

SELF ASSESSMENT REPORT (SAR)

For Accreditation of Master of Dyestuff and Intermediates Technology
(Tier -1)

Submitted
To



NATIONAL BOARD OF ACCREDITATION,
New Delhi

Application No.5312-02-02-2021



INSTITUTE OF CHEMICAL TECHNOLOGY

(Deemed University under Section 3 of UGC Act 1956;
Elite Status and Centre of Excellence – Govt. of Maharashtra)

Part A: Institutional Information

1. Name and Address of the Institution

INSTITUTE OF CHEMICAL TECHNOLOGY, MUMBAI
NATHALAL PAREKH TECHNOLOGY MATUNGA MUMBAI-400019

2. Name and Address of the Affiliating University, if applicable:

3. Year of establishment of the Institution

1933

4. Type of Institution

<input type="checkbox"/> Institute of National Importance	<input type="checkbox"/> Affiliated
<input type="checkbox"/> University	<input type="checkbox"/> Autonomous
<input checked="" type="checkbox"/> Deemed University	<input type="checkbox"/> Any Other(Please Specify)

5. Ownership Status

<input type="checkbox"/> Central Government	<input type="checkbox"/> Trust
<input checked="" type="checkbox"/> State Government	<input type="checkbox"/> Society
<input type="checkbox"/> Government Aided	<input type="checkbox"/> Section 25 Company
<input type="checkbox"/> Self financing	<input type="checkbox"/> Any Other(Please Specify)

6. Details of all the programs offered by Institution

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Bachelors of Technology in Dyestuff and intermediates Technology	UG	1944	1944	16	Yes	20	Granted accreditation for 5 years for the period (specify period)	2016	2022	No	4

Sanctioned Intake for Last Five Years for the Dyestuff Technology	
Academic Year	Sanctioned Intake
2021-22	20
2020-21	20
2019-20	20
2018-19	20
2017-18	20
2016-17	20
2015-16	20
2014-15	20

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Masters in Technology in Perfumery and Flavor Technology	PG	1990	1990	5	Yes	18	Granted accreditation for 5 years for the period	2015	2020	Yes	2

Sanctioned Intake for Last Five Years for the Perfumery and Flavor Technology	
Academic Year	Sanctioned Intake
2021-22	18
2020-21	18
2019-20	18
2018-19	18
2017-18	18
2016-17	5
2015-16	5
2014-15	5

Name of Program	Program Applied	Start of	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
Masters of Technology in Dyestuff and intermediates Technology	PG	1961	1961	4	Yes	18	Granted accreditation for 5 years for the period (specify period)	2015	2020	No	2

Sanctioned Intake for Last Five Years for the Dyestuff technology	
Academic Year	Sanctioned Intake
2021-22	18
2020-21	18
2019-20	18
2018-19	4
2017-18	4
2016-17	4
2015-16	4
2014-15	4

B.Tech-Pharmaceuticals Chemistry and	B.Tech- Oils, Oleochemicals and Sufactant Technology	B.Tech- Fibres and Textile Processing Technology	B.Tech- Food Engineering and Technology	B.Tech - Dyestuff Technology	Bachelor of Chemical Engineering	Name of Program
UG	UG	UG	UG	UG	UG	Program Applied level
1943	1943	1934	1943	1944	1934	Start of year
1943	1943	1934	1943	1944	1934	Year of AICTE approval
10	16	34	16	16	75	Initial Intake
Yes	No	No	No	Yes	Yes	Intake Increase
18	16	34	16	18	30	Current Intake
Granted accreditation for 3 years for	Granted accreditation for 5 years for the period	Granted accreditation for 5 years for the	Granted accreditation for 5 years for the period	Granted accreditation for 5 years for	Granted accreditation for 5 years for the	Accreditation status
2017	2016	2016	2016	2016	2016	From
2020	2022	2022	2022	2022	2022	To
0	0	0	0	0	No	Program for consideration
4	4	4	4	4	4	Program for

M.Tech - Pharmaceuticals Chemistry and Technology	PG	1966	1966	5	Yes	18	Granted accreditation for 5 years for the period	2020	2026	0	2
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7. Programs to be considered for Accreditation vide this application

S r N o	Level	Discipline	Program	Current Year Sanctioned Intake	Current Year Admission (in Nos.)
1	Post Graduate	Engineering & Technology	Dyestuff and Intermediates Technology	18	6
2	Post Graduate	Engineering & Technology	Dyestuff and Intermediates Technology	18	8

8. Vision of institution

We shall perennially strive to be a vibrant institute with continuously evolving curricula to brighten the future of the chemical, biological, materials and energy industries of the nation, and rank amongst the very best in the world through active participation and scholarship of our faculty, students and alumni.

We shall be creators of sprouting knowledge and design cutting-edge technologies that will have the greatest impact on society and benefit mankind at large.

9. Mission of the Institution

We shall generate and sustain an atmosphere conducive to germinating new knowledge at every available opportunity. The education we shall impart will enable our students to devise new solutions to meet the needs of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources.

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

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

10.Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	Prof. Aniruddha Pandit
Designation	VICE CHANCELLOR
Mobile No.	9820408037
Email ID	vc@ictmumbai.edu.in

NBA Coordinator, If Designated

Name	Dr. Ashwin Mohan
Designation	Assistant Professor
Mobile No.	+91 9869506632
Email ID	as.mohan[@]ictmumbai.edu.in

Part B: Departmental Information

1. State the Vision and Mission of the Department

Mission

Empowering the knowledge of perfumery, flavours and cosmetics through learning a cutting-edge technology for the benefit of mankind.

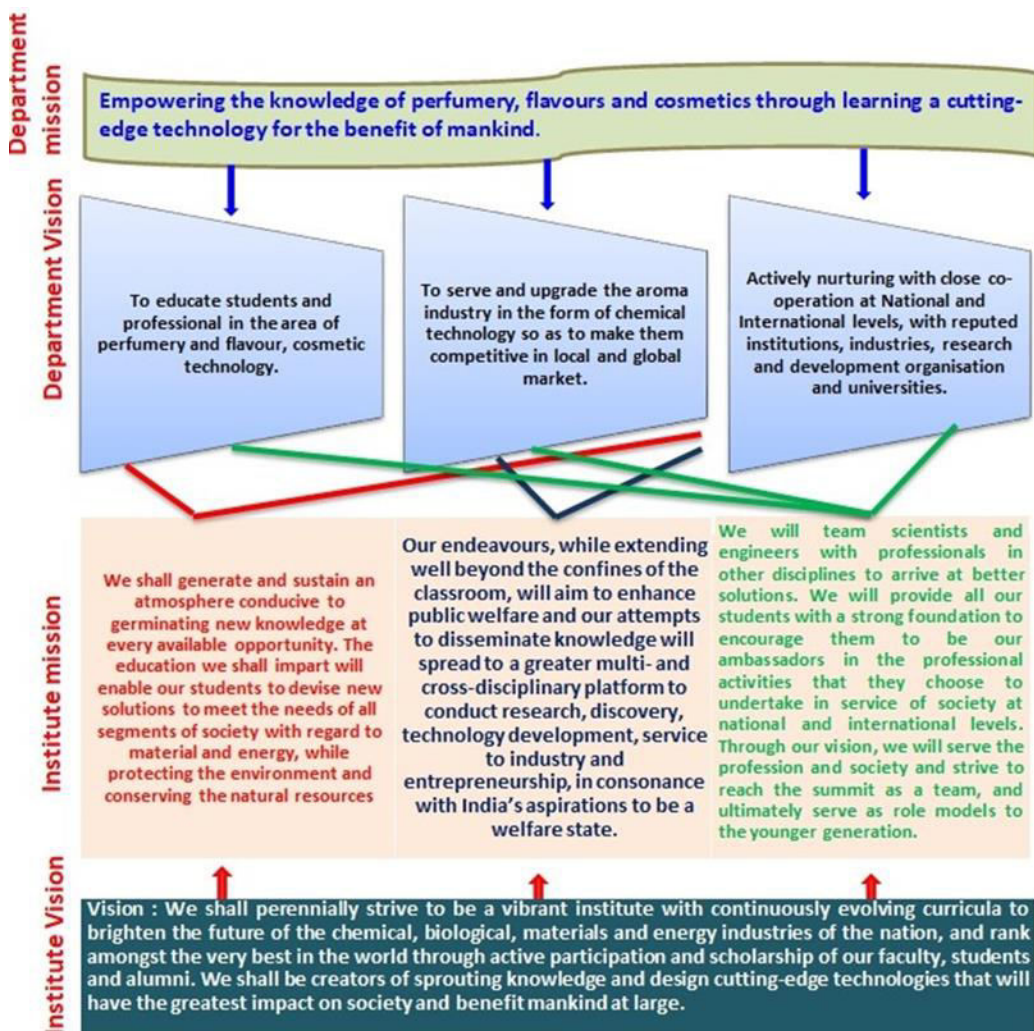
Vision

- To educate students and professional in the area of perfumery and flavour, cosmetic technology.
- To serve and upgrade the aroma industry in the form of chemical technology so as to make them competitive in local and global market.
- Actively nurturing with close co-operation at National and International levels, with reputed institutions, industries, research and development organization and universities.

2. Justification of consistency of the Department Vision and Mission with the Institute Vision and Mission

The departmental guiding principles for students in M. Tech Perfumery and Flavour Technology are as follows,

- To empower our students with ethics and integrity about strong fundamentals, knowledge and skills
- Practices through industrial in-plant training and industrial visits so that they are able to serve the perfumery and flavour industry.
- The program is committed to nurture the spirit of innovation and creativity among students, faculty and staff.



