOR SELECTIVE CO2 CAPTURE FROM N2/CH4 STREAMS:

While pressure swing adsorption is much more energy efficient than absorption, it is requires more material. To overcome this problem, we are developing innovative polymer adsorbents with carefully selected functional groups that greatly enhance the selectivity for CO_2 over other gases.

THERMOCHEMICAL CONVERSION OF LIGNOCELLULOSIC BIOMASS BY PYROLYSIS AND IN-SITU VAPOR UPGRADATATION:

Pyrolysis of biomass is well known and used in biomass gasification. The biogas is mostly hydrogen and the bio-oil is acidic hydrocarbons. We have innovated by adding a vapor upgradation catalyst to the gasifier so that gases and vapours are converted in-situ to more valuable, less acidic chemicals while the solid residue is alkaline and excellent as fertilizer.



Inst. Chemical Technology, Mumbai

Just-Sip®: Dehydrated Drinking Vegetables

Vegetables are important components of a healthy diet and their sufficient daily consumption could help prevent chronic diseases such as heart disease, cancer, diabetes and obesity, as well as micronutrient deficiencies. Dehydrated drinking vegetable can serve as a solution to fulfill the need of daily nutritional requirements. Just Sip is a nutritious vegetable drink premixes with 3 unique features – combination of vegetables, incorporation of dals (lentils) rather than corn flour which is only starch and no added colour, preservatives or MSG. It is one solution to get many vegetables in your daily diet.

®Just Sip is Trademarked and 2 Patents have been filed.
(Prof. S. S. Lele Research Group)

Self Healing Buildings:

Science fiction authors like to tell of future cities where buildings are living things, repairing and maintaining themselves. Well, it is close to becoming fact. We have identified urease producing microbes that induce calcite precipitation and are developing solutions for microbial healing of civil structures. We have also developed a broth (we call it OptU), which when applied to bricks with *B. pasturii* results in 85% increase in strength and 50% reduction in water uptake by the brick.
(Dr. D. D. Sarode and Prof. S. S. Lele)

Solar Power Without Tracking!

The figure to the right is not an assembly of parabolic troughs. They are Compound Parabolic Troughs and they need to be adjusted only once a day to focus on the receiver. And those aren't expensive curved mirrors either: they are made from several hundred plane mirror strips. This assembly lives on the ICT Terrace and will be used to make steam to provide *refrigeration* (that's right) to a building on campus. (Patented Technology. Prof. S. V. Panse)

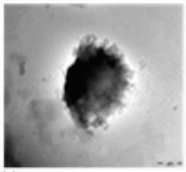
Hydrophobic Gypsum:

What! That is practically an oxymoron! How can gypsum be hydrophobic? Well, it can. We have identified additives that make it happen. Not only that, we can get the strength of gypsum to 15 MPa which is practically construction grade material. If you have seen the mounds of gypsum that pile up outside fertilizer plants (see GoogleMap view of the pile in Trombay), you will appreciate the fact that we have finally found a good use for this ~~waste~~ abundant resource.
(Dr. D. D. Sarode, Dr. V. H. Dalvi, Dr. S. M. Sontakke, Dr. P. R. Nemade)

Inst. Chemical Technology, Mumbai

LIPOMER - Nanoparticle Shape and Drug Targeting

LIPOMER an innovative nanocarrier for veterinary infections, is the first ever application of nanomedicine in veterinary infections. Clinical success in E.Canis infection in dogs is demonstrated. More importantly, the scalability of this Lipomer has been successfully demonstrated. (Prof. P. V. Devarajan Research Group)

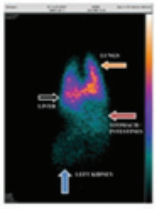


Lipomer

Lipomer accumulation in spleen

MYCOTARG- Targeting to the lungs

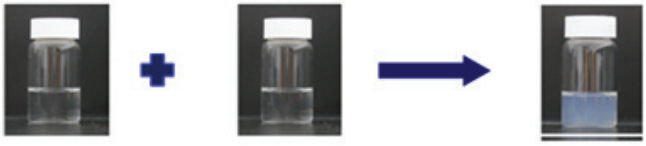
Orally administered nano carriers loaded with anti tubercular drug combinations which enable targeting the lungs, through a simple ligand, a pharmaceutically acceptable, low cost excipient approved for oral administration. (Prof. P. V. Devarajan Research Group)



Scintigraphic images reveal high lung uptake of nanoparticles after oral administration in rats

Sublingual Nano Delivery System of insulin

We have a granted Indian Patent based on microemulsion compositions for sublingual administration of insulin. This non injectable insulin delivery system exhibits great potential. This system can be readily scaled up for commercialization. (Patented by Prof. P. V. Devarajan)



Self Nanoprecipitating Preconcentrates(SNP)

A simple idea which completely overcomes the technology gap in the development of nano-drug delivery systems. SNP involves **in situ** generation of a mixed nanosystems, comprising lipid/polymeric nanoparticles and micelles, by the patient or doctor by simply mixing two liquids(A &B) prior to administration. It has been successfully developed for anticancer drugs (doxorubicin, tamoxifen) and Anti HIV(Nevirapine), the technology appears too simple to be true! (Prof. P. V. Devarajan Research Group)

INNOVATION FROM OUR PARTICIPANTS

We have seen ancient innovations and modern ones from deeply committed individuals.

But several of those present have been thinking deeply, writing models, solving equations, reading papers, doing experiments, talking to colleagues, trying out wacky ideas. And they are all right here.

Lets look at some of the innovations out of our participants' home institutions. And please remember, these innovators are right here. Definitely go and have a chat with them over tea and biscuits. You never know what will come out of it!

CTAE, MPUAT, UDAIPUR

Low cost water harvester using local materials and skills suitable for a catchment area of 50 ha. It is 2-3 times cheaper than normal harventing solutions based on masonry.

Plastic lined pond of 12,000 m3 capacity suitable for a catchment area of 30-200 ha. 100 such ponds have been commissioned

Maize dehusker and sheller. Capacity of 800 kg/h with 99% dehusking and 97% shelling efficiency. The machine carries a 25% subsidy from Govt. of India.

Garlic Dehusker: 800 kg/hr and 95% efficient. Bulbs rubbed and beaten to separate the cloves and light matter (skin, root etc) aspirated away.

SAGAR INST. RES. TECH., BHOPAL

Microstrip Patch Antennae for Wi-Fi and other applications. Low fabrication cost means cheap to manufacture on large scale and can easily be integrated in microwave circuitry.

Thermoelectric generator to convert waste cooking heat to electricity. Can produce as much as 30 W of power while food is being cooked!

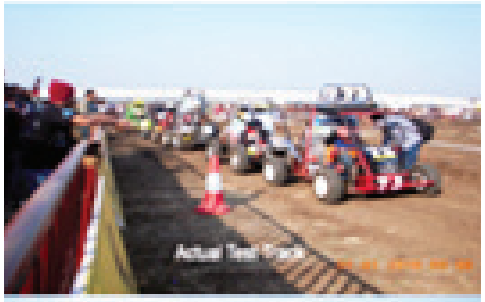
Low cost (Rs. 51,000) radio station with studio equipment, laptop, editing and scheduling software, transmitter and antennae assembly. 3W transmitter gives excellent results upto 500 m.

Automatic weight measuring device for determining quantity of fluid left in tanks. Suitable for dairy and fluid transport operators.

VJTI, MUMBAI

Working prototype of river linking project. The end of droughts and floods? We hope so.

Paper Bridge: Getting the most out of existing materials. If we can get paper to do this, imagine what we will get out of steel!



Society of Automotive Engineers Race and Auto Expo. Our car won the race and bagged prize for best concept car in Jan 2010.

Twin Boom Pusher configuration aircraft design. Much appreciated by judges at the SAE event.

GHRCE, NAGPUR

Vermicompost Sieving Machine: Vermicompost has proved to be an excellent fertilizer but there is a lot of manual effort involved in its making. We have a simple device that will quickly sieve out fine tea-powder like vermicompost from the compost heap for use in the field.

Agricultural Sprayer and Weeder: We have integrated two functions in one machine for the farmers' convenience. The same device can be used as a weeder/cotton-picker in season or an insecticide sprayer out of season. This will greatly facilitate maintenance and lower cost of equipment. We wish to reduce load on workers' backs which can be as high as 18-20 kg with full tank and pump.

Wheat Reaping Maching: We are developing a simple, inexpensive device that will facilitate wheat reaping with the main aim being reducing manual fatigue during harvest time. Our primary goal is that it be fully muscle powered, but we me augment it with electric/diesel power if we see a need.

Automated Surveying with GPS: Transparent surveying is critical in places were land is the source of livelihood. We have developed an automated surveying tool using GPS technology that can be used for civil projects as well as by farmers for crop mapping.

Pesticide Sprayer for Prosthetic Hand: We have developed a mechanism for a prosthetic hand which has low weight and low noise during operation due to absence of mechanical linkages.

SHRI. G.S. INST. TECH. SCI., INDORE

Seismic Microzonation: We offer a range of technologies collectively called seismic microzonation. The purpose is to identify zones of seismic hazard and organize evacuation and emergency rescue operations accordingly.

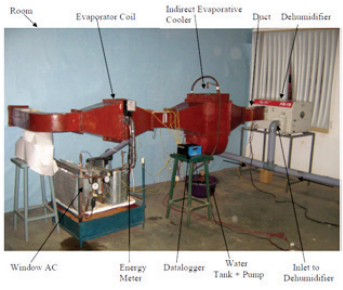
Seismic microzonation can also be defined as the process of estimating response of soil layers under earthquake excitations and thus the variation of earthquake ground motion characteristics on the ground surface.

The analysis will yield estimates of probability of shaking in each zone, damage to built environment, and identify people living in high risk areas. With this information, suitable long and short term measure to minimize damage and loss of life can be undertaken with confidence.

BATU, LONERE

MicroReactors: We are developing a range of innovative technologies taking advantage of the high heat transfer possible with micro-channels.

MicroStripAntennae: We are exploring the use of micro-strip antenna whose flexible nature allow great choice of placement



that normal rigid antennae. Also, being cheaper, we can use them for distributed information gathering.

Hybrid Air Conditioning System: While desert coolers work very well in hot, dry environments, for humid environments a desiccant wheel based hybrid air-conditioning system works best. We are developing such a device.

S.S. ENGG. COLLEGE, BHAVNAGAR

Emergency Response System: We are working on a project of great importance to society. During an emergency situation, time is of the essence. Seconds can mean the difference between a healthy life and debilitation or death. It is critically important therefore that emergency response teams are guided quickly and accurately to the victim or caller.

Our system will, at the press of a button, notify the victim's family, the police and the emergency response team (which could be the fire brigade) about the victim's exact geographical location via GPS. The nearest hospital will be alerted to receive an emergency trauma patient well in advance of the arrival of the emergency response team.

Environment Monitoring: We have developed a system by which a distributed system of sensors is used to monitor concentrations of various pollutants in a given area. This is part of the Internet of Things. The data will be logged and made available via social networking sites to the citizens of a particular location. We have also provided means to visualize the sensor data – either live or an archived source.

LETS INNOVATE!

Innovation is not trivial. It takes deep commitment. Several years of painstaking, yes boring, effort to slowly win an understanding of the system and then several years more of trial and error before a working prototype can be made. Then there is the scale-up to commercial manufacture. But no work is wasted. Even failed approaches can help those coming after you. Document everything, publish as much as you can. Don't worry too much about the rewards, they come to those who wait and work.

Here are some organizations that can help you develop and commercialize your ideas:

1. **National Innovation Foundation (www.nif.org.in):** Set up as an autonomous body under the Department of Science and Technology (DST), they actively solicit ideas to support

including funds for prototyping and testing. They will also help with the commercialization of the idea. They have a mandate to build a national register of ideas related to various aspects of the Indian rural economy and have already built a database of 15 lakh ideas and innovations. Children upto 12th Standard can participate in the IGNITE competition organized yearly by the NIF.

2. **Grassroots Innovation Augmentation Network (http://gian.org):** This is an incubator of grassroot innovation and traditional knowledge. It is affiliated with NIF and the HoneyBee Network.
3. **Grand Challenges (http://www.grandchallenges.org):** This is an initiative by the Bill and Melinda Gates Foundation (an American philanthropic group) in partnership with various governments. They are looking to fund (upto $100,000) for ideas that will lead to improved global health particularly through agriculture and nutrition.
4. **Innocentive (http://www.innocentive.com):** These are people who really want solutions and are ready to pay for them in cold hard cash. If you have developed a solution and are looking for applications this is the place. Register for free, go through the problem statements and if you think you can crack one, send in your proposal. Beware though that this is not a place to start working on problems but to see if your solution has a market. Also, the IP issues are to be considered seriously. If you are new to this, by all means visit the site and look at the problems, but send your innovation to GIAN or NIF.

"Genius is 1% inspiration and 99% perspiration."

Thomas Edison

UGC NETWORKING RESOURCE CENTRE IN CHEMICAL ENGINEERING (UGC-NRC-CE)

PROFESSOR V.G. GAIKAR
Coordinator, ICT-DAE Centre for Chemical Engineering Education and Research
Institute Coordinator, Technical Education Improvement Quality Program (TEQIP-II)
Coordinator, Innovation Networking of Institutes in Maharashtra(TEQIP-II)
Coordinator, UGC Networking Resource Centre in Chemical Engineering

UGC- NETWORKING RESOURCE CENTRE IN CHEMICAL ENGINEERING (UGC-NRC-CE)

The University Grants Commission (UGC) has established a Networking Resource Centre in Department of Chemical Engineering, Institute of Chemical Technology(ICT) (a Deemed-to-be University under Section 3 of UGC Act 1956), Matunga, Mumbai-400019, or its outstanding contribution to the field of Chemical Engineering.

The Department of Chemical Engineering is one of the top ranking CE Departments in the Country by all standards: teaching, research and industrial relationships. It is rated among the top 12 CE Departments in the world in terms of research productivity as measured by publications per faculty. The FIST program of DST also has declared the Department to be the Best Department in all Engineering Departments in India. During the last 5 years, 131 peer reviewed international papers have been published and 66 sponsored research projects have been successfully completed. The TEQIP survey has also ranked ICT at number one in the country. The CE faculty has well known in their fields of expertise, linkages with industry and technology transfer for several areas. A number of Collaborative Academic Programs are in progress with several National and International institutes and CSIR labs.