The mission of the M. Tech Dyestuff and Intermediate Technology program is consistent and perfectly aligned to the institutional mission.

The institutional mission as well as the program mission is to strive to encourage holistic development of the students in terms of knowledge of cutting-edge technologies. Inculcate abilities and attitudes so that the students are able to serve the society, beneficial to the nation and the world. The department constantly strives towards the growth and development for graduates, faculty and staff. The three missions of the department are well connected to specific components of the institute mission shown below

3. Details of all UG & PG Programs offered by the department

Sr. No.	PG Program Name	Corresponding UG Program/Department Name	Current Year Sanctioned Intake	Current year Admission (in Nos.)
1	M.Tech Dyestuff and Intermediates Technology	B.Tech Dyestuff Technology	18	8
2	M.Tech Perfumery and Flavor Technology	Department of Speciality Chemicals Technology	18	17

4. State the Program Educational Objectives (PEOs) for the PG program(s) under consideration for accreditation

PEO No.	Program Educational Objectives Statements
PEO1	To produce efficient organic chemical technology graduates with strong fundamentals in intermediate and dyestuff chemistry and specialty chemicals
PEO2	To make student graduates capable to assess and relate engineering issues to environmental and broader societal contexts and practice it with integrity and ethics
PEO3	To inculcate leadership qualities in graduates with strong communication skills, mould them as good team players and managers so that they have the competence to function effectively in multi-disciplinary orientation teams.

PART B: Criteria Summary

Criteria No.	Criteria	Total Marks	Institute Marks
1	PROGRAM CURRICULUM AND TEACHING –LEARNING PROCESSES	125	125.00
2	PROGRAM OUTCOME	75	75.00
3	STUDENTS' PERFORMANCE	75	11.67
4	FACULTY CONTRIBUTIONS	75	75.00
5	LABORATORIES AND RESEARCH FACILITIES	75	75.00
6	CONTINUOUS IMPROVEMENT	75	75.00
	Total	500	437

1 PROGRAM CURRICULUM AND TEACHING –LEARNING PROCESSES (125)

Institute Marks (125)

1.1 Program Curriculum (35)

Institute Marks (35)

1.1.1 State the process for designing the program curriculum (10)

Institute Marks (10)

Guiding principles and aims for M. Tech in Dyestuff Technology are

- To enable our students with strong fundamentals, knowledge & skills in the fields of Dyestuff Technology.
- Practices through vigorous training and courses content so that they are able to serve the industry in general and society at large.
- To acquire a strong background of processes synthesis and their development.
- The program is committed to Foster spirit of innovation and carefully Among, Students, and staff

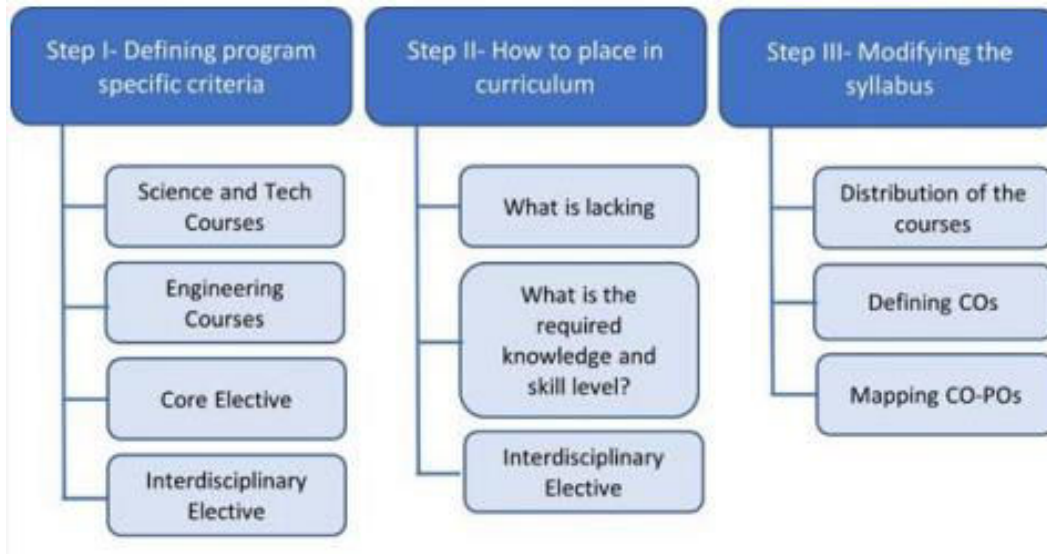
The curriculum for M. Tech. in Dyestuff Technology is developed by taking into consideration:

- I. The needs of the learner while they are in master's degree in this field.
- II. The content in terms of M.Tech. in dyestuff and intermediate Technology.
- III. Instructional methodology for learning master level courses.

The criteria for defining curriculum are:

- 1) Should satisfy Program Specific Criteria
- 2) Basic knowledge in chemistry reaction mechanism and process
- 3) Basic and core knowledge in Dyestuff and Intermediate Technology domain areas
- 4) In depth and broad knowledge in Science and Technological in Dyestuff and intermediate Technology and Pigments Basic Reactions
- 5) Balance between theory, practical and tutorial
- 6) Total credits, distribution of credit for different components and domains
- 7) Literature study, seminar, internship, projects and presentations
- 8) Should meet the requirements of Program Outcomes (POs)

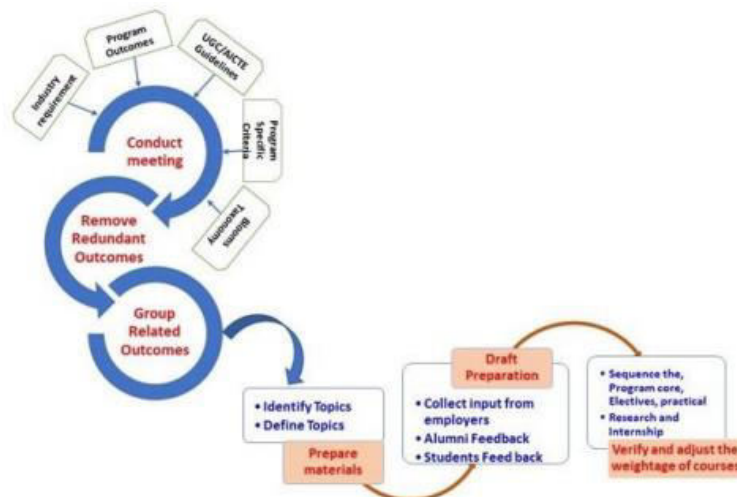
The steps for developing curriculum are given below:



Programme Curriculum is revised on the basis of:

- Changing needs related to developments in the field.
- Improvements based on feedback from students, alumni.
- Feedback from industry based on their requirements.
- Suggestions from faculty members, experts from Industry and Experts from other institutes/universities

Decision Making loop and defining the Curriculum



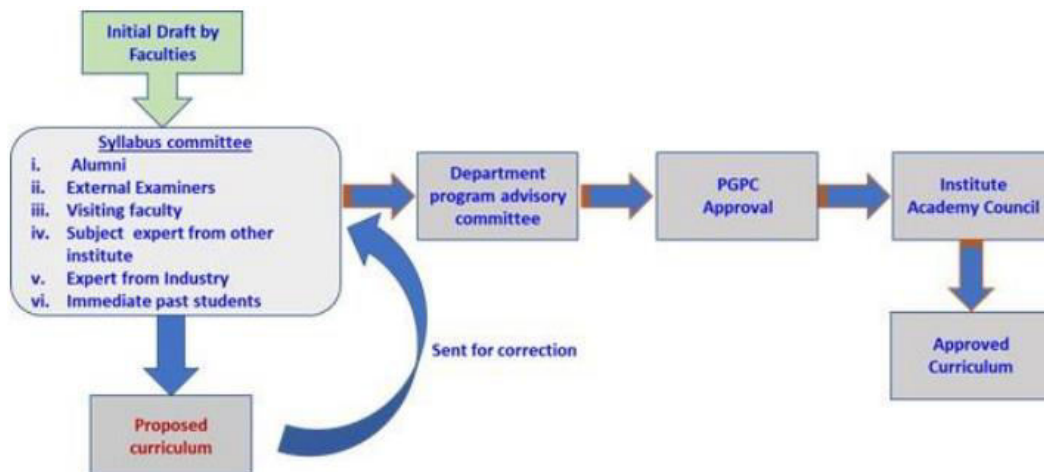
The Departmental administrative committee comprised of all faculties from department include HOD, formulated the initial draft for the curriculum. Then the initial draft was sent to

- 1) Alumni
- 2) External Examiners
- 3) Visiting Faculty
- 4) Subject experts from eminent institutes
- 5) Industry experts
- 6) Immediate past students for further suggestion. Based on the suggestion received, the academic program/syllabus committee discussed, critically analyzed the suggestion and proposed the curriculum for the program. Then the faculty of the department prepared the final draft based on the proposal and circulated among the syllabus committee members for modifications/corrections. After receiving consensus from all, the drafted curriculum was finally accepted for implementation.