THE UGC-NRC-CE IN ICT HAS THE FOLLOWING ACTIVITIES:

1. Research, training and skills development of faculty and research scholars through periodic discussions, regular Workshops on Frontier areas of Chemical Engineering.
2. Capacity building by mentoring Faculty and Chemical Engineering Department of other Institutes for augmenting their research skills.
3. Facilitating researchers from other Institutes/Universities to carry out key experiments in collaboration with CE faculty of ICT.
4. Augmentation of Information Resource Facility of the Department to provide quality research support to other Institutes/ researchers.
5. To enhance and build state-of-the-art in-house research infrastructure.

PARTICIPATION IN THE ACTIVITIES OF THE CENTER

Faculty and researchers of UGC recognized University Departments/ Institutes/ Engineering colleges offering degree programs (BE, ME, M.Tech., Ph.D.) in Chemical Engineering or Chemical Technology and Allied fields (including Chemical Sciences, Metallurgy, Ceramics, Polymers, Biotechnology) are eligible for participation in the activities of the Center. Following options exist for the participation:

1. Attend Summer/Winter Schools and Workshops organized periodically consisting of lectures and hands-on exposure to experimental or modeling methods. Typically, 25 candidates (Ph.D. students, post-doctoral fellows,

faculty members) will be enrolled for a School or Workshop.

2. The Centre promotes collaborative research between faculty members of the Department of Chemical Engineering and faculty and researchers of participating Institutes in the areas of mutual interests. It facilitates and provides help in carrying out key research experiments that cannot be carried out elsewhere. The Center is keen to impart scientific knowledge to young researchers who come from deficit laboratories. The Centre will meet the cost of the travel and other expenses according to the Institute's guidelines for the duration of the workshop/school and short term visits.
3. Nominate undergraduate students for the summer research projects. The UG students will work with faculty members on a specific project along with senior Ph.D. students of the Department for a period up to six weeks (15th May to 30th June) The last date of nomination is 31st March every year. The names of the selected candidates are communicated by April 30th.
4. Register for Doctoral program which will allow faculty members to upgrade their skills without having to spend complete duration of Ph.D. at ICT.

   A faculty member at any of the eligible institutions, such as University Departments, IIT, NIT, and Engineering Colleges and interested in participating in any of the activities of the Center, can contact the Head, Department of Chemical Engineering on ss.bhagwat@ictmumbai.edu.in For more details and updated information as regarding Center activities, please visit the Institutes' web site or write to us. Interested researchers can put up a brief proposal on the research activity in collaboration with a faculty member at the Centre.

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
- Process Intensification and Green Technology
- Surfactant Science and Hydrotropy
- Development of Organic Chemical Processes
- Adsorptive and Chromatographic Separations
- Cavitation Phenomena, Sonochemistry
- Drying of industrial and food products
- Energy Engineering and Sustainable Developments
- Molecular modeling for separations
- Natural Product Extraction and Purifications

BRIEF OUTLINE OF THE DEPARTMENT OF CHEMICAL ENGINEERING, ICT

The Department of Chemical Engineering of Institute of Chemical Technology (ICT), Mumbai, is one of the prestigious Departments engaged in Chemical Engineering Education and Research. The Department is one of outstanding chemical engineering Departments in the Country by all the standards: Teaching, Research and Industrial relationship, as has been rated by the international surveys since 1964 for every five year period as well as every year and also during the 5-year period during 2006-2011. Besides it is also rated among top 5 Departments in the world in terms of productivity as measured by papers per faculty and per dollar spent. The impact of the research at the department is reflected in number of papers per faculty member, impact factor per

paper, and number of citations for papers of the Chemical Engineering Department.

The Department is further supported by DST-FIST programme with state-of-the-art research facilities that have strengthened the Department's research capabilities. The Department of Science and Technology (DST) has rated the Department is the Best Department in all engineering departments in India. This has been possible due to the research contribution of the faculty members over the years. The collaboration with Department of Atomic Energy has further established a Centre for Chemical Engineering Education and Research in the Institute.

The Department is recognized as the UGC Centre for Advanced Studies (CAS) since 1989 and as a UGC Networking Resource Centre in Chemical Engineering, since 2008.

The Chemical Engineering program of the ICT has been the most successful experiment of maintaining a fine balance of fundamental science and industrial relevance. Since 1967, we have produced over 400 doctorates and over 940 masters degree holders, which is an unparallel record in India, despite the fact that we are a medium sized Department in terms of faculty strength. Currently, 193 Ph.D. students are pursuing Ph.D. in the Department and we have potential of producing 35 Ph.D. s and about 100 publications every year over the years.

TEACHING ACTIVITIES

The Department administers an undergraduate course in chemical engineering and caters to seven undergraduate courses in Chemical Technology. The Department also conducts Masters degree in Chemical Engineering and interdisciplinary courses in Bioprocess Technology and Green Technology. The Deemed-to-be-University status of ICT has brought a major change in education system in the Department. On the initiatives of the Department, at Undergraduate as well as at Post-graduate levels the courses have been completely revised with introduction of credit system, tutorials and continuous assessment with substantially reduced stress on final examination and continuous independent evaluation of research by external experts. We trust that it would make the learning more enjoyable for the students and we will get well trained professionals in years to come from ICT.

RESEARCH ACTIVITIES

Due to the ever evolving nature of Chemical Engineering globally and its strong science base and connectivity with biological sciences, we to continue to strengthen our current areas of research as well as introduce new courses. Our strength has been Multiphase Reactions and Reactors, Reaction Engineering and Separation Processes. However, the recent trends in Chemical Engineering have given an opportunity to grow in multi-directions. We clearly understand that research involves the generation of new knowledge and innovation requires adding economic value (or societal benefit or strategic value, or a mix of them) to the knowledge. Success in research gives prestige to the researcher while a success in innovation brings prosperity to the Institute, in particular and the country, in general. Our aim is to develop human resources to the level that helps in both development of basic science and also add practical utility to every sphere of activity that we undertake.

To sustain a higher rate of productivity we must lay a strong foundation for basic research, while retaining and further developing its innovation capacity. Therefore, we aim to develop a strong program of research in all its dimensions and a set of supports for innovation,—product innovation, process innovation, and design innovation. As an integral part of the research program, technologies that India considers socially, or economically important are being given priority. That

also means developing research programs to encourage industry-academia collaborations and encouraging researchers to work on problems important to local as well as on those of global significance.

In the global context, the priority of research is in the following areas:

- Environmental Protection through Green Chemistry, Engineering and Technology
- Process Intensification (Novel Design of reactors and Energy Efficiency in Multiphase reactions, multiphase reactors and separation processes)
- Energy Engineering with emphasis on renewable and non-traditional sources
- Material Science by molecular level understanding
- Process Safety and Hazardous Waste Management
- Surfaces, Interfaces, and Nanomaterials

Although Chemical Engineering programs have been teaching material and energy balances right from the inception of the discipline, the emphasis on resource conservation, waste minimization and hazard reduction was not very apparent. Sustainability is related to these important areas and there is an overlap of some research.

COVERAGE OF TARGET GROUP AND POLICY DECISIONS OF THE UGC-NRC-CE

ACTIVITIES UNDER UGC-NRC-CE

1. A printed brochure was sent to all chemical engineering departments in the country detailing the purpose and activities of the Centre.
2. By far the best response has been from Undergraduate students to participate in the Summer Research Programme. We accept almost 30 students from other Institutes for the programme. Each one is paid a fellowship for incidental expenses

MAJOR ACTIVITIES UNDER UGC-NRC-CE

1. Summer Research Projects for Students from other Institutes
   Period: 15th May – 30th June (every year)

EQUIPMENTS UNDER UGC NRC

Sr.	Instrument	Vendor's Name	Currency	Cost
1	High Resolution Transmission Electron Microscope	Blue Star Ltd	USD	647129
2	TGA/DTA Analyser	Thermo Fischer Scientific	EURO	58087.8
3	X-ray Diffractometer	Bruker Axs Analytical Inst Pvt. Ltd.	EURO	123600
4	UPS	Best Engineering	INR	1423700
5	Oil Free Compressor	Amkette Analytical	INR	625000
6	Spares for Ion chromatography	Dinox (India) Pvt. Ltd.	USD	10760
7	CAPILLARY ELECTROPHORESIS SYSTEM	Agilent Technologies	USD	50000
8	ICP	Thermo Fischer Scientific	GBP	34343
9	HIGH PRESSURE REACTOR	Chemito Technologies	INR	1727500
10	FIXED BED MICROREACTOR	Chemito Technologies	INR	3765000

11	NANO LC	Agilent Technologics	USD	56000
12	Ultra-centrifuge	Beckman	INR	2400000
13	Refrigerated ultra-centrifuge	Beckman	INR	

SUMMARY OF PROJECT PROPOSALS UNDER UGC-NRC

Sr.	Name	Institution	Project Proposal	Status
1.	Arvind Kumar	National Institute of Technology, Rourkela	Experimental and computational study was solid packed bed	Dr. C.S. Mathapati
2.	Ranjana Juneja	Mauling Azad National Institute of technology Bhopal	Developing a robust algorithm for countercurrent contact	Dr. V.H. Dalvi
3.	Rajat Ghosh	National Institute of Technology - Trichy	Synthesis of Graphene-Electrochemical Exfoliation	Dr. P.R. Nemade
4.	Lakshmi Sagi	National Institute Of Technology Warangal	Enzyme catalysed reaction kinetics	Dr. V.K. Rathod
5.	Abhishek Shishodia	National Institute of Technology Agartala	Kinetic Resolution of Phenyl Glycidyl Ether using Red Mungbean Epoxy hydrolases	Prof. G.D. Yadav
6.	Nemi Jain	Malaviya National Institute of Technology	Synthesis of Graphene-Electrochemical Exfoliation	Dr. P.R. Nemade
7.	Pearl Philip	National Institute of Technology Karnataka	Development of an algorithm for a rapid solution of cubic EOS	Dr. V.H. Dalvi
8.	Ravi Kashyap	MNNIT Allahabad	Extraction of autic acid and to construct ternary equilibrium and distribution curve	Dr. C.S. Matpathi
9.	Shrivallabh Khadilkar	Dr. Babasaheb Ambedkar Technological University, Lonere	Removal of metal ions from waste water using micelle enhanced ultrafiltration	Mrs. K. V. Marathe
10.	Abhijeet Chate	Department of Chemical Technology		
11.	Pankaj Verma	National Institute of Technology, Raipur.	MnO2-CNTs Composite as supercapacitance electrode material	Dr. Neetu Jha
12.	Mohamed Swalih	NIT Calicut	CFD Simulation of Coriolis Scrubber	Dr. C. S. Matpathi
13.	Srashtasrita Das	National Institute of Technology, Rourkela	Carbon capture	Dr. P. D. Vaidya
14.	Ambati Rohini	National Institute of Technology, Warangal	Treatment of Cyanide Containing Waste water using cavitation based approach	Dr. P. R. Gogate

15.	Indrajeet Kumar	Dehradun Institute of Technology	Removal of E. Coli Using Nylon Mambrane	Dr. S. M. Sontakke
16.	Sheath Meena Sakthi Nallasivam	Kongu Engineering College	Synthesis of Ionene	Dr. R. D. Jain
17.	Mandavemula Chaitanya	Andhra University College Of Engineering	Preparation of Conductive polymer polyaniline	Dr. S. M. Sontakke
18.	Sreeshailam Guduru	Rajiv Gandhi University of Knowledge Technologies, IIIT Basar campus, Telangana	Photocatalytic degradation of Xylene Yellow dye under sunlight using ceria	Dr. S. M. Sontakke
19.	Raj Ganesh	Anna University, Chennai	Quantifying the effects of various operating conditions on extraction of polyphenols from Tea.	Dr. A. W. Patwardhan
20.	Himanshu Gupta	MNNIT	Removal of Arseric From water and preparation of low cost purities for the same	Prof. A. B. Pandit

Name : Abhishek Shishodia
Institute : National Institute of Technology Agartala
Name of the Supervisor : Prof. G.D. Yadav

KINETIC RESOLUTION OF PHENYL GLYCIDYL ETHER USING RED MUNG BEAN EPOXY HYDROLASES

Biocatalysis offers solutions where other methodologies often resist, and provide a solution to issues of economic sustainability. There is ongoing increase in knowledge as new protein sequence and structure data are parsed, and as new methods are designed for biocatalyst process optimization. Although classic chemo-catalysis for the enantioselectivity synthesis of chiral molecules is extensively developed, biocatalytic approaches remain extremely attractive for several reasons decreased pollution, highly stereoselective to name few. Epoxide hydrolase (EH, EC 3.3.2.3) extracted from Red mung bean (Vigna angularis) is used as an enzyme for the kinetic resolution of phenyl glycidyl ether to form 3-phenoxy propane-1,2-diol. The cofactor-independent EH catalysis has several advantages, such as broad substrate specificities with high regio- and enantioselectivity and activity in organic solvents, which leads to many successful applications. The effect of various reaction parameters like duration of reaction, temperature, enzyme loading, pH of buffer substrate are observed and optimized. Enantiopure chiral epoxides and ortho-diols formed are used in synthesis of medicines, pesticides, anti-obesity drugs, anticancer agents.

Keywords: Biocatalysis, Enantioselectivity, Kinetic Resolution, Epoxy Hydrolases

Name : Pearl Philip
Institute: National Institute of Technology Karnataka, Surathkal
Supervisor in ICT: Professor V. H. Dalvi

DEVELOPMENT OF AN ALGORITHM FOR THE RAPID SOLUTION OF CUBIC EQUATIONS OF STATE

Our interest lies in the speedy and precise solution of cubic equations of state for real fluid systems in low temperature regions, where three real roots are found. Three analytical cube root-finding methods are compared: Cardano, Monroy and a newly developed Taylor-Cardano method, the latter of which was the aim of this project. The new method was tested against the existing ones in execution times, iterative nature, ease-of-applicability, residuals and round-off errors. In addition to this, algorithms and code was developed for estimation of thermodynamic properties of fluids. Python is used as the simulation environment for better readability of code, fast processing capabilities and mathematical libraries.

Name : Ambati Rohini
Institute: National Institute of Technology Warangal (NITW)
Supervisor in ICT : Dr. P. R. Gogate

TREATMENT OF CYANIDE CONTAINING WASTEWATER USING CAVITATION BASED APPROACH

Wastewater quality has become a serious problem for the environment and for human health. This explains researcher's preoccupation to develop new methods and to improve the efficiency of classical methods of wastewater treatment. The standard of the drinking water is to be maintained for the effective health of human population which can be done by controlling the pollution.