Following points were considered for making curriculum

- Based on the present needs of industry, the curriculum has been designed and courses are delivered to meet the vision of the department as well as vision of Institute
- Core subjects are designed based on Synthesis, unit process involved, Classification of Dyes, and their Synthesis.
- Practical course is Synthesis of Dyes and their Application
- Various elective courses include cosmetic Industrial Chemistry analytical chemistry, Synthesis and their application.
- Courses on industrial Management, marketing and customer behaviour are included.
- In addition to the above, course includes a Seminar Presentation and Research project which enrich the student with skills of independent learning, thinking and innovation.
- They also build up self-confidence, to even become entrepreneurs. The in-plant training in the third semester gives them a direct exposure to the industry adding immense value to learning.
- Finally researches on the thesis topic provide students opportunity to gain hand on training on design, synthesis, Process Development and application on Dyeing and technology involved in the subject.

The schematic representation of the whole process is as shown below



1.1.2 Structure of the Curriculum (5)

Institute Marks (5)

ID	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Total hours	Theory credit	Practical credit	Total credit
1	DYT101	Advances in Chemistry and Technology of Colorants	2	1	0	3	3	0	3
2	DYT102	Specialty chemicals Chemistry and Technology	2	1	0	3	3	0	3

3	DYT103	Unit process and operations in specialty chemicals industry	2	1	0	3	3	0	3
4	DYT106	Intellectual Property Rights	2	1	0	3	3	0	3
5	DYT101	Research Methodologies	2	1	0	3	3	0	3
6	DYP004	Seminar and Critical Review	0	0	6	6	0	3	3
7	DYP001	Advanced Unit Process and Formulations Laboratory	0	0	6	6	0	3	3
8	DYP003	Research I	0	0	12	12	0	6	6

9	DYT106	Crop Protection Chemicals	2	1	0	3	3	0	3
10	DYT109	Organic Materials for Electronics	2	1	0	3	3	0	3
11	DYT108	Formulations in fine chemicals industry	2	1	0	3	3	0	3
12	DYT110	Biosensors	2	1	0	3	3	0	3
13	DYT017	Mechanisms of Organic Reaction	2	1	0	3	3	0	3
14	DYP002	Chemical Business Design	0	0	6	6	0	3	3
15	DYP005	Research II	0	0	18	18	0	9	9
16	DYP006	In plant training	0	0	40	40	0	30	30

17	DYP007	Research, Thesis and Opensefense	0	0	40	40	0	30	30
		Total	20	10	128	158	30	84	114

1.1.3 State the components of the curriculum (10)

Institute Marks (10)

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credit
Program Core	15.8	270	18
Program Electives	5.3	90	6
Open Electives	5.3	90	6
Mini Project(s)	0	0	0
Internships/Seminars	28.9	690	33
Major Project(s)	39.5	1050	45
Any other (Please specify)	5.3 (Practical)	180	6
Total number of Credits			114

1.1.4 Overall quality and level of program curriculum (10)

Institute Marks (10)

Content	ICT Mumbai	VEER NARMAD SOUTH GUJRAT UNIVERSITY, SURAT	University of LEEDS (UK)
Duration	2 years	2year	1 year
Grade	114	-	170
Core subjects	<p>Advances in Chemistry and Technology of Colorants</p> <p>Specialty chemicals Chemistry and Technology</p> <p>Unit process and operations in specialty chemicals industry</p> <p>Crop Protection Chemicals</p> <p>Organic Materials for Electronics</p> <p>Formulations in fine chemicals industry (15.78%)</p>	<p>Industrial organic pigments</p> <p>Colour science</p> <p>Colour and chemical constituents</p>	<p>Advanced Colour Science</p> <p>Synthesis and Application of Polymers</p> <p>Colour Application Technology (35.29%)</p>
Elective	<p>Biosensors</p> <p>Mechanisms of Organic Reaction</p> <p>Intellectual Property Rights</p> <p>Research Methodologies (10.52%)</p>	---	<p>Advanced Topics in Chemistry</p> <p>Physical Aspects of Food</p> <p>Colloid and Dairy Science (17.64%)</p>

Marketing and business management	Marketing Management and Customer Behaviour (2.69%)	---	----
Seminar and Critical Review	Literature Survey related to the given topic, Analyze the reported outcomes and classify the work under key categories. Write a technically correct report (2.63%)	----	----
Internship	Compulsory internship in the industry for about 4 - 6 months (26.31%)	-----	----
Research	Includes Research 1, 2 and 3 components. Research 1 includes review the existing literature for research topic and write a report. Research 2 includes develop detailed plan of experiments/simulations and present the work. Write the report. Research 3 - Systematically perform experiments/modelling, analysis and application. Experimental Study, Thesis and Open Defence. (39.47%)		Extended laboratory project for Chemistry-Based MSc courses (28.23%)

1.2 Teaching-Learning Processes (90)

Institute Marks (90)

1.2.1 Quality of end semester examination, internal semester question papers, assignments and evaluation (20)

Institute Marks (20)

	Continuous mode	Mid Semester Exam	End Semester Exam	Components of continuous mode
Theory	20%	30%	50%	Quizzes, class tests (open or closed book), home assignments, group assignments, <i>viva-voce</i> assignments, discussions
Practical	50%	-	50%	Attendance, <i>viva - voce</i> , journal, assignments, project, experiments, tests
Seminar/ Research work			100%	Continuous evaluation not applicable, End semester evaluation will be based on written report evaluation and presentation in front of the external examiner within the Department

In-Semester Evaluation (Continuous Assessment Test and Mid Semester Examination)

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

End-Semester examination:

- 1) The semester end examination will cover the full syllabus of the course and will be conducted as per the Institutional time table at the end of each semester.
- 2) For end –semester examinations in theory papers, duration of examination will be 1 hour for 3 credit courses and 2 hours for 4 credit courses.
- 3) For the end semester evaluation of seminar/research work, student will be expected to submit a written report and also make a presentation. The evaluation will be based on the quality of the written report and presentation.

1.2.2 Quality of student projects (30)

Institute Marks (30)

All the student projects are based on sustainability, development of new research areas and process development in the areas of perfumery and flavours. A student project is evaluated from Research Project I, II and III.

The Research project I is concerned with detailed literature review of the assigned research area in consultation with the guide, developing an experimental/simulation protocol and initiate the actual research work. At this stage, a student analyze the existing literature for the assigned research topic and develop detailed plan of experiments/simulations. It also includes modelling activity to accomplish the set objectives. Finally students write a technically correct report as per the suggested guidelines and present the work.

Research II is concerned with the continuation of the research project 1 that executed in the first semester. The exact work plan is decided in consultation with the research guide. At the end of the project, the candidate is expected to submit a report as per similar guidelines provided for Research I above which will be evaluated both by the research guide and an external examiner from the Department/Industry based on the presentation made by the candidate. A suitable combination of the marks for report and presentation will be considered for the final evaluation.

Research III is Thesis submission and Viva Voce. A typical thesis five chapters viz. Introduction, Literature

Review, Materials & Methods, Results and Discussion, Summary and Conclusion. The Thesis is evaluated by External Examiner and the students defend their thesis in front of large gathering.

The thesis is evaluated of 450 marks and the Rubrics for evaluation is given below.

Details	Max. Marks	Internal Examination	External Examination
Understanding of Research Area	70		
Problem formulation/Experimental design/Mathematical Modelling	60		
Quality of Work done	70		
Analysis and Interpretation of Results	70		
Quality of Thesis Submitted	60		
Quality of Presentation	60		
Answer to Question raised during Open Defence	60		
Total	450		

Recommendation: The Master of Dyestuff and Intermediates Technology Thesis submitted by the candidate is:

1. Acceptable, and may be regarded as final in the present form.
2. Acceptable with minor revisions. The revisions have been indicated to the student during open defence examination.

For reference, the marks distribution of Research Project-III for Praful Suresh Patil

Details	Max. Marks	Internal Examiner	External examiner
Understanding of Research Area	60	55	
Problem formulation/Experimental design/Mathematical Modelling	60	54	
Quality of Work done	70	65	
Analysis and Interpretation of Results	70	65	
Quality of Thesis Submitted	70	65	
Quality of Presentation	60	54	
Answer to Question raised during Open Defence	60	54	
Total	450	412	

Finally, Examiner recommends whether the thesis submitted by the student is acceptable, may be regarded as final in present form or acceptable but with minor revisions.

- A steady improvement in quality of the project has been seen as it is evident from the gradually increasing average score of the students. The research project comp a students will be able to think and work independently. The process optimization, modelling, design and engineering component has been increased gradually in the project
- Incorporation of more experimental design, various isolation, characterization and analysis using modern state-of the art instrument in the Research component include are facilitating the improvement.
- The thesis is thoroughly checked by two examiners (Internal and External) and it is being plagiarism checked prior to submission

Recommendation

The MTech thesis submitted by candidate is:

-Acceptable, may be regarded as final in present form.

-Acceptable, but with minor revisions.