The wastewater may be from different sources like domestic, industrial, agriculture. In the present work it mainly deals with the degradation of potassium ferrocyanide as the model pollutant which is studied using an ultrasonic bath with an operating capacity of 7 L, fitted with a large transducer with longitudinal vibrations having a 1 kW rated power output and operating frequency of 25 kH. Effect of different operating parameters like pH, addition of hydrogen peroxide, effect of ozone on the extent of degradation of cyanides is being investigated using acoustic cavitation. Under the optimized set of parameters the ratio of cyanide with hydrogen peroxide is being varied from 1:0.5 to 1:5 and the optimum value of maximum degradation is obtained. This experimental result shows that the ultrasound combined with the oxidant is a good approach for the degradation of cyanides.

Name : Chate Abhijeet Pramod
Institute: University Department of Chemical Technology, Aurangabad
Supervisor in ICT : Prof. V. G. Gaikar

"HYDROLYSIS FOLLOWED BY ESTERIFICATION OF PALM FATTY ACID DISTILLATE USING POLYSTYRENE SUPPORTED ACIDIC IONIC LIQUID CATALYST AND ITS REUSABILITY".

Palm fatty acid distillate (PFAD) is a lower-value by-product obtained during the refining of palm oil and contains high amount of free fatty acid (FFA). However, it is a potentially valuable and

low-cost raw material for the production of biodiesel through esterification process. As PFAD contains about 85% of FFA, the biodiesel production process considered consists of a hydrolysis section where glycerides are converted to fatty acid followed by an esterification section where fatty acids react with methanol to produce methyl esters (biodiesel). The hydrolysis reaction was conducted with concentrated sulfuric acid as the homogeneous catalyst while the esterification reaction was performed using polystyrene based acidic ionic liquid as a heterogeneous catalyst. The effect of esterification reaction on the catalyst was checked by IR and determination of acidity of catalyst before and after the reaction.

Name : Indrajeet Kumar
Institute : Dehradun Institute of Technology
Name of the Supervisor : Dr. Sharad M. Sontakke

REMOVAL OF E. COLI USING NYLON FILTER

The contamination of groundwater sources by pathogenic bacteria poses a public health concern to communities who depend totally on this water supply. In the present study, a potentially low-cost filter material such as Nylon was used for the disinfection of groundwater. The structure of Nylon membrane was studied by physico-chemical methods. The excellent bacterial filtration activity of the Nylon membrane against Escherichia coli (gram-negative) cultures was demonstrated. Textile fabrics has gained wide acceptance as a filtration membrane, and various substrates having pore size in micron such as Nylon, polyester, and cotton have been shown to develop microbial filtration properties. Here, a simple method to filter bacteria using nylon is presented and the solutions are prepared using Autoclave and Laminar Air Flow Chamber. For checking the bacterial concentration in the underground water, a very small volume of sample was tested by keeping it in shaking Incubator. The results revealed that nylon filters were able to decrease the concentration of E. coli from groundwater sample, with a higher removal efficiency achieved by using two membranes and a lower efficiency by using single membrane. This study therefore suggests that the Nylon membrane demonstrated antibacterial activity against E. coli and can be used as a potential alternative cost-effective filter for the disinfection of groundwater and production of safe drinking water.

Keywords: Autoclave; Laminar air flow chamber; filter systems; bacterial removal; water disinfection; groundwater

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Name : Lakshmi Himaja Sagi
Institute : NIT Warangal
Supervisor in ICT: Dr. Virendra K. Rathod

ENZYME CATALYZED REACTIONS (LIPASE CATALYZED ESTERIFICATION USING ULTRASOUND IN A SOLVENT FREE SYSTEM)

Iso-amyl propionate is a short chain ester used in food and beverages and other industry to impart artificial flavoring and fruity note. This work presents the optimization and kinetic aspects of synthesis of isoamyl propionate by the esterification of isoamyl alcohol with propionic acid using immobilized lipase Novozyme 435 in a solvent free system (SFS) using ultrasound. The systematic experimentation involves change of one working parameter at one time while keeping

the others constant. Process parameters such as reaction time, temperature, acid to alcohol molar ratio, ultrasound power, duty cycle and enzyme loading were optimized to achieve maximum conversion. A higher conversion (90 %) was achieved with the reaction conditions such as: temperature 600 C, enzyme loading 2% w/v, molar ratio of acid to alcohol 1:3, ultrasound power 60W, duty cycle 83% (10 min on and 2 min off) and reaction time of 3 hours. The bisubstrate kinetic models of the enzyme catalyzed reactions namely Ordered Bi–Bi, Random Bi–Bi and Ping-Pong Bi–Bi are to be applied to determine the initial rates and correlate with the experimental findings. SFS is the added benefit to produce such commercially valuable flavor ester.

Name : M. Raj Ganesh
Institute: AC College of technology, Anna University
Supervisor in ICT : Dr. A. W. Patwardhan

QUANTIFYING THE EFFECTS OF VARIOUS FACTORS ON EXTRACTION OF POLYPHENOLS

The experiments for the extraction of tea components at different temperatures and particle sizes were done. The samples obtained were analyzed using UV spectrophotometer. The results obtained as UV absorbance were converted into Gallic acid equivalence (GAE). The results were plotted using excel. From the results it was apparent that the rate of extraction of polyphenols (tea component) increases with increase in temperature and decrease in particle size. Also the results were fitted with Spiro's two phase model and rate constants were calculated at different temperatures. Using Arrhenius equation the value of activation energy was found to be equal to 17.45 KJ/Mol. This large value of activation energy clearly indicates that the polyphenol extraction process requires much energy and involves considerable mass transfer resistances. To analyze the effect of change in internal mass transfer resistance on rate of extraction of polyphenols in tea infusion, particles of different size were prepared using sieves and particle sizes were calculated by image analysis. For different particle sizes the value of effectiveness factors were calculated and the effect of particle size on rate of extraction of polyphenols was understood quantitatively. Also from the direct proportional relation of Thiele modulus and particle size, the optimum size of tea particles which corresponds to the effectiveness factor value of 0.95 was calculated. It was found to be equal to 0.227mm.

Name: Mandavemula Krishna Chaitanya
Institute: Andhra University College of Engineering
Name of the Supervisor : Dr. Sharad M Sontakke

SYNTHESIS OF A CONDUCTIVE POLYMER -POLY ANILINE

The present project reports the chemical synthesis of one of the higly conductive polymer Poly aniline. The process undergoes here is the oxidative polymerisation of Aniline monomer using Ammonium peroxy disulphate as oxidant and HCl as the dopant. The simple characteristics of the product like

Keywords: Poly aniline, Chemical oxidative method, Emeraldine, FTIR analysis, Conductivity etc

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Name: Nemi Kumar Jain
Institute: Malaviya National Institute of Technology - Jaipur
Name of the Supervisor: Dr. Parag R. Nemade

SYNTHESIS OF GRAPHENE: ELECTROCHEMICAL EXFOLIATION

Owing to wide variety of applications of graphene in medicine, water purification, paints, sensors, mobile phones and several other fields, high quality and economical way of synthesizing graphene is desirable. In this study, a cost effective and simple approach to produce a few layers of graphene is reported. Here, the synthesis route is based on electrochemical exfoliation of dry cell graphite rods. Instead of using strong acids (which oxidizes and damages the surface of graphene) and organic salts, solution of potassium hydroxide was used as an electrolyte. XRD and FTIR characterizations corroborate that the graphene sheets exfoliated by our electrochemical method preserve the intrinsic structure of graphene.

Keywords: Electrochemical exfoliation, few layers graphene, XRD, FTIR

Name : Pankaj Verma
Institute : National Insititute of Technology Raipur
Supervisor in ICT : Dr. Neetu Jha

CNTS-MNO2 COMPOSITE AS SUPERCAPACITANCE ELECTRODE

Recently supercapacitors are showing great potential in applications like communications, electronics, transportation, aviation, and related technologies. It should possess the properties of nontoxicity, environmental friendliness, low cost, high safety, good efficiency, featuring high power density, long cycle life, fast charge and discharge rates and wide temperature range operation. In the present work, we synthesize γ phase -MnO2 and composite of carbon nanotubes and MnO2 (CNT-MnO2) at room temperature by simple chemical method at room temperature and ambient conditions. The synthesized nanocomposite was characterized by XRD, FTIR, Particle size analyser (PSA) and electrochemical methods. The MnO2/CNT nanocomposite electrode exhibits high capacitance value of 75 F/g larger compared to 9 F/g obtained for pure MnO2 electrode. Specific charge storage property obtained for pure CNT is 30 F/g, hence confirming the synergistic effect of MnO2-CNT nanocomposite. The high supercapacitive performance of the MnO2/CNT nancomposite electrode is due to its high specific surface area and unique hierarchy architecture which facilitate fast electron and ion transport.

Name : Rajat Subhra Ghosh
Institute : National Institute of Technology - Trichy
Name of the Supervisor : Dr. Parag R. Nemade

SYNTHESIS OF GRAPHENE: ELECTROLYTIC EXFOLIATION

The Electrolytic Exfoliation of Graphite was done using Potassium Hydroxide as Electrolyte and Graphite Rods from dry cells as electrodes to synthesize exfoliated Graphene. At present Hummer's method has been used to produce RGO but is time consuming, with further disadvantages of C-O bond linkages which degrades the excellent electric and mechanical properties of Graphene. Experiments were carried out to demonstrate that electrolytic exfoliation can be used to directly produce Graphene which was confirmed using XRD studies. The quality of Graphene produced

was further confirmed using FTIR studies. Generation of active species like OH anions at cathode which then intercalates the Graphite rod of Anode where the OH- are oxidized to O2 gas, this production of gas helps in exfoliating Graphite. Various Electrolytes such as (NH4)2SO4, Oxalic Acid were used and was found out that KOH (1M) was suitable for synthesizing Graphene.
Keywords: Electrochemical Exfoliation, Graphene, graphite

Name : Ranjana Juneja
Institute : Maulana Azad National Institute of Technology, Bhopal
Supervisor in ICT : Dr. V.H. Dalvi

DEVELOPING A ROBUST ALGORITHM FOR COUNTER-CURRENT CONTACT

This work provides insights into optimal operation of countercurrent contact processes encountered in chemical plant. The primary objective of the project is development of an algorithm for multistage multicomponent distillation operation using Tridiagonal matrix method as the basis of solution. The current work illustrates the algorithm for binary mixture in which distribution coefficient (K) nearly varies with temperature, hence its effect is neglected and is determined using relative volatility relation, which is considered constant.
Keywords: countercurrent, algorithm, tridiagonal, distribution coefficient.

Name: Ravi Kumar Kashyap
Institute : Motilal Nehru National Institute of Technology, Allahabad
Supervisor in ICT : Dr. C. S. Mathpati

CONSTRUCTION OF TERNARY LIQUID- LIQUID EQUILIBRIUM CURVE FOR TWO SYSTEMS

Liquid extraction (sometimes called solvent extraction) is the separation of constituent of a liquid solution by contact with another insoluble liquid. The solvent is distributed between two immiscible or partially miscible liquids. The two liquid phases are then separated and solute is removed from solvent by other operations like distillation and solvent is recovered for further use. In this project equilibrium curve and distribution tie lines are constructed for various systems. Various systems were studied and analyzed experimentally. Data was obtained by simple extraction in laboratory and results were plotted in triangular coordinates. From the equilibrium diagrams were studied and distribution coefficient and selectivity (separation factor) can be calculated. The effectiveness of separation is measured by selectivity of solvent. The extent of separation depends on distribution coefficient. Results also revealed the change in partition coefficient with a change in solute concentration. Two systems namely, Toluene- Acetic acid- Water and n-Butanol- Acetic acid –Water, are chosen for this study.
Keywords: Extraction, Partition coefficient, Selectivity, Ternary diagram, triangular coordinates

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Name: Sonal Gupta
Institute: National Institute of Technology, Warangal
Supervisor in ICT : Dr. Neetu Jha

GRAPHENE BASED SPONGE FOR ADSORPTION OF IMPURITIES FROM WATER.

In this work, graphene oxide was synthesized by simplified Hummers method and then converted into graphene foams by chemical reduction and three dimensional cross linking were done

using ethylenediamine. Then soot treatment was also performed to increase its porosity and absorption capacity. Reduced graphene oxide (RGO) – MWCNT composite was also prepared. The conversion of graphene oxide into reduced graphene oxide was verified by X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FTIR). Its extraordinary hydrophobic property was tested. These sponges show excellent hydrophobic nature and high absorption capacity. Adsorption test was performed using toluene and n-dodecane and methyl red as dye to observe by naked eyes. RGO sponge was able to adsorb toluene by 73x of its own weight and 59x of its own weight for n-dodecane in few minutes. After soot treatment, its weight is reduced by 37% and adsorption of toluene is increased to 80x of its weight in few seconds. Thus RGO sponge proved to be efficient and low cost material to remove oil and organic solvents form the industrial waste water.

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ABSORPTION BASED CARBON CAPTURE USING METHYLDIETHANOL AMINE AND A BLEND OF METHYLDIETHANOL AMINE AND PIPERAZINE

Climate change seems to be one of the most challenging issues being faced by the world. The concern about the high level of greenhouse gases in the atmosphere has recently drawn more attention than before. Carbon capture seems to be a very promising technology to reduce carbon dioxide emissions. The project aims at absorption based technology for carbon dioxide capture using aqueous methyldiethanol amine and an aqueous blend of methyldiethanol amine and piperazine. The absorption of carbon dioxide in the amine was experimentally carried out in the absorption/desorption system. The carbon dioxide absorbed by the solutions was analyzed with the help of carbon dioxide electrode and gas chromatography of the gas sample collected from the exit at the top of the absorber column was conducted to analyze the composition of the outlet gas. The rate of carbon dioxide absorption and amine loading of both the solutions were then calculated for a comparative study of the amine solutions.

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EXPERIMENTAL AND COMPUTATIONAL STUDY OF GAS-SOLID PACKED AND FLUIDIZED BED

Fluidization is a very wide used technique, in which small particles are allowed to fluidize in the interstices of relatively large and stationary packing to enhance heat transfer rates of a unary packed bed of same size particles. Owing to wide variety of applications of packed fluidized bed in dryer, reactors and various food industries. In the present work has been made to study the random packing of particle in column, and effect of different system parameters (viz. size and density of the bed materials and initial static bed height) on the bed dynamics. Experimental study has carried out using the gas-solid packed column for calculation of pressure drop and minimum fluidization velocity and bed height. Then comparison with Computational study using a commercial computational fluid dynamics (CFD) package Fluent.

Keywords: Gas-Solid Fluidization, random packing, computational fluid dynamics

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REMOVAL OF CU++ IONS FROM WASTE WATER USING MICELLE ENHANCED ULTRAFILTRATION

Copper (Cu++) ions were removed from aqueous waste using micelle enhanced ultrafiltration (MEUF) with a mixture of surfactants. The surfactant mixture was the nonionic surfactant Triton X 100 (TX 100) mixed with Dowfax™ anionic surfactant (DFX) in different molar ratios ranging from 0.1–1.5. The operational variables of the MEUF process such as pH, applied pressure, surfactant to metal ion ratio and nonionic to ionic surfactant molar ratio (α) were optimized for real time simulations. Rejection of Cu++ and TX 100 was 98% and 97% respectively whereas that for DFX was 70%. The permeate flux was measured and calculation of all the resistances (fouling resistance, resistance due to concentration polarization) for entire range of α respectively is to be done. A calculated permeate flux was found to be declining with time.

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CFD ANALYSIS OF GAS FLOW IN A CORIOLIS EFFECT SCRUBBER

Coriolis scrubber is the latest type of gas cleaning equipment which makes use of natural Coriolis force to swirl the liquid stream and enhance mass transfer on a conical grid shaped structure. The performance of scrubber is studied based on the analysis of flow pattern of gas stream using CFD tools. The size of liquid header which is used to spray liquid into the grid is determined using the gas stream velocity using suitable correlation. The favorable design parameters are found by analyzing the velocity, pressure drop and turbulence characteristics of the gas stream. The geometry is drawn using GAMBIT and the flow is simulated in FLUENT. Based on the results obtained after simulation, the behavior of system with change in inlet velocity, inlet size, inducer blade length & inclination is studied. It is found that though the system behavior is highly dependent on inlet velocity and inlet radius, change in length and inclination of swirl inducer is not that much significant in system behavior. Even then, an inducer of higher length and lower inclination is preferred since it reduces the pressure drop. It is also found that pressure drop inside system varies exponentially with inlet velocity. The study showed that CFD method can effectively reveal the mechanism of gas flow pattern inside a scrubber.

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DERIVE A TECHNIQUE TO REMOVE ARSENIC FROM GROUND AND SURFACE WATER

Arsenic being the toxic element affects human health very adversely. Ground and surface water are contaminated with arsenic. Research has been carried out to use the adsorption process in order to reduce arsenic content below the standardized MCL of 10 ppb as directed by WHO in 2006. During this research substrates like sand, polypropylene and polystyrene were used to be

coated with Iron oxide as arsenic shows high affinity to Iron oxide. Precipitation and adsorption process were used to coat iron oxide from (0.25 M, 0.625 M and 2.5 M) Fe (III) solution. Different temperature conditions were analyzed and the best suited were determined. Moreover polypropylene and polystyrene were modified using oxidation and etching method with nitric acid and chromic acid respectively to prepare the surface with carboxyl functional group and coating was done. Iron loading was determined using UV VIS Spectroscopy at 508 nm followed by Acid digestion. Polypropylene showed good results with iron loading of 766.67 mg/g of polypropylene and sand showed iron loaded of 380 mg/g of sand while Polystyrene unfortunately showed no affinity for Iron. Batch study for Sand and Polypropylene was done and samples have been kept for ICP-MS analysis. As noticed from literature iron loading of 45 mg/g of substrate was enough to reduce arsenic content below 10 ppb. It is supposed that the results of this analysis will be satisfactorily.

Keywords: Arsenic, Iron Oxide Coating, Adsorption, polypropylene, Etching

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SYNTHESIS OF IONENE WITH DISULPHIDE LINKAGE FOR GENE DELIVERY.

Experimentation for the synthesis of ionene with disulphide linkage from bromoacetic acid and thiourea in ethanol was carried out. The steps involved were to produce thioglycolic acid from bomoacetic acid and thiourea, dimerization of thiogylcolic acid to dithiodiglycolic acid and chlorination of the dimer. A series of experiments were carried out with different concentrations of the starting materials (1.1, 1.5:1, 2:1 molar ratio) and temperatures (30, 80 degree centigrade) which yielded thioglycolic acid. The Product was characterized using Infrared Spectroscopy. Thin Layer Chromatography was employed to monitor the progress of the reaction. Response surface method (Box Benkhen design) was used to optimize the time of reaction for production of thioglycolic acid. It was found that at 1.5 moles of bromoacetic acid and 1 mole of thioglycolic acid at 80 degree centigrade arrived at an optimum time of 3.08 hours. The temperature at which reaction occurs and the concentration of the reactants were found to affect the characteristics of the product.

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PHOTOCATALYTIC DEGRADATION OF XYLENE MILLING YELLOW DYE USING COMMERCIAL CERIA UNDER SOLAR LIGHT

The photocatalytic degradation of organic dye Xylene milling Yellow was carried out with the aid of commercially prepared ceria catalyst. It was reported by many people, ceria is known to show good absorption of photons and able to create electron hole pairs with negligible recombination in visible range irradiation. Experiments were carried out to check whether ceria is able to degrade the dye under visible light or not and found to show some active degradation of chromophoric group of XY dye. Generation of active species like OH radicals, superoxides is

thought to be a key factor in decomposition of chromophore group. Here, the effect of catalyst loading on dye remediation was studied, 0.75 g/L is found to be the optimum loading. The adsorption characteristics of dye molecules on catalyst surface in neutral solution were also studied and found to show poor affinity of dye molecules to adsorb on ceria because of opposite surface charges.

Keywords: Photocatalytic degradation, adsorption, radicals, surface charge.

COLLABORATIVE ACTIVITIES OF THE DEPARTMENT

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- Reliance Industries Ltd
- Dow Chemicals Ltd
- Lanxess India Ltd.

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purification by three phase partitioning and impact of t-butanol on freeze drying	Garg R., Thorat B. N. Nattokinase	Separation and Purification Technology	131	19-26	2014
Fluidized Bed drying of spouted wheat (Triticum aestivum)	Shingare S. P., Thorat B. N.	International Journal of Food Engineering	10(1)	29-37	2013
Effect of Hydrodynamics during Crystallization on Mechanical Dewatering of Salicylic Acid.	Deulgaonkar S.U., Hakkinen A. and Thorat B. N.	Drying Technology	31(12)	1354-1361	2013
Effect of freeze thawing study on curcumin liposome for obtaining better freeze dried product.	Jangle R. D. and Thorat B. N.	Drying Technology	31(9)	966-974	2013
Selective HPLC method development for Soy phosphatidylcholine fatty acids and its mass spectrometry.	Jangle R. D., Galge R. V., Patil V. V. and Thorat B. N.	Indian Journal of Pharmaceutical Sciences	75(3)	339-345	2013
RP-HPLC method development for curcuminoids and curcuminoids loaded liposome formulation.	Jangle R. D. and Thorat B. N.	Indian Journal of Pharmaceutical Sciences	75(1)	60-66	2013
Destruction of chlorinated organics by hydrotreatment using Ru/TiO2 catalyst,	Vaidya PD and Dussa VS,	Can J Chem Eng	91	731-738	2013
Activated DEEA solutions for CO2 capture – A study of equilibrium and kinetic characteristics,	Sutar PN, Vaidya PD and Kenig EY,	Chem Eng Sci	100	234-241	2013

Kinetics of aqueous-phase hydrogenation of levoglucosan over Ru/C catalyst,	Bindwal AB and Vaidya PD	Ind Eng Chem Res	52	17781-17789	2013
Catalytic carbon dioxide hydrogenation to methanol: A review of recent studies, ,	Jadhav SG, Vaidya PD, Bhanage BM and Joshi JB	Chem Eng Res Des (in press)			2014
Reaction kinetics of vanillin hydrogenation in aqueous solutions using a Ru/C catalyst,	Bindwal AB and Vaidya PD,	Energy Fuels	28	3357-3362	2014
Absorption of carbon dioxide into sterically hindered amines: Kinetics analysis and the influence of promoters, ,	Vaidya PD and Jadhav SG	Can J Chem Eng (in press)			2014
Kinetics of carbon dioxide removal by ethylene diamine and diethylenetriamine in aqueous solutions, and	Salvi AP, Vaidya PD	Kenig EY, Can J Chem Eng (in press)			2014
On the efficacy of Ru/Al2O3 catalyst for steam reforming of ethylene glycol,	Vaidya PD and Sundari R	Chem. Eng. Commun. (in press)			2014
Investigation of flow and heat characteristics and structure identification of FLiNaK in pipe using CFD simulations	Sona, C.S., Khanwale, M.A., Mathpati, C.S., Borgohain, A., Maheshwari, N.K.	2014	Applied Thermal Engineering	70	1
High temperature corrosion studies in molten salt-FLiNaK	Sona, C.S., Gajbhiye, B.D., Hule, P.V., Patwardhan, A.W., Mathpati, C.S., Borgohain, A., Maheshwari, N.K.	2014	Corrosion Engineering Science and Technology	49	4
Koli U, Krishnan RA, Pofali P, Jain R*, Dandekar P*	Journal of Biomedical Nanotechnology	10	1953-1997		2014
Dyawanapelly S, Ghodke S, Vishwanathan R, Dandekar P*, Jain R*.	Journal of Biomedical Nanotechnology	10	1998-2037		2014
S. A. Kapole, B. A. Bhanvase, D. V. Pinjari, R. D. Kulkarni, U. D. Patil, P RGogate, S. H. Sonawane and A. B. Pandit	Composite Interfaces	-	1-18		2014
Mohan M. Gore, Virendra Kumar Saharan,Dipak V. Pinjari, Prakash V. Chavan, Aniruddha B. Pandit	Ultrasonics Sono chemistry	21	1075-1082		2014

D. V. Pinjari*, Krishnamurthy Prasad*, A. B. Pandit and S. T. Mhaske,	Chemical Engineering and Processing: Process Intensification	74	178-186		2013
S. S. Barkade, D. V. Pinjari, U.T. Nakate, A. K. Singh, P.R. Gogate, J. B. Naik, S. H. Sonawane and A. B. Pandit	Chemical Engineering and Processing: Process Intensification	74	115-123		2013
SunitaRaut- Jadhav, VirendraKumar Saharan, DipakPinjari, ShirishSonawaneDaulat Saini, AniruddhaPandit	Journal of Environmental Chemical Engineering	1	850–857		2013
B. A. Bhanvase, Y. Kutbuddin, R. N. Borse, N. R. Selokar, D. V. Pinjari, P. R. Gogate, S. H. Sonawane and A. B. Pandit	Chemical Engineering Journal	231	345-354		2013
SunitaRaut- Jadhav, Virendra Kumar Saharan, DipakPinjari , ShirishSonawaneDaulat Saini, AniruddhaPandit	Journal of Hazardous Materials	261	139–147		2013
ShrikantBarkade, DipakPinjari, A. Singh, ParagGogate, JitendraNaik, Shirish H. Sonawane, Muthupandian Ashokkumar, AniruddhaPandit	Industrial & Engineering Chemistry Research	52	7704–7712		2013
Hyacintha R. Lobo,Balvant S. Singh,Dipak V. Pinjari, Aniruddha B. Pandit, Ganapati S. Shankarling	Biochemical Engineering Journal	70	29-34		2013
Hyacintha R. Lobo, Balvant S. Singh, Dipak V. Pinjari, Krishna J. Jarag, A. B. Pandit, Ganapati S. Shankarling	Ultrasonics Sonoc hemistry	20	633-639		2013
Balvant S. Singh, Hyacintha R. Lobo, Dipak V. Pinjari, Krishna J. Jarag, A. B. Pandit, Ganapati S. Shankarling	Ultrasonics Sono chemistry	20	287-293		2013
S.R. Shirsath, D.V. Pinjari, P.R. Gogate, S.H. Sonawane, A. B. Pandit	Ultrasonics Sono chemistry	20	277-286		2013

THE ANNUAL REPORT OF THE TECHNOLOGICAL ASSOCIATION

ABOUT THE TECHNOLOGICAL ASSOCIATION:

Technological Association (TA) is an organisation that conducts co-curricular and extra-curricular activities in ICT. Currently, the Vice Chancellor, Prof Dr. G.D. Yadav is the President of the TA and Prof. Dr. R.R.Deshmukh is its current Vice President. A 24 Member Core student body organises these activities.

TA has several clubs such as Literary Club, Art Club, Manthan and Music Club. The Art club has the annual ART exhibition which displays every form of artwork by the students of the institute along with several art workshops and events throughout the year. Manthan promotes Marathi culture in the institute and organises talk-show, workshops, poetry recitation and many more events. Literary Club organises regular quizzes, debates, book club meet-ups and also publishes the institute magazine called "The Spirit of ICT". The Music Club propagates the sense of music and dance into the multitude of the institute. Its activities include regular and efficient practice sessions where individuals prepare themselves and learn different ragas, dance forms and their choice of musical instruments. The E-Cell of ICT helps cultivate and promote the entrepreneurial spirit among the students. The Bombay Technologist is the annual technical journal and invites scientific research and review articles from students of all disciplines i.e. Chemical Engineering, Chemical Technology and Pharmacy studying in the Institute. It aims to create awareness and encourages the students regarding various aspects of technical writing.

TA also organises various inter and intra institute fests. "Funtech" is the annual intra ICT fest of the institute where a number of events from scratch to totality are carried out and the students can showcase their talent. "Vortex ICT: the Chemfest", conducted in the odd semester is the technical fest of the institute and has Poster and Paper Presentation, Pharmacy events and also gives opportunity to students from all over the country to solve Industry Defined Problems and present their research work. "Manzar" , is one of the biggest, rapidly growing and most attended cultural festivals in Mumbai . "Sportsaga" is the sports festival that attracts individuals and teams from all over Mumbai. The ICT Marathon which happens every year is the highlight of the festival and is associated with a social cause.

Soham D'Souza
General Secretary

Nidhi Pant
Cultural Secretary

Abhishek Hule
Federal Treasurer

OFFICE BEARERS OF THE TECHNOLOGICAL ASSOCIATION

Name	Position
Soham D'Souza	General Secretary
Nidhi Pant	Cultural Secretary
Abhishek Hule	Federal Treasurer
Pooja Tilak	Public Relations Secretary
Faisal Ali	Public Relations Secretary
Akansha Srivastava	Sponsorship Secretary
Arjun Gopal	Technical Secretary
Vibhor Gajbhiiye	Design Secretary
Pranjali Patil	Art Club Secretary
Kony Chatterjee	Literary Club Secretary
Rutvi Ajbani	Music Club Secretary
Shishir Deshmankar	Music Club Secretary
Amruta Joglekar	Manthan Secretary
Sharvari Ugaonkar	Ladies' Representative
Shalini Shashi	The Bombay Technologists Secretaries
Rucha Thakar	The Bombay Technologists Secretaries
Saurav Bandyopadhyay	The Bombay Technologists Secretaries
Saket Lote	Sports Secretary
Siddhant Varshney	Sports Secretary
Achal Agarwal	Manzar Secretary
Ronak Vaghani	Manzar Secertary
Ashish Jayraman	Vortex Secretary
Sunil Sunkara	Vortex Secretary
Kheizer Thakur	UDCT Alumni Association Student Secretary

CLUB ACTIVITIES CONDUCTED :

SPARKS ! - THE LITERARY CLUB :

MISSION : SPARKS – THE LITCLUB OF ICT was set up to encourage 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.