DYP2007: Research III – Research, Thesis and Open Defence

M. Tech Dyestuff and Intermediate Technology, Graduated in 2021

Sr No.	Roll no.	Student Name	Thesis Title	Broad category of the subject
1	19DYE202	Aishwarya Shashikant Barshi	Thiophene based azo dyes and their applications	Synthesis and application
2	19DYE203	Amar Ranjit Singh	Photocatalytic Degradation of Dyes Using Nanoparticles	Synthesis and application
3	19DYE204	Ashok Ganesh Khillare	Purification and anti-microbial application of natural dye on natural fibre	Synthesis and application
4	19DYE205	Gauri Sanjay Ingole	Synthesis and application of 9-methoxy anthracene based dyes	Synthesis and application
5	19DYE206	Harsh Patel	Benzoylation reactions using Greener Catalyst	Synthesis and application
6	19DYE207	Krusha Kiranbhai Patel	Friedel Craft Acylation reactions using Greener Catalyst	Synthesis and application
7	19DYE208	Mahesh Ajit Gore	Formulations in Permanent Hair Dyes	Synthesis and application
8	19DYE209	Mustafa M Chhatariya	Synthesis of Carbazole Styrylquinoline Based Donor - π - Acceptor dyes and their photophysical studies.	Synthesis and application
9	19DYE210	Pratiksha Dasharath Khade	Studies on extraction and stability of natural dyes	Synthesis and application
10	19DYE211	Roshani Dhanraj Patil	Molecular Engineering of Benzofuran Based Molecules For Enhanced Solid State Emission	Synthesis and application

11	19DYE213	Swapnil M. Rindhe	Synthesis of Thiophene based dyes.	Synthesis and application
12	19DYE214	Trupti Satish Kale	-	-
13	19DYE215	Viraj Netaji Sable	Synthesis, characterization and application of phthalocyanine dyes	Synthesis and application
14	19DYE216	Monika Madhavrao Jadhav	Development of carbon-based Adsorbent for removal of selective dye from effluent water	Synthesis and application
15	19DYE217	Puja Suresh Sangle	Improvement in lightfastness of natural dyes	Synthesis and application

M. Tech Dyestuff and Intermediate Technology, Graduating in 2022

Sr. No.	Roll No	Student Name	Thesis Title	Broad Category of subject
1	20DYE202	Harshada Kashinath More	Near infrared absorbing coumarin dyes	Synthesis and application
2	20DYE204	Prerna Amit Patni	Design and Development of water soluble luminogens	Synthesis and application
3	20DYE205	Ruchita Prabhakar Khade	Design and Development of Chiral AIEgens	Synthesis and application
4	20DYE207	Vaibhav Pandurang Chavan	Antimicrobial dye for odourless fabric materia	Synthesis and application
5	20DYE209	Anushree Manohar Gawde	Green and effecient synthesis of Anthraquinone derivative	Synthesis and application
6	20DYE210	Ketki Rajaram Vishe	Flourescent reactive dye	Synthesis and application

Course Outcomes (students will be able to ..)

1. Perform experiments systematically to accomplish the set objectives (K3)

2. Evaluate critically the experimental data and draw meaningful inferences (K5)
3. Develop skills to defend own research effectively (K4)
4. Develop skills for writing scientific documents (K6)

Subject			PO1	PO2	PO3	PO4	PO5
Subject: DYP 2007- Research, Thesis and Open defence			K4	K5	K6	K4	K5
	CO1	K3	2	3	2	3	2
	CO2	K4	3	3	2	3	3
	CO3	K4	3	3	2	3	3
	CO4	K5	3	3	3	2	3
Course	K6	3	3	2	3	3	

Quality:

- The student projects are conducted in a planned and methodological manner.
- Their objectives are well defined and appropriate technical terms have been indicated in the projects.
- The projects are clearly to designed to set a plan for the experiments to be conducted.
- Good quality literature survey has been done and cited.
- The projects are well presented along with valid justification of the results obtained.

1.2.3 Initiatives related to industry interaction including industry internship/summer training (10)

Institute Marks (10)

The department welcomes industry specialists to deliver, guide, and discuss/update the students on current technical breakthroughs in order to learn about the difficulties and current practises of the sector. This provides an opportunity for students to interact with and learn from industry experts about industrial processes. It also benefits the industry because students are more prepared to work in the industry. As a result of this exposure, the technology gap between institutes and industry is minimised, and students' employability increases.

A. Industry Supported Laboratories.

Our laboratory is supported by a few industries,

- 1) Colourtex Industries Pvt. Ltd.
- 2) Astik Dyestuff Pvt. Ltd.
- 3) Lakhani Dyestuff Pvt. Ltd.
- 4) Bharat Organics

- 5) Gauri Fine Chemicals
- 6) Dhiren Chemical Industries
- 7) S.K Dyestuff & Organic Chemicals Pvt. Ltd.
- 8) Vasant Chemicals Pvt. Ltd.
- 9) Diamond Dyechem Ltd.
- 10) Neelikon Food, Dyes & Chemicals
- 11) Gopinath Chemtech
- 12) QV labs, Ankleshwar

B. Industry involvement in partial delivery of any regular courses for students,

In each academic year of M tech Dyestuff Technology, faculty from industry takes the course,

1. Prof. Vijay Y Sane - Gharda Chemicals Pvt. Ltd.
2. Mr. Dilip G Udas – Ultraconserve Pvt. Ltd.

C. Industrial training of 4-6 months and post training Assessment

Students spend 15 weeks to 6 months in a company for in-plant training where they get a direct exposure of a company, their various products in the market, production of the product, process design, analytical techniques, idea of product innovation, and product commercialisation. Moreover, a student learns about the various processes for Major Products (no confidential proprietary information may be included), Chemistry of processes (in case of innovation for new product) based on Journal papers, Patents, Books, etc., Safety and Health (Material Safety Data Sheets, Safety Policy), Environmental Protection (measures used and general description of the processes and facilities used). A student gets an opportunity to work under an industry mentor.

Details of M. Tech. Students went for internship in the Industry

Students completing industrial training in 2019-2020:

Due to COVID-19 pandemic and lockdown restrictions many students could not complete their industrial training.

M. Tech Dyestuff Technology - Batch of 2018-2019:

Sr. No.	Student Name	Roll No.	Organization
1	Aadeshkumar L. Chordiya	18DYE201	Tata chemicals limited innovation centre, Pune
2	Praful Suresh Patil	18DYE203	Gopinath Chem-Tech Ltd.Ahmedabad

3	Aditi Vilas Mate	18DYE204	Tata chemicals limited innovation centre, Pune
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After the end of the in-plant training tenure, a student submits a written report on the project assigned to them by the company to the institute. The report consists of background of the project, details of the experiment performed, product design, and application, details of the product known in the market, techno-economic feasibility and finally analysis of data including conclusion. The project report was assessed based on writing skills including formatting as per given instruction. Moreover, the student gives a presentation on the work performed in the industry before the research mentor and other faculties of the department. The assessment of the presentation was done based on the presentation skill of the student and the ability of data analysis by the student. In addition, marks from the industry mentor are also collected and recommendation from the industry mentor is also considered for the final evaluation.

The in-plant training is evaluated of 450 marks and the rubrics for evaluation are given below,

Sr. No.	Details	Max. Marks	Research mentor	External Examiner
1.	Background of Project	25	-	-
2.	Experiment performed/Mathematical modelling if any/Design/Techno-economic feasibility/Analysis of data	125	-	-
3.	Conclusion	30	-	-
4.	Writing Skills including formatting as per given instruction	30	-	-
5.	Presentation based on the work performed and its analysis/Presentation Skills	90	-	-
6.	Marks Given by Industry Mentor	150	-	-

	Total	450		
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For reference, the marks distribution of Internship Programme for Praful Suresh Patil,

Sr. No.	Details	Max. Marks	Research mentor	External Examiner
1.	Background of Project	25	20	-
2.	Experiment performed/Mathematical modelling if any/Design/Techno-economic feasibility/Analysis of data	125	120	-
3.	Conclusion	30	25	-
4.	Writing Skills including formatting as per given instruction	30	25	-
5.	Presentation based on the work performed and its analysis/Presentation Skills	90	80	-
6.	Marks Given by Industry Mentor	150	150	-
	Total	450	420	

Report on training programme held at Amogh, Badlapur held in the year 2019

Location - W – 79 & 80, MIDC, Mankivli, Badlapur (East)

Thane - 421503.

MAHARASHTRA, INDIA.

One day training programme was organised on 30-11-2019 for the students of Dyestuff Technology (first year M. Tech).

The Amogh is located in Badlapur, in Maharashtra state of India

We started our day with orientation programme in morning session in which we were introduced with faculties working in amogh by Mr. Shripad S. Kher

Later we were introduced about the unit processes and the different types of reactions performed at the plant. The processes and reactions were namely, Nitration, sulfonation, chlorosulfonation, reduction, oxidation, willgerodt-kindler reaction, friedel crafts, fischer indole synthesis, leuckart reaction, building of pyridine & pyrimidine derivatives.

Then we visited different utilities available in the organization like Boilers, Cooling Tower, Compressor, Vacuum Pump, Water Ejector, Brine Unit (20 TR, -20 C). Prof. Sane sir told us the latest trends in the dyes. Also, the current situation in the Dyestuff Industry.

We were introduced briefly about many reactors like Glass lined Reactor, SS Reactor, PP Reactor, MSRL Reactor, H.D.P.E Reactors & Also various Downstream process equipment like Nutsche Filter (M.S, P.P, M.S.R.L), Sparkler Filter (S.S, H.D.P.E), Pressure filter (S.S), Centrifuge, Tray Dryer, Rotary Vacuum Dryer, Fluidized Bed Dryer, Multi Mill, Storage Tanks etc.

We got to see the quality control lab instruments like Analytical Balance, TLC with UV Cabinet, Karl Fischer Apparatus, Ultrasonic Bath, Melting Point Apparatus, HPLC, GLC etc.

After the complete visit we had a question-and-answer session with our professor Mr. Vijay Sane and Mr. Shripad Kher. During this session we got to ask our doubts and we got very informative and satisfying explanation from them.