ACTIVITIES DONE:

REVAMPING AND NURTURING THE "ONLINE STUDENT NEWLESTTER-THE SPIRIT OF ICT

- THE SPIRIT OF ICT is the official newsletter of the institute which enables students to use an online portal to hone their writing skills.
- In the year 2013-2014, The Spirit was revamped visually with themes to enable greater interaction

OUTCOME:

- The readership of The Spirit increased by 200% during this year with more than 500 hits in a single day.
- More and more students started contributing by writing articles, poems and sharing the pictures clicked by them.

STARTED THE "BOOKS AND MOVIES SOCIETY":

- To encourage students to read and exchange their thoughts about literature and the books they're reading, the movies they're watching, for the first time in 2013-2014.
- The Books and Movies Society was set up to encourage students to sit down and have an informal discussion.

OUTCOME:

- This saw a lot of success with books like The Catcher in the Rye, movies like The Ship of Theseus being featured, among others.
- It fostered the habit of reading and appreciating cinema.

"LUMEN"-THE LITERARY FESTIVAL :

- For the first time in the history of Sparks – The LitClub, the institute saw a literary festival dedicated to encourage students using various language skills and quizzing knowledge to win prizes.
- The festival also showcased the play – The Importance of Being Earnest by Oscar Wilde,
  performed by students.

QUIZZING:

- Under the patronage of Sparks, quizzing made a big comeback in ICT with the ICT v/s VJTI quiz.
- Regular quizzes at an institute level were organised as well to encourage and train students of ICT.

"BOOKS BY WEIGHT"-EXHIBITION:

- Sparks also witnessed an unprecedented event with a large participation when it organised the Books By Weight initiative
- A large collection of fiction and non-fiction titles were sold by weight in the institute.

OUTCOME:

- A lot of expensive books were made available at very cheap prices
- The students benefitted greatly from this and enjoyed the experience

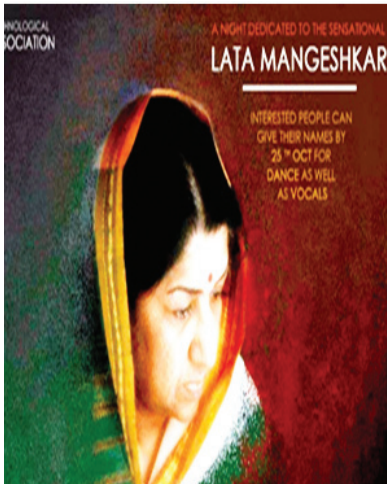
MUSIC CLUB:

MISSION:

Music Club is a place which instils seeds of musical sense among its people. Its prime objective is to bring out sort of "masked" musical face of its people into the open air all-round the year. Music Club propagates the sense of music and dance into the multitude of the institute. Its activities include regular and efficient practice sessions where individuals prepare themselves for intra institute events and also learn different ragas, dance forms and their choice of musical instruments. Manzar, the Cultural Fest of the institute, consists of five major events managed by the Music Club of ICT. Its people are not only proficient at both understanding music and dance, but managing their human resources for maximal output. Not only the cultural fest, but the Music Club has also lit up the Technical Fest, Vortex and the Sports Fest, Sportsaga of the institute. In fact, seldom an event in ICT has taken place without the active participation of the Music Club.

ACTIVITIES DONE:

- Early in the year, new comers to the institute were introduced to the club through their exclusive event Freshers. This highlighted the talented artistes and ensured their participation in further events of the club.



- For the first time in the history of the music club events, a night solely dedicated to Lata ji was appreciated. Our own Professors Mr. S.S Bhagwat and Music Club Convenor Mr. A.V Patwardhan performed and enjoyed the evening. The classics of Ms. Lata Mangeshkar were revived from "Aapki nazaron ne samjha" to "Jiya jale". Bringing out the versatility in revered Lataji's songs, the artistes presented dances in genres ranging from classical and folk to old-school Bollywood and even Bolly-Jazz. The evening commenced with 25 performances on the list, but instead 32 performers came on stage with some soulful impromptu artwork within themselves.
- The event "Rock Through the Ages" as named by our convenor, touched the hearts of all present in the New Audi. This sure was an experiment that certainly paid off in many ways that even the club and its members didn't even realize. The modern use of instruments and vibrant music corresponding to it was learnt by the club members and spread throughout the institute. The new audi witnessed the young crowd head-banging while the elderly certainly considering the rock music "not that bad". The night ended with sweaty smiles and on fire back to back performances by three immensely talented alumni or I proudly say music club alumni.

OUTCOME:

- Music Club has been an indispensible entity of the Institute. Members of the club are seasoned and nurtured enough to lead this body into a new dawn by working upon the pre-existing legacies, as well as by inculcating indigenous ideas, which coerces into holding a belief that next year our endeavours will culminate into something more special and vibrant.
- More students taking interest in singing,dancing and instrumental music.

ART CLUB:

MISSION:

Encouraging students to express themselves to various forms of art

ACTIVITIES DONE:

- Conducted an art expedition to Jehangir Art Gallery for ICT students
- Organised a Doodle Making session
- Organised a LOTUS making workshop
- Conducted the ALL ICT ANNUAL ART EXHIBITION
- Organised a Photography contests

OUTCOME:

- A lot of participation from UG as well as PG students for regular events.
- Excellent art display at the Annual Art Exhibition(Entries received from all UG and PG Batches)

MANTHAN CLUB:

MISSION:

Manthan is the club promoting regional languages, its culture and tradition in the institute.

ACTIVITIES DONE:

In academic year 2013-2014, Manthan -- Kshitij Pratyekach gave a variety of programs starting from

our own ICTians to guest speakers. "Manoranjanaatun Prabodhan" was the basic purpose of all the events that took place throughout the year.

In this year total seven programs were organized

Prakashwata (16-09-2013)

Mr. Prakash Amte ans Mrs. Mandatai Amte were the guest speakers. The talk was based on conibution of Amte family in order to improvise the lifestyle of people living in Hemalkasa and their perspective towards life. Social service comes from heart and it is silent, was the motivational thought was in limelight.

Mazi anandyatra (19-09-2013)

Mrs. Vijaya Wad was the guest speaker. Mrs. Wad gave information about the "Marathi online Encyclopedia" designed by the Government of Maharashtra and Vishwakosh Mandal.

She also talked on the lifestyle of woman and their role in the society.

K.....Kavitecha (17-10-2013)

Kavita wachan and expressing your own thoughts and sharing thoughts of great poets was the theme for K...Kavitecha..... Our own ICTinas including teaching and non teaching staff showed active participation. Like last 4-5 years this program was enjoyed by everyone.

Jagatik Vishwakosh Din (03-12-2013)

Jagtik vishwakosh din and vaktrutva spardha was organized by Vishwakosh mandal jointly with ICT Manthan.

Arthapasun Arthaparynt (22-01-2014)

Mr. Chansrashekhar Tilak was the guest speaker. The subject of the talk was "finance" and various parameters associated with it. People from outside and our own ICTians with majority of the professors were present for the session and synergistic effect of chemistry and economics was very fruitful.

Marathi Bhasha Din.... (27-02-2014)

Jagtik Marathi bhasha din kavi

kusumagraj jayanti and veer sawarkar punyatithi was the theme.

Famous music director Mr. Kaushal Inamdar was invited for the program. Marathi Abhimaan Geet rachana, jadan ghadan and sangitic prawas was unfolded in that hour. Music lovers and all the people enjoyed the show and the program was ended with "Marathi Abhimaan Geet".

- Apart from these programs,Manthan had also organized three book exhibitions based on literature, music and science.
- Swami Vivekananda Jayanti, Marathi Vishwakosh din and Marathi bhasha din were celebrated with the help of book exhibition and novel way of spreading the importance was explored.
- Information about great Marathi personalities and their work was showcased in entire marble hall on the day of Marathi bhasha din to salute them and to get motivated.

OUTCOME:

In this academic year variety was given by Manthan. Manoranjan and Prabodhan was well achieved and definitely we will give our best to furnish Manthan, its culture and heritage.

BOMBAY TECHNOLOGISTS' JOURNAL:

MISSION:

Bombay Technologist is the annual technical journal of the student council that publishes articles written by students on scientific research, engineering and technology .

ACTIVITIES DONE:

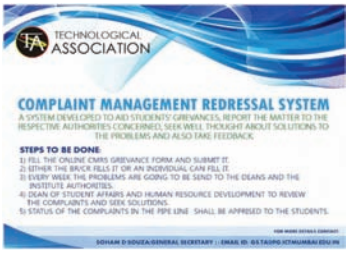
- Technical Writing session by Mr.Ravi Raghavan(The Chemical Weekly) supported by the UDCT Alumni Association.
- Publishing the Annual Bombay Technologist Journal

OUTCOME:

- Research interest development in students.
- Encouraging students to carefully document and cite their research work during their

SYSTEM BUILDING DONE:

I) LAUNCHING THE "COMPLAINT MANAGEMENT REDRESSAL SYSTEM" TO CATER TO STUDENT GRIEVANCES.



MODE OF OPERATION:

- A simple google form was made available to all the students via email.
- The students could write any complaint that he/she faces in the Institute.
- Categorical segregation of complaints(w.r.t the various institutional departments and authorities) is done by the General Secretary.
- On a regular basis the complaint record would be sent to the Deans and would be reviewed by the Dean SA-HRD regarding the complaints and seek solutions

- The status of the complaints in the pipelines would be appraised to the students .

OUTCOME:

- A common channel for complaint management.
- Time saving for students.
- Easily accessible.
- Data analysis of the complaints.

II) DRAFTING THE SPONSORSHIP RULE BOOK AND CODE OF CONDUCT :

PRINCIPLES:

1. Established a "Code of Conduct" to be followed by various entities and bodies within the Technological Association for the academic year 2013-2014.
2. Set forth a set of rules, guidelines and policies to be adopted by the council pertaining to the sponsorship agenda.
3. Framed the steps to be taken by the Sponsorship Cell of the student council during the process of acquiring/distributing sponsorship funds for the academic year 2013-2014.
4. Established the optimum distribution ratio for money as well as fund distribution within the various entities of the student council.

OUTCOME:

- Professionalism instilled in the council regarding the sponsorship matters.
- Emphasis on ethics and integrity while handling and using/collecting the sponsorship amounts.

III) MAKING THE TECHNOLOGICAL ASSOCIATION WEBSITE:

- A comprehensive and user friendly website was made describing the functioning of the student council.
- Each club and festival description was given on the website.
- The contact details of the council members were provided on the website.
- URL: http://technologicalassociation.wordpress.com/

NEW INITIATIVES UNDETAKEN:

I) TEDXICTMUMBAI

TEDx ICTMumbai
x = independently organized TED event

ABOUT

TEDxICTMumbai is an event , organised independently by the students of the Institute of Chemical Technology, Mumbai operated by an official TED license.

MISSION

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.

DESCRIPTION

About TEDx, x = independently organized event

In the spirit of ideas worth spreading, TEDx is a program of local, self-organized events that bring people together to share a TED-like experience. At a TEDx event, TEDTalks video and live speakers combine to spark deep discussion and connection in a small group. These local, self-organized events are branded TEDx, where x = independently organ...ized TED event. The TED Conference provides general guidance for the TEDx program, but individual TEDx events are self-organized. (Subject to certain rules and regulations.)

ABOUT TED

TED is a nonprofit organization devoted to Ideas Worth Spreading. Started as a four-day conference in California almost 30 years ago, TED has grown to support those world-changing ideas with multiple initiatives. The two annual TED Conferences invite the world's leading thinkers and

doers to speak for 18 minutes on a diverse mix of topics. Many of these talks are then made available, free, at TED.com. TED speakers have included Bill Gates, Jane Goodall, Elizabeth Gilbert, Sir Richard Branson, Nandan Nilekani, Philippe Starck, Ngozi Okonjo-Iweala, Isabel Allende and former UK Prime Minister Gordon Brown. The TED2014 Conference will take place in Vancouver, British Columbia, along with the TEDActive simulcast in neighboring Whistler. TEDGlobal 2014 will be held in Rio de Janeiro, Brazil.

TED's media initiatives include TED.com, where new TED Talks are posted daily; the Open Translation Project, which provides subtitles and interactive transcripts as well as translations from volunteers worldwide; the educational initiative TED-Ed; and TEDBooks, short e-books on powerful ideas. TED has established the annual TED Prize, where exceptional individuals with a wish to change the world get help translating their wishes into action; TEDx, which supports individuals or groups in hosting local, self-organized TED-style events around the world; and the TED Fellows program, helping world-changing innovators from around the globe to amplify the impact of their remarkable projects and activities.

As the world races towards innovating and making breakthrough discoveries in the field of science, technology, commerce and the arts, Institute of Chemical Technology, Mumbai also finds it important to expose its students to the ever-changing world around them. With this TEDxICTMumbai endeavor, ICT plans to inculcate the spirit of sharing ideas, discovering new ways of looking at the way things happen, and promoting the path of innovation among the students. The world is a global village and ICT intends on making sure that its students are citizen of this new world.

THE TEDXICTMUMBAI TEAM INCLUDES:

Soham D'Souza : Licensee and Curator

Nidhi Pant : Co-organiser

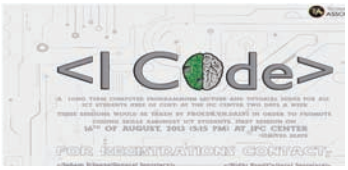
Abhishek Hule : Co-organiser

Kony Chatterjee : Public Relations and Marketing Head

Ameya Karapurkar : Logistics and Resources Head

II) LAUNCHING "ICODE"

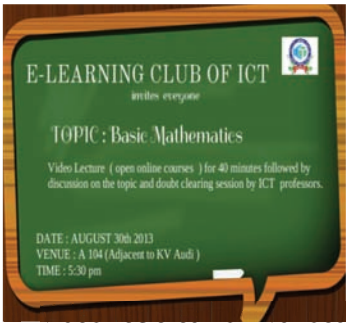
- A long term computer coding lecture series for all students at ICT(both UG and PG)
- Students shall be taught Python Language and other mathematical and engineering softwares.
- Course instructor: Prof. V.H.Dalvi



III) "ON YOUR MARKS" -A SEMINAR TO FAMILIARISE STUDENTS ABOUT THEIR GPA CALCULATIONS

A unique seminar organised by the student council to familiarise students about their Semester Grade Point Average(SGPA) and Cummulative Grade Point Average(CGPA) calculations.

IV) LAUNCHING THE "E LEARNING CELL" OF ICT:



reputed open online courses would be shown in the

reading room to students and these sessions would be enhanced by discussions by the Professors.

- The presence of a professor helped students to clarify their doubts and this provided for additional knowledge being instilled in the students.

V) CONDUCTING REMEDIAL LECTURES :

- The student council organised remedial lectures for first year students who were weak in particular subjects and who had failed their semester examinations.
- Emotional support was imparted to the students who did not clear their exams.
- Senior students ssisted the council by helping these students with their doubts and difficulties.

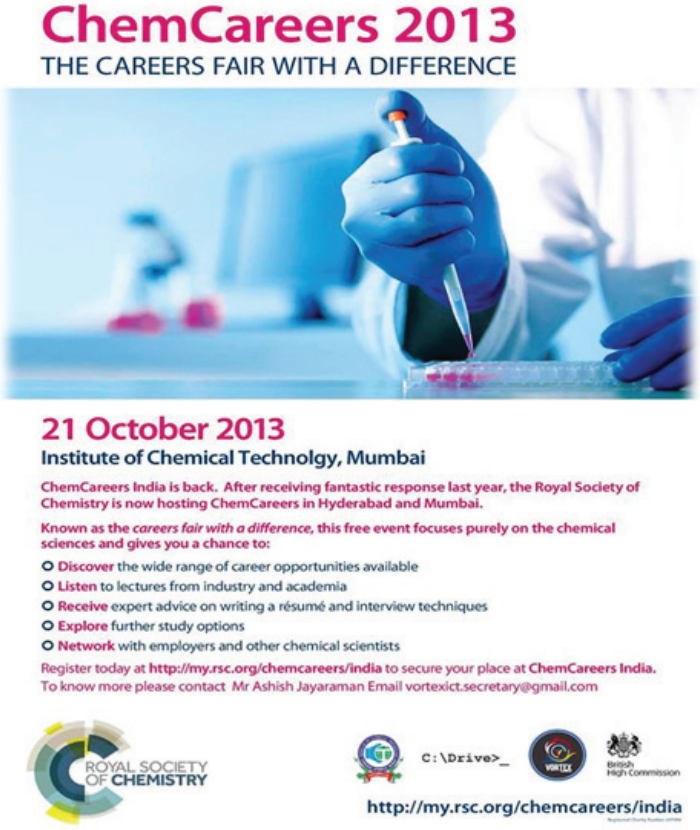
VI) CONDUCTED A VOTER REGISTRATION DRIVE

IN CAMPUS:

- As the 2014 Lok Sabha Elections were coming near, it was our duty to encourage students and teachers to vote.
- We tied up with "Volunteer for a Better India(VBI)"-an initiative by the Art of Living foundation.
- Awareness drives were conducted by VBI for the students and teachers on campus
- A lot of first time voters got their names registered
- We also made faculty members and their family members register for the elections.
- "Know your Civic Quotient" workshop was conducted by VBI for the students at ICT

VII) ORGANISED "CHEMCAREERS 2013- BY THE ROYAL SOCIETY OF CHEMISTRY":

- ChemCareers 2013 was a careers fair organised by the Royal Society of Chemistry at ICT.
- A wide variety of speakers from chemical engineering, technology,pure chemistry and pharmacy came to speak to the students and guide them about future prospects in the chemical industry.
- It helped students explore new options for further studies.
- Lectures from the industry as well as academia were organised.
- It helped students network with the people from the industry.



- Special seminar was organised regarding CV-SOP Making and the importance of networking through social media tools.

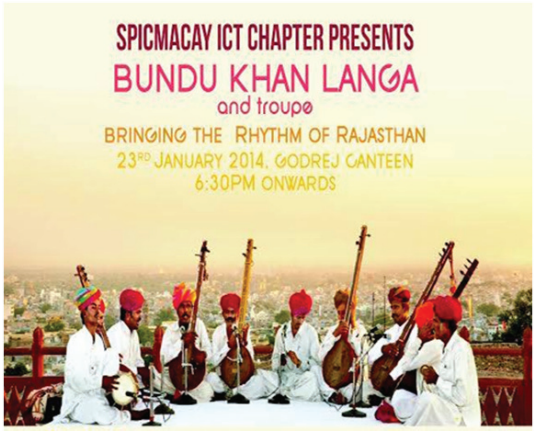
VIII) MADE THE BRANCH REPRESENTATIVES TAKE THE UNICEF GIRL CHILD PLEDGE:

- The Branch Representatives took the UNICEF-

Girl Child Pledge on behalf of their classmates to protect and respect the women in our society.

- This was an initiative done by the Art of Living and UNICEF

IX) ORGANISED THE "BUNDU KHAN LANGA AND TROUPE" ENSEMBLE (IN ASSOCIATION WITH SPICMACAY):



X) ORGANISED A "KITE FLYING FESTIVAL" ALONG WITH SPORTSAGA AND MANZAR AS A PART OF FUNTECH 2014:

XI) ORGANISED THE FAREWELL GATHERING OF THE BATCH OF 2014

The Farewell for the final year students was organised by the student council.

FESTIVALS:

I) VORTEX -THE INTER COLLEGE TECHNICAL FESTIVAL:

This year the three premier technical festivals of ICT, namely Exergy, YICC (Young Innovators' choice Competition) and YRC (Young Researchers' Conference) have been synergistically blended. Coalescing the exuberance of Exergy, the ideation of YICC, and the technical acumen of YRC, into arguably India's biggest technical festival in the chemical field, "VORTEX: The ChemFest, 2013".

Exergy extruded fun. The technical as well as non-technical events associated with it gave under graduates a picture of the ubiquitous possibilities in the chemical field.

Participation in Exergy intrigued the uninitiated in the form of Masterclass and Ignite-ICT, and enabled the seasoned to showcase their aptitude in the events like IDP, Simplant, Management Maestro and numerous other event. The fun-loving kind promulgated their love for science in the events like

Dexter's Lab, Acta-Chemica etc.

YICC was a revered as an arena for a clash of the most seasoned student minds of the chemical domain, from all over India. The event primarily aimed at solving Industry Defined Problems in the disciplines of chemical engineering, technology, sciences, pharmacy, biotechnology, and bio-processing. YRC provided an elucidating platform for the post graduate students, to showcase their technical prowess in form of technical research papers and posters pertaining to the chemical realm.

"VORTEX: The ChemFest" amalgamates these three attributes in order to expose the true potential of the emerging erudite and entrepreneurial generation of the Chemical field. VORTEX: the ChemFest, in its first edition, included events of Exergy, YICC and YRC. The participants, third and final year undergraduates and masters students from all over India, were given a period of 1 week to come with solutions for the Industry Defined Problem given to them. The particiapnts have to come up with a npovel, innovative and technically sound solution to their respective IDP. The participants are provided with the inexhaustible library, computer and internet facilities of the Institute for a period of 2 days before the presentations of the solutions.

VORTEX: The ChemFest also included General, Prodigy and Pharma events. Prodigy events such as Papyrus, Manifesto, Recalibrate and CE Quiz test the Chemical Engineering intellect of the participants. Pharma Events such as Q.S., PharmWiz and PharmaCartel test the skills of the participants in formulation, chemistry and business. General Events such as The Amazing Race, CSI, The Phineas and Ferb's Backyard and the Entrepreneur's Blueprint i is for the participants to let their socks down intellectually and have a little fun. These events based on creativity and street-smartness are a great success with all participants alike.

The 1st VORTEX: The ChemFest had 12 Industry Defined Problems given by 6 industries.

- Hetero Drugs was our Title Sponsor.
- The Industries that provided us with the technical challenges this year are:
- United Phosphorus Limited
- Dow Chemical International Private Limited
- Omega Squarematic
- StarDex – Starch Adhesives and Modified Starches
- DBT-ICT Centre for Energy Biosciences
- Dr. Nitin Deshpande from Hindustan Unilever

Papyrus, the paper presentation event had an Open Category for presentation of original research work. The participants are generally masters, Ph.D and final year under-graduate students who are provided a national platform to exchange ideas and explore the emerging directions.

II) MANZAR-THE INTER COLLEGE CULTURAL FESTIVAL:

DAY 1: 6TH FEBRUARY 2014

- Big Band theory - Footfall around 500
- Bulls and Bears – Participation around 300
- Antakshari
- Meri Mayboli
- The Great Bhet
- Duet Dance
- Group Dance – Footfall around 1200
- Tatoo designing
- Flag Making
- Body Zorbing (Informals)

DAY 2: 7TH FEBRUARY 2014

- Stage Play - The impeccable performances of drama troupes was also much enjoyed.
- Solo Singing - Solo singing began with some melodious tune and entertained the audiences.
- Guitar Wars
- The Great Bhet
- Debate
- Spelling Bee
- Mural Painting
- Fashion Show - Fashion Show raised the glamour quotient as the students walked the ramp just like professionals. Footfall around 2000
- Laser Tag (Informals)

DAY 3: 8TH FEBRUARY 2014

- Instrumental Confluence
- JAM
- Quiz
- Partner Painting
- Street Play - The students showcased their acting abilities highlighting social topics giving them a lyrical twist, thus giving insights into the society's problems.
- Cultural Night – Performance by Mr Harshal Pulekar . A night for parents, teachers

DAY 4 : 13TH FEBRUARY 2014

- Popular Night - Mr Arijit Singh came,sang and conquered our hearts .The audience was mesmerized. It was a night which all ICTians will remember. Footfall around 3000.

OVERVIEW OF THE FESTIVAL:

Problems Encountered –

- Inadequate Sponsorship(pulled through majorly through selling passes for the nights)
- Difficulty in Crowd control.
- Inadequate planning of some events.

them a lyrical twist, thus giving insights into the society's problems.

students. Footfall around 2000.

Social Initiative:

- AWAAZ conducted the following activities :

1) Blood Donation Drive
2) Flag Drive
3) AASHANSH a teaching session for underprivileged kids
4) Beach Cleanup Drive
5) AIDS awareness Street Play
6) Joy of Giving.

PUBLICITY:

(For the first time in the History of Manzar)

7 News Papers articles bearing the name of ICT

- Mr Arijit Singh's first performance in Mumbai was witnessed in ICT
- Informal events like Body Zorbing and Laser Tag was crowd pulling
- Well known celebrities judged the events of Manzar 2014.

- Celebrities like Mr. Shivaji Satam("ACP Pradyuman") also graced Manzar.
- A wide variety of Food Stalls from all over Mumbai were witnessed in ICT.
- Wondrous and phenomenal 'Creative Work' displayed all over ICT – the main gate, the marble hall and everywhere else included.
- The best website till date Manzar has ever seen. (www.manzarict.org)

III) SPORTSAGA - THE INTER COLLEGE SPORTS FESTIVAL:

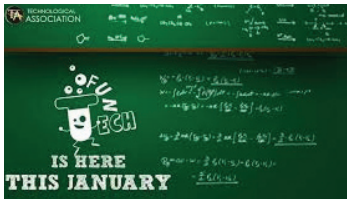
- Sportsaga is the Annual inter college sports festival of the Institute of Chemical Technology.
- The following events were organised by Sportsaga 2014:

1. Athletics
2. Badminton
3. Basketball
4. Box Cricket
5. Carrom
6. Chess and Anti-Chess
7. Football
8. Futsal
9. Hoop the Loop
10. Informals and Workshops
11. Kick Boxing
12. Lawn Tennis
13. Season Ball Cricket
14. Sports Quiz
15. Swimming
16. Table Tennis
17. Tennis Ball Cricket
18. Throwball
19. Volleyball
20. Marathon(5.5kms)- Associated with a social cause

- The Sports Club organised many sporting events throughout the year on campus to develop the sporting culture at ICT

IV) FUNTECH 2014:

Funtech is the Annual Intra ICT Cultural festival organised by the student council. This year Funtech took place at the New Auditorium. It included music, dance, sports,drama,informal events, debates,quizes,Literary Art Events, Fine Arts. Funtech 2014 received a record breaking participation from the undergraduate as well as the post graduate students.



AWARDS

Professor R.A. Rajadhyaksha Best Teacher Award (Second Year B. Chem.Engg.) 7,500/-
- Dr. Ashwin W. Patwardhan

Professor R.A. Rajadhyaksha Best Teacher Award (Final Year B. Chem.Engg.) 7,500/-
- Professor A.B. Pandit

Best Teacher Award (Second Year B. Pharm.)
- Dr. Sadhana Sathaye

Best Teacher Award (Final Year B. Pharm.)
- Professor P.R. Vavia

Best Teacher Award (Second Year B.Tech.)
- Professor S.D. Samant

Best Teacher Award (Final Year B.Tech.)
- Dr. P.D. Vaidya

Best Teacher Award (Professor D.V. Rege–AFST Mumbai Chapter–2011 Endowment) 25,000/-
- Dr. U.S. Annapure

Gunvant Karmachari Puraskar for ICT Employee (Admn.)
- Shri Vijay Anant Mulam

Gunvant Karmachari Puraskar for ICT Employee (Technical)
- Shri Bhimrao Sampat Bagul

Gunvant Karmachari Puraskar for ICT Employee (Class IV) 2,000/-
- Shri Julal Popat Gavane

Professor M.M. Sharma Best Library Employee in UDCT 2,000/-
- Ms. Priti Pandurang Sawant

Professor M.M. Sharma Best Gardener Employee 2,000/-
- Shri Manohar Tukaram Gurav

Best Employee in Vice Chancellor's Office 2,000/-
- Shri Yogesh Vishram Tetgure

Professor N.R. Kamath Book Author's Award 25,000/-
- Dr. Jyoti K. Kumar & Professor A.B. Pandit
- Professor Vandana B. Patravale, Dr. Prajakta Dandekar & Dr. Ratnesh Jain } Shared

Mrs. Padma Kelkar Endowment Award From Chemical Engineering Department 1,00,000/-
- Dr. Sujit Jogwar

ICT Golden Jubilee Innovative Ph.D. Thesis Award 1,000/-
- Mr. Sagar P. Pathare Ph.D. (Tech.)