The day ended with valedictory function. The whole programme was very beneficial for us because we actually saw everything we learn in college.



Research and development facility of the organization



Chilling Plant



Pilot Plant



Glass-Lined Reactor



1.2.4 Participation of Industry professionals in curriculum development, as examiners, in major projects (10) Institute Marks (10)

List of Examiners,

Sr. No.	Name	Organization
1	Dr. Rajesh Ramamurthy	Archroma India Pvt. Ltd. – Vice-President and Regional Head- Product stewardship Asia
2	Dr. Pankaj Desai	Colurtex Industries Pvt. Ltd.
3	Dr. Ambady Rajagopalan	QV Labs. Pvt. Ltd. – Senior Vice President
4	Dr. Pariti Sivarama Kumar	Dystar India Pvt. Ltd.
5	Dr. Atul Chaskar	Mumbai University
6	Dr. Anant Desai	Shroff University
7	Dr. Dhananjay Deulgaonkar	BASF
8	Dr. Shavak Bhungara	S. K. Dyes

1.2.5 Quality of laboratory work given (20) Institute Marks (20)

Laboratory work comprises of experimental work and assignments. The experiments to be conducted in the laboratories have been well defined and the lab manuals have been provided to the students. The students are grouped in pairs to conduct the experiments which allow them to learn independently. The results are discussed in the class.

The list of Experiments;

Semester I – Unit Process Synthesis		
Experiment No.	Name of The Experiment	Students/Group
1	Synthesis of 4-Nitroacetanilide	2
2	Synthesis of Sulfanilic Acid using Baking Process	2
3	Synthesis of 1-Amino,2-Naphthol,4-Sulfonic Acid	2

4	Synthesis of Benzene-m-Disulfonic acid	2
5	Synthesis of 2-(4-methylbenzoyl) Benzoic acid	2
6	Synthesis of 5-Amino Salicylic acid	2
7	Synthesis of Permanent Red 2G (Dye)	2
8	Synthesis of 1-Bromoanthraquinone	2
9	Synthesis of 4-Amino-Azobenzene	2
10	Synthesis of Phenyl Hydrazine-p-Sulfonic acid	2
11	Synthesis of M-AminoNitrobenzene from Nitrobenzene	2
12	Synthesis of Bromamine Salt	2
13	Synthesis of Benzathrone from Anthraquinone	2
Semester II – Synthesis of Couplers		
1	Synthesis of Schaeffer's acid	2
2	Synthesis of R-acid	2
3	Synthesis of G-acid	2
Agrochemical Formulation		
1	Synthesis of Chlorothalonil	3
Cosmetic Formulations		
1	Preparation of Nail Lacquer	2
2	Preparation of Shampoo	2
3	Preparation of Toothpaste	2
4	Preparation of Shaving Lotion	2
5	Preparation of Mouth wash	2
Semester 1: Advance Unit process and formulations laboratory		
Experiment No.	Name of the Experiment	Students/group
1	Synthesis of Sulphanilic Acid	2
2	Synthesis of 1,2,4, Acid	2
3	Synthesis of 2,4,Dibromo-1-Amino Anthraquinone	2

4	Synthesis of Permanent Red 2G	2
5	Synthesis of 5- Amino Salicyclic Acid	2
6	Synthesis of 4-Amino Azobenzene	2
7	Synthesis of Phenyl Hydrazine p-sulfonic acid	2
8	Synthesis of 4-Nitro acetanilide	2
9	Synthesis of o-Benzoyl Benzoic acid	2

Specific features of the experiments;

Students discuss the results of experiments performed with practical supervisor or respective faculty.

The students submit lab notebook (journal) for each experiment.

For each experiments the students write: Background/ Relevance, Experimental design/method, Observations, Results, and Inference.

2 PROGRAM OUTCOME (75)

Institute Marks (75)

2.1 Establish the connect between the courses and POs (15)

Institute Marks (15)

Pos	Statement	Courses
PO1	An ability to independently carry out research /investigation and development work to solve practical problems	DYP2001, DYP2003, DYP2004, DYP2002, DYP2005, DYP2006
PO2	An ability to write and present a substantial technical report/document	DYP2007, DYP2006, DYP2005, DYP2003, DYP2004
PO3	Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program	DYT2101, DYT2102, DYT2103, DYP2001, DYT2106, DYT2108, DYT2109, DYP2007
PO4	An ability to use and evaluate modern techniques or tools applied in dyestuff technology for product and process development and for analysis	DYP2007, DYP2006, DYP2002, DYP2005, DYT2108, DYP2003, DYP2001, DYT2103
PO5	An ability to analyses problems and offer solutions related to Dyestuff and intermediates, Pigments and colorants industry.	DYT2101, DYT2102, DYT2103, DYP2001, DYP2004, DYT2108, DYP2002, DYP2006, DYP2007

2.2 Attainment of Program Outcomes (60)

Institute Marks 60.00

2.2.1 Describe the assessment tools and processes used to gather the data upon which the evaluation of Program Outcome is based (20)

Institute Marks (20)

Assessment Tools	
Direct Survey	Indirect Methods
Exams	Alumni/Examiner Feedback
Assignments	

Projects	Exist Survey
Tutorials	
Labs	

Calculation of Course Outcome (CO)

Assessment tools used to measure the student learning and Course Outcomes:

- End Semester exam: End Semester Score (25 M)
- Continuous Evaluation: Score for Continuous assessments (10 M) and Mid sem Examination (15 M)

The process adopted to map the assess the course outcomes

The assessment of the course outcomes (COs) have been performed by subject specialists. The corresponding steps have been discussed below.

Step I: Percentage weightage (W) has been given to each of the COs of a course corresponding to each question asked in end semester question paper.

Step II: Matrix showing Question wise marks for each student.

Step III: Calculation of CO wise score from Question wise marks. It is calculated as follows

$$S_{CO_j} = \sum_{i=1}^5 \sum_{j=1}^{10} \sum_{k=1}^5 S_{Q_{ij}} \times W_{iQk}$$

$$= S_{Q_{1j}} \times W_{iQ1} + S_{Q_{2j}} \times W_{iQ2} + S_{Q_{3j}} \times W_{iQ3} + S_{Q_{4j}} \times W_{iQ4} + S_{Q_{5j}} \times W_{iQ5}$$

$$s_{CO_i} = \frac{1}{j} \left(\sum_{j=1}^{10} S_{CO_j} \right)$$

Where, W_{iQk} =percent weightage given to i^{th} CO corresponding to k^{th} question (Qk);

S_{Qkj} = Score obtained by j^{th} student corresponding to k^{th} question (Qk)

SCO_{ij} = Score obtained by j^{th} student corresponding to i^{th} CO

SCO_i =Average of SCO_{ij} obtained for the entire class corresponding to CO_i

Step IV: Counting % of students (m) scoring at least class average score of corresponding to CO_i .

If % of student scoring at least class average (m)	Attainment assigned to a_i
$m \geq 60\%$	3
$50\% \leq m \leq 59\%$	2
$40\% \leq m \leq 49\%$	1

Step V: Steps I to IV are followed for Continuous evaluation and Mid Semester marks.

Step VI: Calculation of Attainment of CO, as given below.

$$A_{CO_i} = a_{IES} \times w_{ES} + a_{ICA} \times w_{CA}$$

Where, a_{IES} =Attainment assigned to i^{th} CO from End Semester Marks;

w_{ES} =Weightage of Attainment from End Semester marks = 0.8;

a_{ICA} =Attainment assigned to i^{th} CO from Continuous + Mid Semester Marks;

w_{CA} =Weightage of Attainment from Continuous + Mid Semester Marks = 0.2;

Step VII: Calculation of Attainment of Course (Acourse), as given below.

$$A_{course} = \frac{A_{CO1} + A_{CO2} + A_{CO3} + A_{CO4} + A_{CO5}}{5}$$

2.2.2 POs attainment levels with observations (40)

16 batch DYE			Level	PO1			PO2			PO3			PO4			PO5		
				Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment
Direct	Sem1	DYT2101	K6	3	0	0.00	3	0	0.00	3	0	0.00	3	0	0.00	3	0	0.00
		DYT2102	K6	3	0		3	0		3	0		2	0		3	0	
		DYT2103	K6	3	0		3	0		2	0		3	0		3	0	
		DYP2004	K6	3	0		3	0		2	0		2	0		3	0	
		DYP2001	K6	3	0		3	0		3	0		2	0		3	0	
		DYP2003	K6	3	0		3	0		2	0		3	0		3	0	
	Sem2	DYT2106	K6	2.8	0		2.8	0		2.6	0		2.4	0		2.8	0	
		DYT2109	K5	3	0		3	0		2	0		2	0		3	0	
		DYT2108	K6	3	0		2	0		2	0		2	0		3	0	
		DYP2002	K6	3	0		3	0		3	0		2	0		3	0	
		DYP2005	K6	3	0		3	0		2	0		2	0		3	0	
	Sem3	DYP2006	K6	3	0		2.6	0		2.8	0		2.2	0		3	0	
	Sem4	DYP2007	K6	3	0		3	0		2	0		3	0		3	0	
	Electives	PHT2101	K6	3	0		2	0		3	0		2	0		3	0	
		BST2106	K6	3	0		3	0		3	0		2	0		3	0	
		DYT2110	K6	3	0		3	0		3	0		2	0		3	0	
		DYT2111	K4	2	0		2	0		2	0		3	0		2	0	
	TOTAL			49.8		47.4		42.4		37.6		49.8						
Indirect	Survey I	Student Feedback			0				0			0		0				
	Survey II	Alumni Feedback			0				0			0		0				
		PO1 Attainment			0.00	PO2 Attainment	0.00	PO3 Attainment	0.00	PO4 Attainment	0.00	PO5 Attainment	0.00					
		% PO Attainment			0.00	% PO Attainment	0.00	% PO Attainment	0.00	% PO Attainment	0.00	% PO Attainment	0.00					