Dr. K. H. Gharda Best Thesis Award (Cheque by Dr. Gharda) 1,000/-
- Mr. Prasad V. Vernekar Ph.D. (Tech.)

Ambuja Cement Best Ph.D. (Tech.) Thesis Award 10,000/-
- Mr. Kinshuk Dasgupta Ph.D. (Tech.)

Ambuja Cement Best Ph.D. (Sci.) Thesis Award — 10,000/-

- Mr. Akhilesh Yadav
- Mr. Kishor Dhake

} Shared

Professor S.B. Chandalia Best Research student Award for Chem. Engg. — 5,000/-

- Mr. Ajay Sharma — Ph.D. (Tech.)
- Mr. Chandrakanth Gadipelly — Ph.D. (Sci)

Ambuja Cement Best Master's Thesis Award in Chemical Engg. /Tech. — 5,000/-

- Mr. Dinesh Bapurao Balgude — M. Tech (Polymers)

O.P. Narula Best M. Chem. Engg. Thesis Award — 2,500/-

- Mr. Amogha Vijayawhaja — M. Chem. Eng.

Bombay Technologist Best Post Graduate Student Award — 1,000/-

- Ms. Swati S. Vyas
- Ms. Swati B. Jadhav

Articles published by Bombay Technologist

- Tarun Kataria — 1000/-
- Malhar Khakharia and Vidhi Khanna
- Tanmay Jain and Karan Bhangaonkar

} Shared — 1250/-

Bombay Technologist Creativity Awards — 750/-

- Rashmi Garg
- Sanket Sabnis

Golden Jubilee Best ICT Student Award — 1,000/-

- Ms. Tanaya Ravindra Vaidya
- Ms. Saumya Misra

} Shared

ICT Alumni Association Prize for Best Student from penultimate year (Cheques by UAA Prize)

- Mr. Parth Nitin Vaidya & Mr. Omkar Gupte — 2001/-
- Ms. Surabhi Madhukar Talele — 1001/-

Shri Ashvin Desai Prize for Best All-rounder hostelite — 2,500/-

- Mr. Parikshit Sanjay Sarda

Professor R.A. Rajadhyakshya Innovative Project Award for S.Y. Chem. Engg. — 5,000/-

- Mr. Yash Merchant

Dr. Bal G. Joshi Endowment for recognition of Innovative thinking creativity and performance — 12,000/-

- Mr. Makarand Khanawale
- Mr. Abhinav Temani and Mr. Rupesh Vishwakarma

} Shared

CMP Endowment Best Outgoing student M.Sc (Chemistry) — 5,000/-

- Ms. Pranjali Naik

Late Dr. (Mrs.) Mahalaxmi Bhagwat Prize for F.Y.B. Chem. Engg. (Sem. II) Students Highest Marks in 'Engineering Applications of Digital Computers' 1,000/-

- Mr. Avlani Manav Tushar
- Mr. Banerjee Moutushi Kalyan
- Mr. Khanna Vikram Naval
- Mr. Ranga Rohit Venkata Chalam Seemakurthi

} Shared 46/50

Professor S.B. Pandya Prize for Highest Marks in Home Paper, B. Chem. Engg. 500/-

- Mr. Kharbanda Pavneet Kaur
- Mr. Sabnis Sanket Ulhas

} Shared 134/150

Ambuja Cement Best Home Paper Award 2,500/-

- Mr. Kharbanda Pavneet Kaur
- Mr. Sabnis Sanket Ulhas

} Shared 134/150

Ambuja Cement Award for 1st ranker in each Semester of all Four Years of B.Chem. Engg. 8,000/-

• Mr. Khanna Vikram Naval	F.Y.B.Chem. (Sem I)	9.92
• Ms. Naik Ankita Vinod	F.Y.B.Chem. (Sem II)	9.73
• Mr. Jayaraman Ashish Lalitha	S.Y. B. Chem. (Sem I)	9.80
• Mr. Jayaraman Ashish Lalitha	S.Y. B. Chem. (Sem II)	9.77
• Mr. Chemburkar Ashwin Madhav	T.Y. B. Chem. (Sem I)	9.40
• Mr. Chemburkar Ashwin Madhav	T.Y. B. Chem. (Sem II)	9.39
• Mr. Tandon Aman Ramesh	B.Chem. Eng. (Sem I)	9.66
• Mr. Tandon Aman Ramesh	B. Chem. Eng. (Sem II)	9.66

Mrs. Asha Khemani Memorial Award 1st rank holder in each year (Textile) 4,000/-

• Ms. Sakharkar Mrunal Kamlesh	F.Y. B.Tech Sem II
• Ms. Nawage Sneha Jayprakash	S.Y. B. Tech Sem IV
• Mr. Gupta Shashwat Vinodkumar	T. Y. B. Tech Sem VI
• Ms. Vyawahare Radhika Dinesh	B. Tech Sem VII

Mrs. Asha Khemani Memorial Best Student Award from B.Tech. and M.Tech.(Textile)

• Ms. Geetal Mahajan A.	Second Year M.Tech	1,000/-
• Mr. Gokhale Keyur Arvind	Final year B.Tech	1,000/-

Jayant Kanhere Memorial Award 2,000/-

• Ms. Mehta Aakruti Ketan	Final Yr. Dyes	8.98

Professor S. Seshadri Prize, Dyestuff Division Highest Marks S.Y., T.Y. Final Yr. B.Tech 10,000/-

• Mr. Agarkar Varad Vinayak	S.Y.B. Tech	9.42	2,000/-
• Mr. Gomes Rebecca	T.Y. B. Tech	9.24	3,000/-
• Ms. Mehta Aakruti Ketan	Final Yr. B. Tech	8.98	5,000/-

Mrs. Kamala Krishnan Award for Highest Marks in Pharmaceutical Practicals (allpracticals) 1,000/-

- Ms. Jain Anjali Vimal 75/100

T.N. Vasudevan Pharmacognosy theory and Practical combined at Final Year Award B. Pharm. Sci. (Pharmaceutial Div.) 2,000/-

- Ms. Jain Anjali Vimal 75/100

Mrs. Usha M. Joshi/S.M. Joshi Scholarship for final year B.Tech.,1st, 2nd & 3rd rank 5,000/-

- Mr. Nair Chandrasekharan 9.62
- Ms. Pusuluri Anusha Ushasri 9.41
- Ms. Joshi Bela Deepak 9.24

Chimanlal Choksi Memorial Prize, Highest marks in each year, Chem.Engg. 4,500/-

- Ms. Naik Ankita Vinod 9.73
- Mr. Ashish Jayaraman Lalith 9.77
- Mr. Chemburkar Ashwin Madhav 9.39

Chimanlal Choksi Memorial Prize, Second Highest marks in each year, Chem.Engg. 4,500/-

- Mr. Ghosh Partho Shankar 9.65
- Mr. Udyavara Sagar Balagangadhara 9.61
- Ms. Moharir Manjiri Arun 9.32

Auxichem Silver Jubilee Prize First Rank Textile Penultimate Year (Third Year) Sem VI 750/-

- Mr. Gupta Shashwat Vinod 9.29

Shree Mangalam Drugs & Organics Ltd. Endowment for securing highest marks in M. Chem. Engg. (Sem I and II) 2000/-

- Mr. Talpade Abhijit Deepak 9.86 (Sem I)
- Mr. Talpade Abhijit Deepak 9.71 (Sem II)

Praharaj Manoj Memorial Award for securing highest marks in M. Tech. (Sem I and II) (Award amount to be given after submission of Thesis) 1,500/-

Sem I

Ms. Joglekar Amruta Rajan
Mr. Bhide Rohit Nitin } Shared (10.0)

Sem II

Ms. Joglekar Amruta Rajan (9.85)

The Association of Food Scientist and Technologist (I) Bombay Chapter Award 400/-

First rank in B. Tech. (Foods)

Ms. Sahastrabudhe Shreya Narayan 9.18

Professor P.J. Dubash Memorial – AFST (I) Mumbai Chapter Award to the B.Tech. (Semester V) student from Food and Fermentation Technology Department for securing highest marks in the subject of Food Chemistry (Lab). 2,000/-

- Mr. Babar Ammar Husain 88/100

Manjula Bagmal Parikh Memorial Foundation Prize for standing first in the Final Year B. Chem. Engg. and Final Year B. Pharm. 2,000/- each

- Mr. Tandon Aman Ramesh } Final Yr. B. Chem. Engg.
- Ms. Mestry Snehal Nitin } Final Yr. B. Pharm.

Professor M.A. Nabar Prize for Students who stand first in Chemistry 300/- each

(Theory & Practicals) in F.Y. and S.Y. Chem. Engg.and F. Y. B. Tech. & S.Y.B. Tech

- Mr. Ranga Rohit Venkatachalam First Yr. Chem. Eng. (Sem I)
- Mr. Kamathkartik Durgaprasad S.Y. B. Chem. Eng.
- Mr. Syushi Rakeshkumar Kandelwal First Yr. B. Tech. (Sem II)

Dr. P. V. Krishna prize for student who stands first in Final Year B.Tech. (Oils) 10,000/-

- Ms. Hate Siddhi Santosh 9.21

Professor S.K. Pradhan Prize in Pharmacy for student standing first in B.Pharm. examination and continues further studies in Pharmacy in India. 2,000/-

- Ms. Mestry Snehal Nitin

`Contect-2014-15' Awards by Department of Chemistry (cash prizes by Department of Chemistry)

- Mr. Shrivastava Hurshwardhan Sanjay 1st Rank
- Mr. Shah Soham Emil 2nd Rank
- Mr. Bhatavadekar Omkar Mandar 3rd Rank

Dr. M.V. Nimkar Award for Top Two Rankers of all years of UG and First year of M.Tech for Textiles Department

• Ms. Sakharkar Mrunal Kamlesh	8.94	F.Y. B. Tech (First)	1000/-
• Ms. Dahale Monali Rajendra	8.39	F.Y.B. Tech(Second)	1000/-
• Ms. Nawage Sneha Jayprakash	8.61	S.Y.B. Tech (First)	1000/-
• Ms. Shruti Venkataram Parvathy	8.49	S.Y. B. Tech (Second)	1000/-
• Mr. Gupta Shashwat Vinod	9.29	T.Y.B. Tech (First)	1000/-
• Ms. Raut Poorva Bhushan	9.10	T.Y. B. Tech (Second)	1000/-
• Ms. Vyawahare Radhika Dinesh	8.73	Final .Y.B. Tech (First)]	1000/-
• Ms. Kala Aditi Suresh	8.40	Final .Y.B. Tech (Second)	1000/-
• Ms. Honade Smita Pradiprao	9.36	S.Y. M.Tech. (First)	1000/-
• Mr. Maurya Shailesh Ramdhani	9.29	S.Y. M.Tech (Second)	1000/-

Dr. B.M. Khadilkar Ex- Student and Friends Endowment Fund for First Y. B. Chem. Engg. Student securing Highest Marks in Organic Chemistry course both Theory & Practical 3000/-

- Mr. Avlani Manav Tushar 139/150

Jayvee organics and Polymers (P) Ltd. Award for Chemical Technology Management Diploma. (Can be given to who stand first in the entire course)

- Mr. Pandit Hrishikesh Shrinivas 9.19 2012
- Mr. Gupta Prashant Ashok kumar 8.92 2013

Akzo Nobel Excellence Awards for B. Tech (Surface coating Technology/Polymer Technology)

This award is only for 3 year they are Sept 12 to Sept 15. (Two student to be selected from 2nd to 7th semester)

• Mr. Nair Chandrasekharan Sethumadhavah	9.61	(CGPA) First Prize	25,000/-
• Ms. Gothe Chaitrali Makrand	8.98	(CGPA) Second Prize	15,000/-

CMP Endowment Academic performance award M.Sc. (Chemistry)

• Ms. Karbelkar Amruta Anand Anuradha	1st prize	5000/-
• Mr. Tiwari Abhishek Rajesh Kumar Shashi	2nd Prize	3000/-
• Mr. Kambli Pritam Mahadev Prajakta	3rd Prize	1000/-

One time a Special Motivational Prize for Final year B.Pharm – 2012-13

- Ms. Juee Raut 10,000/-

B. Chem. Engg. Merit Prizes (ICT Students' Fund)

First Year

• Ms. Naik Ankita Vinod	9.73	2,000/-
• Mr. Ghosh Partho	9.65	1,500/-
• Mr. Khanna Vikram Naval	9.61	1,000/-

Second Year

• Mr. Ashish Jayaram Lalitha	9.77	2,000/-
• Mr. Udyavara Sagar Balaganadhar	9.61	1,500/-
• Ms. Sampat Apoorva Mahesh	9.51	1,000/-

Third year

• Mr. Chemburkar Ashwin Madhav	9.39	2,000/-
• Ms. Moharir Manjiri Arun	9.32	1,500/-
• Ms. Sarode Apoorva Dattatraye	9.26	1,000/-

B. Tech. Merit Prizes (ICT Students' Fund)

First Year

• Ms. Khandelwal Ayushi Rakesh	9.61	2,000/-
• Ms. Kulkarni Akshata Rajesh	9.49	1,500/-
• Ms. Vijayalakshmi Natarajan	9.27	1,000/-

Second Year

• Mr. Agarkar Varad Vinayak	9.42	2,000/-
• Mr. Vaidya Parth Nitin	9.23	1,500/-
• Mr. Vishwakarma Rupesh	9.21	1,000/-

Third Year

• Ms. Misra Saumya Rajeev	9.60	2,000/-
• Mr. Joshi Anup Sanjay	9.58	1,500/-
• Ms. Sinha Nairiti Jivankumar	9.57	1,000/-

B. Pharm. Merit Prizes (ICT Students' Fund)

First Year

• Ms. Gohil Khyati Rasik	9.76	2,000/-
• Ms. Rathi Sneha Ramanujadas	9.68	1,500/-
• Ms. Patil Aishwarya Ajay	9.36	1,000/-

Second Year

• Ms. Nerurkar Urvi Narayan	9.52	2,000/-
• Ms. Kanvinde Pranjali Pradeep	9.14	1,500/-
• Ms. Shah Kashish Harshad	9.05	1,000/-

Third Year

• Mr. Gore Manish Ravikiran	9.77	2,000/-
• Ms. Mehta Shreya Sanjay	8.90	1,500/-
• Ms. Parab Nikita Vilas	8.80	1,000/-

Narotam Seksaria Foundation Certificate of Merit Final Year B.Tech Textile

• Nairti Sinha Jivankumar	50,000/-

FELLOWSHIPS

GENERAL

Professor B.D. Tilak Distinguished Lectureship

- Dr. Shin-Ichiro Fujita

Professor B.D. Tilak Visiting Fellowships (4-6No.)