17 batch DYE			Level	PO1			PO2			PO3			PO4			PO5		
				Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment
Direct	Sem1	DYT2101	K6	3	0	0.00	3	0	0.00	3	0	0.00	3	0	0.00	3	0	0.00
		DYT2102	K6	3	0		3	0		3	0		2	0		3	0	
		DYT2103	K6	3	0		3	0		2	0		3	0		3	0	
		DYP2004	K6	3	0		3	0		2	0		2	0		3	0	
		DYP2001	K6	3	0		3	0		3	0		2	0		3	0	
		DYP2003	K6	3	0		3	0		2	0		3	0		3	0	
	Sem2	DYT2106	K6	2.8	0		2.8	0		2.6	0		2.4	0		2.8	0	
		DYT2109	K5	3	0		3	0		2	0		2	0		3	0	
		DYT2108	K6	3	0		2	0		2	0		2	0		3	0	
		DYP2002	K6	3	0		3	0		3	0		2	0		3	0	
		DYP2005	K6	3	0		3	0		2	0		2	0		3	0	
	Sem3	DYP2006	K6	3	0		2.6	0		2.8	0		2.2	0		3	0	
	Sem4	DYP2007	K6	3	0		3	0		2	0		3	0		3	0	
	Electives	PHT2101	K6	3	0		2	0		3	0		2	0		3	0	
		BST2106	K6	3	0		3	0		3	0		2	0		3	0	
		DYT2110	K6	3	0		3	0		3	0		2	0		3	0	
	DYT2111	K4	2	0	2	0	2	0	3	0	2	0						
	TOTAL			49.8		47.4		42.4		37.6		49.8						
Indirect	Survey I	Student Feedback			0					0			0					
	Survey II	Alumni Feedback			0					0			0					
		PO1 Attainment			0.00	PO2 Attainment	0.00	PO3 Attainment	0.00	PO4 Attainment	0.00	PO5 Attainment	0.00					
		% PO Attainment			0.00	% PO Attainment	0.00	% PO Attainment	0.00	% PO Attainment	0.00	% PO Attainment	0.00					

18 batch DYE			Level	PO1			PO2			PO3			PO4			PO5		
				Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment
Direct	Sem1	DYT2101	K6	3	2.28	2.39	3	2.28	2.39	3	2.28	2.38	3	2.28	2.45	3	2.28	2.39
		DYT2102	K6	3	1.72		3	1.72		3	1.72		2	1.72		3	1.72	
		DYT2103	K6	3	2.68		3	2.68		2	2.68		3	2.68		3	2.68	
		DYP2004	K6	3	3		3	3		2	3		2	3		3	3	
		DYP2001	K6	3	3		3	3		3	3		3	3		2	3	
		DYP2003	K6	3	3		3	3		2	3		3	3		3	3	
	Sem2	DYT2106	K6	2.8	2.28		2.8	2.28		2.6	2.28		2.4	2.28		2.8	2.28	
		DYT2109	K5	3	2.84		3	2.84		2	2.84		2	2.84		3	2.84	
		DYT2108	K6	3	2.68		2	2.68		2	2.68		2	2.68		3	2.68	
		DYP2002	K6	3	1		3	1		3	1		2	1		3	1	
		DYP2005	K6	3	1		3	1		2	1		2	1		3	1	
	Sem3	DYP2006	K6	3	3		2.6	3		2.8	3		2.2	3		3	3	
	Sem4	DYP2007	K6	3	3		3	3		2	3		3	3		3	3	
	Electives	PHT2101	K6	3	2.36		2	2.36		3	2.36		2	2.36		3	2.36	
		BST2106	K6	3	1.40		3	1.40		3	1.40		2	1.40		3	1.40	
		DYT2110	K6	3	2.6		3	2.6		3	2.6		2	2.6		3	2.6	
		DYT2111	K4	2	3		2	3		2	3		3	3		2	3	
		TOTAL			49.8			47.4			42.4			37.6			49.8	
Indirect	Survey I	Student Feedback		2.20	2.30	2.40	2.40	2.80	2.55	2.40	2.60	2.80	2.75					
	Survey II	Alumni Feedback		2.40		2.40		2.30		2.80								
	PO1 Attainment			2.37	PO2 Attainment	2.39	PO3 Attainment	2.41	PO4 Attainment	2.48	PO5 Attainment	2.46						
	% PO Attainment			79.09	% PO Attainment	79.65	% PO Attainment	80.38	% PO Attainment	82.72	% PO Attainment	82.09						

PO Attainment (2018-19)

Course	PO1	PO2	PO3	PO4	PO5
DYT101	3	3	3	2	3
DYT102	3	3	2	2	3
DYT103	3	3	3	3	3
DYP004	3	3	3	3	3
DYP001	3	3	3	3	3
DYP003	3	3	3	3	3
DYT106	3	3	3	3	3
DYT109	3	3	3	3	3

19 batch DYE			Level	PO1			PO2			PO3			PO4			PO5				
20 batch DYE				Level	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	Weightage	CO Attainment	Avg. CO Attainment	
Sem1	DYT2101	K6	3		2.6	2.28	3	0	0.28	3	0	0.28	3	0	0.28	3	0	0.28	3	0
	DYT2102	K6	3	2.4	2.4	3	0	0	3	0	0	2	0	0	3	0	0	3	0	0
	DYT2103	K6	3	2.4	2.4	3	0	0	2	0	0	3	0	0	3	0	0	3	0	0
	DYP2004	K6	3	2	2	3	0	0	2	0	0	2	0	0	3	0	0	3	0	0
Sem2	DYP2001	K6	3	2.8	2.20	3	0	0.20	3	0	0.20	2	0	0.20	3	0	0.20	3	0	0.20
	DYP2003	K6	3	2	2	3	0	0	2	0	0	3	0	0	3	0	0	3	0	0
Sem2	DYT2106	K6	2.8	2.36	2.52	2.8	0	0.08	2.52	2.6	0	0.08	2.4	0	0.08	2.54	2.8	0	0.08	2.52
	DYT2109	K5	3	2.2	2.2	3	0	0	2	0	0	2	0	0	3	0	0	3	0	0
	DYT2108	K6	3	1.56	2.12	2	0	0.15	2.15	2	0	0.15	2	0	0.15	2.07	3	0	0.15	2.12
	DYP2002	K6	3	3	3	3	0	0	3	0	0	2	0	0	3	0	0	3	0	0
Sem4	DYP2005	K6	3	2	2	3	0	0	2	0	0	2	0	0	3	0	0	3	0	0
	DYT2107	K6	3	2.36	2.36	3	0	0	3	0	0	3	0	0	3	0	0	3	0	0
Sem3	DYP2006	K6	3	0	0	2.6	0	0	2.8	0	0	2.2	0	0	3	0	0	3	0	0
Sem4	DYP2007	K6	3	0	0	3	0	0	2	0	0	3	0	0	3	0	0	3	0	0
Electives	PHT2101	K6	3	2.36	2.36	2	0	0	3	0	0	2	0	0	3	0	0	3	0	0
	BST2106	K6	3	2.80	2.80	3	0	0	3	0	0	2	0	0	3	0	0	3	0	0
	DYT2110	K6	3	3	3	3	0	0	3	0	0	2	0	0	3	0	0	3	0	0
Survey I	Student Feedback	K4	2	2.48	2.30	2	0	0.20	2.30	2	0	0.20	3	0	0.20	2.60	2	0	0.20	2.75
	TOTAL		49.8			47.4			42.4			37.6			49.8					
Survey I	Student Feedback	PO1 Attainment	2.50	2.48	2.45	PO2 Attainment	2.80	2.50	2.60	PO3 Attainment	2.70	2.48	2.65	PO4 Attainment	2.70	2.55	2.75	PO5 Attainment	2.60	2.57
Survey II	Alumni Feedback		2.40	82.57		2.40	83.20		2.60	82.76		2.80	85.05		2.70	85.57				
		PO1 Attainment		2.19		PO2 Attainment	2.24		2.28		2.20		2.23							
		% PO Attainment		72.84		% PO Attainment	74.54		76.09		73.47		74.17							

DYT108	3	3	3	3	3
DYP002	1	1	1	1	1
DYP005	1	1	1	1	1
DYP006	3	3	3	3	3
DYP007	3	3	3	3	3
PHT101	3	2	3	2	3
BST106	2	2	2	1	2

DYT110	3	3	3	3	3
DYT111	3	3	3	3	3

Attainment level

Direct attainment weightage (in numbers from 1 to 100)		Indirect attainment weightage			
80		20			
Course	PO1	PO2	PO3	PO4	PO5
Direct Attainment	2.71	2.65	2.65	2.47	2.71
Indirect Attainment	2	3	3	3	3

PO Attainment (2019 – 2020)					
Course	PO1	PO2	PO3	PO4	PO5
DYT 2101	3	3	3	2	3
DYT 2102	3	3	2	2	3
DYT 2103	3	3	3	3	3
DYP 2004	3	3	3	3	3
DYP 2001	3	3	3	3	3
DYP 2003	3	3	3	3	3
DYT 2106	3	3	3	3	3
DYT 2109	3	3	3	3	3
DYT 2108	3	3	3	3	3
DYP 2002	1	1	1	1	1
DYP 2005	1	1	1	1	1
DYP 2006	3	3	3	3	3
DYP 2007	3	3	3	3	3
PHT 2101	3	2	3	2	3
BST2106	2	2	2	1	2
DYT2110	3	3	3	3	3
DYT 2111	3	3	3	3	3
Direct PO Attainment	2.71	2.65	2.65	2.47	2.71
Indirect PO Attainment	2.45	2.55	2.55	2.55	2.45

PO Attainment (2020-2021)					
Course	PO1	PO2	PO3	PO4	PO5
DYT 2101	3	3	3	3	3
DYT 2102	3	3	2	2	3
DYT 2103	3	2	3	2	3
DYP 2003	3	3	2	2	3
DYP 2001	3	3	3	3	3
DYP 2004	3	3	2	3	3
DYT 2106	3	3	3	3	3
DYT 2109	3	3	2	2	3
DYT 2108	2	2	2	2	2
DYP 2002	3	3	3	3	3
DYP 2005	3	3	2	2	3
DYP 2006	0	0	0	0	0
DYP 2007	0	0	0	0	0
PHT 2101	3	2	3	2	3
BST2106	3	3	3	3	3
DYT2110	3	3	3	3	3
DYT 2111	2	3	2	3	2
Direct PO Attainment	2.53	2.47	2.25	2.24	2.56
Indirect PO Attainment	2.45	2.60	2.65	2.75	2.65

3. STUDENTS' PERFORMANCE (75)

Institute Marks 11.67

Table 3.1

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2020-21 (CAY)	2019-20 (CAYm1)	2018-19 (CAYm2)	2017-18 (CAYm3)	2016-17 (CAYm4)
Sanctioned intake of the program(N)	18	18	4	4	4
Total number of students admitted through GATE (N1)	0	1	0	0	0
Total number of students admitted through PG Entrance and others (N2)	6	14	3	0	0
Total number of students admitted in the programme(N1 + N2)	6	15	3	0	0

Table 3.2

Year of entry	N1+N2 (As defined above)	No of students who have successfully graduated	
		I year	II year
2020-21 (CAY)	6		
2019-20 (CAYm1)	15	15	
2018-19 (LYG)	3	3	0
2017-18 (LYGm1)	0	0	0
2016-17 (LYGm2)	0	0	0

3.1 Enrolment Ratio through GATE (20)

Institute Marks (0)

	N (From Table 3.1)	N1 (From Table 3.1)	Enrollment Ratio $[(N1/N)*100]$
2020-21 (CAY)	18	0	0.00

2019-20 (CAYm1)	18	1	5.56
2018-19 (CAYm2)	4	0	0.00

Average [(ER1 + ER2 + ER3) / 3] : 1.85

Assessment : 0.00

3.2 Success Rate in the stipulated period of the program (20)

Institute Marks()

Item	Latest Year of Graduation, LYG (2020-21)	Latest Year of Graduation, LYG (2019-20)	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in first year of same batch	17	3			
Y Number of students completing program in stipulated duration	-	3			
Success Index(SI = Y/X)	-	1			

Average SI [(SI1 + SI2 + SI3) / 3] :

Assessment [20 * Average SI] :

3.3 Placement, Higher Studies and Entrepreneurship (20)

Institute Marks ()

Item	CAYm1 (2020-21)	CAYm1 (2019-20)	CAYm2 (2018-19)	CAYm3 (2017-18)
Total No of students admitted in first year(N)	17.00	3.00	0.00	0.00
No of students placed in the companies or government sector(X)	8.00	2.00	0.00	0.00
No. of students pursuing Ph.D. / JRF/ SRF(Y)	0.00	1.00	0.00	0.00
No of students turned entrepreneur in engineering/technology (Z)	0.00	0.00	0.00	0.00
Placement Index [(X+Y+Z)/N] :	0.470	1.00	0.00	0.00

Average Placement [(P1 + P2 + P3)/3] : 0.490

Assessment [20 * Average Placement] : 9.80

Assessment Year: 2020-21 (CAYm0)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Aishwarya Shashikant Barshi	19DYE202	-	-
2	Amar Ranjit Singh	19DYE203	Jay chemicals	-
3	Ashok Ganesh Khillare	19DYE204		-
4	Gauri Sanjay Ingole	19DYE205	Deepak Nitrite	-
5	Harsh Patel	19DYE206	-	-
6	Krusha Kiranbhai Patel	19DYE207	-	-
7	Mahesh Ajit Gore	19DYE208	UPL	-
8	Mustafa M Chhatariya	19DYE209	-	-
9	Pratiksha Dasharath Khade	19DYE210	Deepak Nitrite	-
10	Roshani Dhanraj Patil	19DYE211	-	-
11	Swapnil M. Rindhe	19DYE213	Deepak Nitrite	-
12	Trupti Satish Kale	19DYE214	-	-
13	Viraj Netaji Sable	19DYE215	-	-
14	Monika Madhavrao Jadhav	19DYE216	Deepak Nitrite	-
15	Puja Suresh Sangle	19DYE217	Merico	-

Assessment Year : 2019-20 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Aadesh Lunkaran Chordiya	18DYE201	Lakhani Dyestuff	-
2	Praful Patil	18DYE203	ICT	-
3	Aditi Vilas Mate	18DYE204	Bet and Bet Industries	-

Assessment Year : 2018-19 (CAYm2)

S. No	Student Name	Enrollment No	Employee Name	Appointment No
1				

Assessment Year : 2017-18 (CAYm3)

S. No	Student Name	Enrollment No	Employee Name	Appointment No
1				

3.4 Professional Activities (15)

Institute Marks 5.00

3.4.1 Student's participation in Professional societies/chapters and organizing engineering events (5)

Extracurricular Activities

E Cell

E-Cell ICT aims to enhance the outlook of students towards entrepreneurship, helping them convert their idea into business models or patents. We also aim to create a culture of creativity, innovation and entrepreneurship by organizing lectures, events and workshops on basic business prerequisites-finance, stock market, marketing, business communication and many others.

E-Cell Photo

Vortex

Vortex is India's largest ChemFest combining a wide array of fields such as Chemical Engineering, Polymers and coatings, Dyes, Oils, Foods, Pharmacy & Pharmaceutical Technology, Biotechnology & Biological Sciences, Business, Management and fun general events. Vortex is unique in its scope and ideas.

Considering the stalwarts and leaders from industry and academia, representatives of industries and the brightest students from across a plethora of disciplines, Vortex expects a footfall of 7000 people. The first edition of Vortex: The chemfest (2013) was a grand success. Having the tough task of

replacing two of the most common terms in a chemical technology students' dictionary, Exergy for Undergraduates and YRC-YICC for Post Graduates, Vortex set a new landmark for chemistry related fests everywhere. Vortex (2013) was honoured with the BEST STUDENTCHAPTER AWARD by the iiche (Indian Institute of Chemical Engineers).

The following editions, Vortex 2014, Vortex 2015 and Vortex 2016 greatly added to the legacy by its predecessor. With an increased number of participants and industries which it is associated with, Vortex has created a formidable reputation of delivering on every promise made to sponsors and participants alike. It has been praised by veterans and enjoyed thoroughly by participants. Vortex 2015 and Vortex 2018 received the highest form of support given by UNESCO to any non-profit organization – the UNESCO Patronage. Vortex has also received support and recognition from the Royal Society of Chemistry.

Bombay Technologist

The Bombay Technologist is the in-house peer reviewed research Journal of the Institute of Chemical Technology published semi-annually.

It was started in 1951, by the erstwhile Technological Association, the highest decision making student body of the institute. Professor K. Venkatraman, a pioneer in Chemical Technology himself, envisioned the concept of an in-house research journal run by the institute and thus laid the foundation of Bombay Technologist.

The Institute of Chemical Technology is itself an internationally renowned center for research. It churns out hundreds of quality research publications and numerous patents every year solely in Chemical Engineering and Technology. Such a distinction is enjoyed by few, globally. Six decades later, there is no looking back. Over sixty volumes have been published since. The latest issue is Volume 64.

TEDx ICT Mumbai

TEDxICTMumbai is an event that is organised independently by the students of the Institute of Chemical Technology, Mumbai operated by an official license obtained by TED. The main purpose of conducting this event is to propagate new ideas, innovation and inventions.

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 TEDx ICT Mumbai endeavour, 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.

In a world where the way we exchange, understand, and innovate in ways which are constantly evolving, TED and TEDx are great tools to interact with the world without having to travel around

the world to do so. This makes information and ideas easier to access, enables collaborations between citizens of different countries and above all promotes the harmonious exchange of innovation, something that is the need of the hour in the 21st century.

SportSaga

Sportsaga is the annual sports festival of ICT, Matunga. Currently being in its fifteenth edition, Sportsaga has grown to become one of the largest and most awaited sports festival where ardent sports personalities participate from all over the country. It provides a key platform for all the sports enthusiasts in an array of sports like cricket, volleyball, basketball, athletics, badminton and many more, creating an extraordinary spectacle of inimitable emphasis in sports talent. The event, embraced by the remarkable presence of celebrated sports personalities and spirited audience, has always endeavored unwavering for attaining new zeniths in the pursuit of excellence and vibrancy. The 10 exhilarating days of Sportsaga have many reverberating experiences for participants and supporters, creating a lifetime of memories

Manzar

Manzar is the annual cultural festival of the Institute of Chemical Technology (formerly UDCT), Mumbai. Incepted in 2007, it has grown to be one of the fastest growing festivals in Mumbai. With a footfall of close to 10,000 people growing each year, from 100 different colleges across Mumbai, Manzar is a vibrant festival organized by this premier research institution.