- Professor Asit Baran Mandal
- Dr. A. J. Varma

Golden Jubilee Visiting Fellowships (8-12 No.)

- Dr. R. Rangaprasad
- Professor Atsushi Fukuoka
- Dr. Prashant K. Jain
- Dr.Takehiko Sasaki
- Professor Srinivasan Chandrasekaran

Dr. Balwant S. Joshi Distinguished Visiting Professorship in Chemical Engineering / Chemical Technology/ Applied Chemistry

- Professor P. "Som" Somasundaran

DEPARTMENT OF CHEMICAL ENGINEERING

Dr. G. P. Kane Visiting Professorship in Chemical Engineering

- Professor S.P. Moulik

The Dow Professor M.M. Sharma Distinguished Visiting Professorship in Chemical Engineering

- Professor Jayant Modak

Shri V.V. Mariwala Visiting Professorship in Chemical Engineering

- Prof. Ashutosh Sharma

Shri G.M. (alias Dada) Abhyankar Memorial Distinguished Fellowship in Chemical Engineering

- Professor David H. Thompson

Professor R.A. Rajadhyaksha Memorial Lecture Series

- Dr. K. R. Golwalkar

Shrimati Kusumben and Shri Mathradas Kothari Visiting Professorship in Chemical Engineering

- Dr. Uday V. Shenoy

K. J. Somaiya Visiting Professor of Chemical Engineering Endowment

- Professor Allen P. Milton

DEPARTMENT OF CHEMISTRY

Dai-Ichi Karkaria Ltd. Visiting Fellowship

- Dr. Kulamani Parida

The Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry

- Dr. Kannan S.

The (Late) Shri. G.D. Gokhale Endowment Lectureship

- Dr. Anil Sinha

Spinco Biotech-Ramnathan Lectureship

- Dr. M. L. Kubal

DEPARTMENT OF DYESTUFF TECHNOLOGY

Shri K.H. Kabbur Memorial Silver Jubilee Lectureship

- Dr. Alok Kumar Ray

Professor K. Venkatraman Lectureship

- Dr. Sandip Kumar Nayak

Pidilite Industries Ltd. Visiting Fellowship

- Dr. Rajesh Ramamurthy

DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY

Professor A. Sreenivasan Felicitation Lectureship

- Dr. TSR Murali

Marico Industries Visiting Fellowship

- Dr. Mrs. Shobha Suryaprakasa Rao

ICT- Lupin Visiting Fellowships for Bioprocess Technology

- Dr. Debashis Mitra

DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

Cipla Distinguished Fellowship in Pharmaceutical Science

- Professor Mary Allen Theresa

Themis Medicare- UICT Diamond Jubilee Distinguished Fellowship in Pharmaceutical Sciences

- Dr. Abhay Harsulkar

Professor (Mrs.) M.R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology

- Dr. Nafisa Balasinor
- Dr. Amit Misra

"Professor S.K. Pradhan Endowment" in Pharmaceuticals Science & Technology"

- Dr. Govindasamy Mugesh

"Professor V. M. Kulkarni Endowment Fund"

- Dr. M.R. Yadav

AAIPS- Dr. R. S. Baichwal Pharmaceutical Seminar

- Dr. Sundeep Dugar
- Dr. Kasim A. Mookhtiar
- Dr. Dhiren Thakker

DEPARTMENT OF PHYSICS

Dr. M.S. Patel Trust Visiting Fellowship in Polymer Physics

- Dr. Dwarkanath Dattatrya Kale

DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY

Professor G.M. Nabar Endowment Lectureship

- Mr. Mahendra Tanna

L.N. Chemicals – UICT Diamond Jubilee Visiting Fellowship

- Mr. Nagalla Mutya Prasad

Class of 1966 Visiting Fellowship

- Mr. Prabhatkumar K. Trivedi

SCHOLARSHIPS

I. GENERAL SCHOLARSHIPS

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.

Rushmi-Druman Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)

- Ms. Prajapati Foram Umesh Padmini - Second Year B.Tech. (Polymer)

Distinguished Alumini Merit-cum-Means Scholarship (One) (Value of Rs. 1,800/-)

- Mr. Dorage Ajinkya Siddhanath Rajeshree - Third Year B. Tech. (Polymer)

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)

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.

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)

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)

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.

S.L. Venkiteswaran Merit-cum-Means Scholarship (One) (Value of Rs. 4,500/-)

- Mr. Tawade Manish Yashwant Sunita - Third Year Chem. Engg.

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)

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)

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)

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)

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

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)

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

An Anonymous Alumnus Merit-cum-Means Scholarship (One) (Value of Rs. 3,500/-)

- Mr. Parit Nitin Baburao Prabhawati - Third Year B. Tech. (Polymer)

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.

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.

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.

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.

Y. T. Shah Merit-cum-Means Scholarship (One) (Value of Rs. 2,000/-)

- Ms. Sarode Apoorva Dattatraya Nilima - Final Year Chem. Engg.

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.

Head Master Muthuswami Merit-cum-Means Scholarship (One) (Value of Rs. 850/-)

- Ms.Tadge Snehal Manohar Bharati - Third Year Chem. Engg.

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.

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.

Andanallur Srinivasa Venkatesan & Ranganayaki Scholarship (One) (Rs.3,000/-)

- Mr. Kulkarni Onkar Satish Swati - Third Year Chem. Engg.

Daisy Navaroze Baria Scholarship (One)(Rs. 2,500/-)

- Mr. Bhujbal Sahil Vinayak Varsha - Third Year Chem. Engg.

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.
- Mr. Suchit Dange - Final 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.

Jitendra Mehta Scholarship (Two) of (Rs. 20,000) (Rs. 10,000/- each)

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.

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

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) (Total Bal. Rs.4, 50, 000/-) (No. of Student one) (Value of Rs. 4500/-)

Candidate Not available

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

B. Chem. Engg Class of 1962

Candidate Not available

V. DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY

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)

G.M. Alias Abhyankar Merit-cum-Means Scholarship (One) (Rs.4,000/-)

- Ms. Bannagare Aishwarya Dilip Indira - Second Year B. Tech. (Oils)

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

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)

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)

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

"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

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)

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)

Synpol Memorial Scholarship (One) (Rs. 3,500/-)

- Mr. Mulge Saket Satish Sangeeta - First Year B.Tech. (Surface Coatings)

"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

Colour Chem.Ltd. Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)

- Mr. Kanhere Sagar Vishnudas Shobha - Second Year B. Tech. (Dyes)

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)

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

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.

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

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.

Mr. Rajen Mariwala Merit-Cum-Means Scholarship (One) (Value of Rs. 10,000/-)

- Mr. Narote Vishal Mahesh - First Year Chem. Engg.

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.

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)

"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

Narotam Sekhsaria Foundation Scholarships

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)

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)

Vishwanath Dore Scholarship (C/o Asara Scholarship) (One) (Value decided by trust)

- Ms. Arora Sonam Mohanlal Jyoti - Second Year Chem. Engg.

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. Bhatavkar Omkar Mandar - First Year Chem. Engg.

ISCMA Merit Cum Means Scholarship

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)

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 - Second Year B. Tech. (Oils)
- Mr. Ahire Akhil Arun Anita - Third Year B. Tech. (Oils)
- Ms. Parate Ashwini Hemraj Vimal - Final Year B. Tech. (Oils)

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 - Second Year B. Tech. (Textile)
- Mr. Thorat Shailesh Laxman Jijabai - Final Year B. Tech. (Textile)

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)

Ratan Tata Trust Scholarship for meritorious students from II, III, & final year B.Tech. and B.Chem. Engg. (Value decided by trust)

Name of the Student	Year of the Study	Discipline/Specialization	Amount (Rs.)
• Ms. Ankita V. Naik	First	B. Chem. Engg.	15,000/-
• Mr. Vikram N. Khanna	First	B. Chem. Engg.	15,000/-
• Mr. Ranga R. Seemakurthi	First	B. Chem. Engg.	15,000/-
• Ms. Ankita J. Mukhtyar	First	B. Chem. Engg.	15,000/-
• Mr. Pushkar Ghanekar	First	B. Chem. Engg.	15,000/-
• Mr. Ashish Jayaraman	Second	B. Chem. Engg.	15,000/-
• Mr. Apoorva Sampat	Second	B. Chem. Engg.	15,000/-
• Mr. Sagar Udyavara	Second	B. Chem. Engg.	15,000/-
• Mr. Swapnil Deshmukh	Second	B. Chem. Engg.	10,500/-
• Mr. Kartik Kamat	Second	B. Chem. Engg.	10,500/-
• Mr. Ashwin Chemburkar	Third	B. Chem. Engg.	15,000/-
• Ms. Manjiri Moharir	Third	B. Chem. Engg.	15,000/-
• Mr. Haribal Vasudev	Third	B. Chem. Engg.	10,500/-
• Ms. Navyatha Shankar	Third	B. Chem. Engg.	10,500/-
• Mr. Sudarshan G. Kala	Third	B. Chem. Engg.	10,500/-
• Ms. Ayushi Khandelwal	First	B. Tech.(Coating)	10,500/-
• Ms. Akshata Kulkarni	First	B. Tech.(Polymer)	10,500/-
• Mr. Natarajan Vijayalakshmi	First	B. Tech.(Polymer)	10,500/-
• Ms. Aishwarya Badiger	First	B. Tech.(Foods)	10,500/-
• Mr. Anvay A. Patil	First	B. Tech.(Polymer)	10,500/-
• Ms. Arpita A. Nandy	Second	B. Tech.(Oils)	15,000/-
• Mr. Parth N. Vaidya	Second	B. Tech.(Oils)	15,000/-
• Mr. Lisan B. Shaikh	Second	B. Tech.(Dyes)	15,000/-
• Mr. Varad V. Agarkar	Second	B. Tech.(Dyes)	15,000/-
• Mr. Omkar P. Hundekari	Second	B. Tech.(Coating)	10,500/-
• Ms. Saumya R. Misra	Third	B. Tech. (Polymer)	15,000/-
• Ms. Nairiti J. Sinha	Third	B. Tech. (Polymer)	15,000/-
• Ms. Pooja V. Sharma	Third	B. Tech. (Foods)	15,000/-
• Ms. Neha D. Arolkar	Third	B. Tech. (Oils)	15,000/-
• Ms. Monali N. Basutkar	Third	B. Tech. (Polymer)	15,000/-

Ratan Tata Trust Scholarship for meritorious students from Department of Pharmaceutical Sciences and Technology (Value decided by trust)

Name of the Student	Year of the Study	Discipline /Specialization	Amount (Rs.)
• Mr. Manish R. Gore	Final	Pharmacy	15,000/-
• Ms. Shreya S. Mehta	Final	Pharmacy	15,000/-
• Ms. Nikita V. Parab	Final	Pharmacy	15,000/-
• Ms. Ketaki M. Deshpande	Final	Pharmacy	15,000/-
• Ms. Vidhi D. Khanna	Final	Pharmacy	15,000/-
• Ms. Prajakta A. Pednekar	Final	Pharmacy	15,000/-
• Ms. Nikita A. Palekar	Final	Pharmacy	15,000/-
• Ms. Gauri G. Karve	Final	Pharmacy	10,500/-
• Ms. Nivedita U. Hegdekar	Final	Pharmacy	10,500/-
• Mr. Shiban N. Fangari	Final	Pharmacy	6,000/-
• Ms. Urvi N. Nerurkar	Third	Pharmacy	15,000/-
• Ms. Pranjali P. Kanvinde	Third	Pharmacy	15,000/-
• Mr. Kashish H. Shah	Third	Pharmacy	15,000/-
• Mr. Paritosh K. Chandwade	Third	Pharmacy	15,000/-
• Ms. Nehal M. Shah	Third	Pharmacy	15,000/-
• Ms. Madhura D. Rege	Third	Pharmacy	15,000/-
• Ms. Aarti D. Pandit	Third	Pharmacy	15,000/-
• Ms. Disha P. Prabhu	Third	Pharmacy	15,000/-
• Mr. Ashutosh A. Dikshit	Third	Pharmacy	15,000/-
• Mr. Swapnil S. Sheth	Third	Pharmacy	10,500/-
• Ms. Khyati R. Gohil	Second	Pharmacy	15,000/-
• Ms. Sneha R. Rathi	Second	Pharmacy	15,000/-
• Ms. Aishwarya A. Patil	Second	Pharmacy	15,000/-
• Ms. Sonalika A. Bhattacharjee	Second	Pharmacy	15,000/-
• Ms. Shruti A. Dumbre	Second	Pharmacy	15,000/-
• Ms. Maitreyi M. Oka	Second	Pharmacy	15,000/-
• Mr. Tarun N. Bhatia	Second	Pharmacy	15,000/-
• Ms. Dishita R. Pathare	Second	Pharmacy	10,500/-
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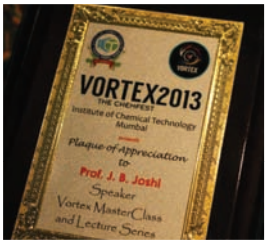
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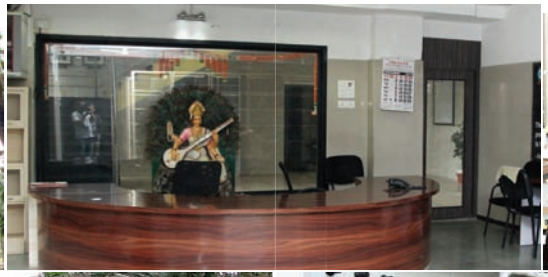



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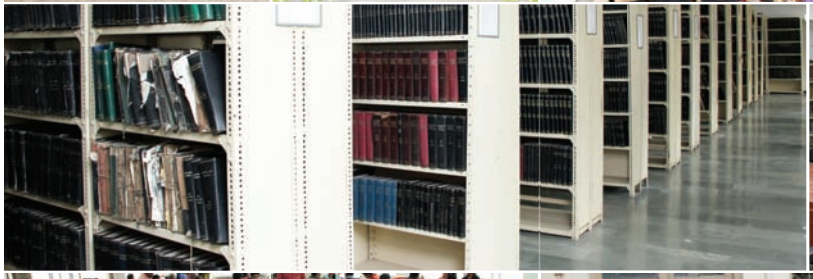




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