Specialities

Social Change, Fashion Shows, Arena Concerts, Cultural Dance Performances, Film Making, Photography, The Big Band Theory, Drama, Literary Arts, Workshops, and Bulls and Bears.

Manthan

Manthan, the Marathi Literary club was started in 1980's and is the oldest club that was introduced in Technological Association. Originally it was started as a club dedicated only for Marathi singing programs but over the period it covered a lot different aspects of Marathi literature. Along with these programs Manthan organizes different speeches and interviews of distinguished personalities who have succeeded in different fields. The club provides a platform to both experts and amateurs to participate in events, interact with great personalities and show their talents, qualities and aspirations. The club receives huge participation, huge support and a long lasting love from the students of ICT.

Co-Curricular Activities

International Conference on SMART MATERIALS FOR SUTAINABLE TECHNOLOGY (SMST)

Theme of the conference was Fundamental to Applications for Healthcare and Energy held at GOA in Feb 22nd -25th 2020, Bogmallo Beach Resort, Goa, India.

SMST 2020 seeks to capture the changing landscape of the various technologies in the areas of health, energy and environment. The theme of the conference is to focus on the fundamentals and applications of the underlying materials that enable their realization. In particular, the conference

wishes to unravel the innovative experimental and theoretical approaches, emerging trends and key challenges related to the structure, property, form, behavior and function of smart materials and their impact on the society at large.

Topics Covered

1. Self-assembled & hybrid structures
2. Solar cells
3. Advanced Functional Materials
4. Materials for storage devices
5. Energy harvesting
6. Sensors
7. Nanoelectronics and device application
8. Biomaterials
9. Bioinspired materials
10. Biosensors and Bioimaging
11. Carbon based materials
12. Smart and stimuli responsive materials
13. Point of care diagnostics, theranostics
14. Biophysical & biochemical characterization
15. Computational techniques

Seminar of Faculty of Green Chemistry

Held on 7th January 2020 at Hotel Sea Princess, Juhu, Mumbai

A full day Seminar on Faculty of Green Chemistry was held on 7th January 2020 at Hotel Sea Princess, Juhu, Mumbai. 127 Members attended



Our Head Dr. G. S. Shankarling, gave presentation on Biocompatible magic Deep Eutectic Solvents- A perspective for Concept to commercialization



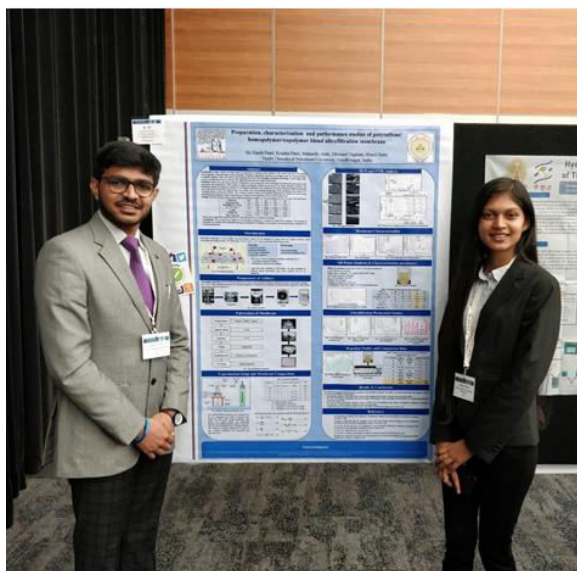
4th International Conference on Desalination using Membrane Technology

Date: 1-4th December 2019, Perth, Australia, Oceania

The development of new means to produce drinking water is a high priority for international organisations, governments and research agencies.

Sustainable development of effective desalination processes can make a major contribution to meeting the demand for drinking water, and membrane desalination is the most promising of the new approaches.

Our Two Students participated in these conference and presented their work on **Preparation, characterization and performance studies of polysulfone/homopolymer/copolymer blend ultrafiltration membrane**



Library Workshop

A two-day (Saturday 16th and 23rd Nov. 2019) workshop on "Effective ways to use E-resources" organized by Department of Dyestuff Technology, ICT in collaboration with Prof. M. M. Sharma Library, ICT for M. Tech students of Dyestuff Technology and M. Tech Perfumery and Flavor Technology. The workshop found out to be very useful for students as it covered all the aspects related to the Literature Survey; right from how to build a query and types of documents involved in research to use of proper research and reference management tools. The workshop concluded by a very informative session on Research Ethics by Mr. Vivek Patkar, renowned Mathematician and Researcher.



3.4 Student Publication (10)

Institute Marks ()

S. No	Student Roll No.	Authors	Title	Year	Source Title	Reference
1	19DYE203	Amar R Singh, Pratik S Dhumal, Madhuri Bhakare, Kshama D Lokhande, Mahesh P Bondarde, Surajit Some	In-Situ synthesis of metal oxide and polymer decorated activated carbon-based photocatalyst for organic pollutants degradation	2022	Separation and purification technology	Sep. Purif. Technol . 2022, 120380

4 Faculty Contribution (75)

Institute marks (75)

S. No	Name	PAN No	University Degree	Date of receiving degree	Area of Specialization	Research paper publication	Ph.D guidance	Ph.D. granted during the Assessment Year	Current Designation	Date (Designated as Prof/Assoc. Prof.).	Initial Date of Joining	Association Type	At present working with the Institution(Yes/No)	In case of NO, Date of Leaving	IS HOD?
1	Prof. Ganapati S. Shankarling	AEJPG9402M	ME/M. Tech and PhD	01/08/2000	Dyestuff Technology	124	20	1	Professor	20/02/2012	20/02/2006	Regular	Yes		No
2	Prof. Nagaiyan Sekar	AAYP56215K	ME/M. Tech and PhD	01/02/1988	Dyestuff Technology	542	28	8	Professor	28/07/2008	17/02/1988	Regular	Yes		Yes
3	Dr Satyajit Saha	CZGPS2122A	M.Sc. and PhD	28/05/2011	Organic Chemistry/ Dyestuff technology	25	1	1	Assistant Professor		02/02/2015	Regular	Yes		No
4	Dr. Surajit Some	CBOPS0582E	M.Sc. and PhD	17/03/2008	Organic Chemistry/ Dyestuff technology	58	3	3	Assistant Professor		17/09/2014	Regular	Yes		No

10	9	8	7	6	5
Dr. M. A. K. Kerawala	Dr. Chandu Madankar	Dr. R.D.Jain	Dr. Shamlan M.S Reshamwala	Dr. Nabanita Sadhukhan	Prof. Vijay Y Sane
AACP9005D	AMOPM1296Q	AGUPJ7114Q	BAVPR7928E	BHYPS6309C	AAAPS6503N
ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	M.Sc. and PhD	B.E./B.Tech
29/09/1984	29/01/2015	28/02/2009	18/08/2012	14/12/2009	01/06/1979
General Engineering		Pharmaceutical Chemistry	DBT-Centre Biotechnology	Organic Chemistry/Dyestuff technology	Chemical Technology
16	11	77	8	17	0
0	0	5	1	1	0
0	0	3	0	0	0
Associate Professor	Assistant Professor	Assistant Professor	Assistant Professor	Assistant Professor	Professor
05/03/1997					
16/02/1987	31/03/2015	01/10/2012	20/08/2014	01/04/2016	01/07/2019
Regular	Regular	Regular	Contractual	Regular	Contractual
Yes	Yes	Yes	Yes	Yes	No
					15/05/2020
No	No	No	No	No	No

16	15	14	13	12	11
Prof. Ravindra Kulkarni	Prof. P.R.Vavia	Prof.A.B. Pandit	Prof. V. D. Deshpande	Dr. Ashwin Mohan	Dr. D.D.Sarode
AAZPK8159R	ABNPV8456H	AADPP3869K	AFEPD6698G	AZPPM9011R	AALPS9158E
ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	M.Sc. and PhD	M.Sc. and PhD	ME/M. Tech and PhD
02/08/2005	01/07/1991	31/07/1984	19/12/2009	13/11/2014	15/02/2010
Technology Of Oils, Fats, Waxes & Lubricants	Pharmaceutic al Technology	Chemical Engineering	Physics	Physics	General Engineering
143	160	408	32	9	7
12	43	15	7	0	24
0	7	5	0	0	0
Professor	Professor	Professor	Professor	Assistant Professor	Associate Professor
	05/03/2003	01/01/1998	01/01/2009		01/03/2014
04/11/2016	01/12/1993	01/01/1991	02/05/1991	09/12/2015	12/06/1997
Regular	Regular	Regular	Regular	Regular	Regular
Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No

22	21	20	19	18	17
Dr. Neetu Jha	Dr. Sachin Jadhav	Prof. Prakash M.Bhate	Dr. Usha Sayed	Prof. B. M. Bhanage	Dr. S. Garimella
AKMPJ1673L	BFMOJ9477E	ABQPB9008A	AXYPS6318Q	ADZPB4128Q	BODPG7374H
M.Sc. and PhD	ME/M. Tech and PhD	M.Sc. and PhD	M.Sc. and PhD	M.Sc. and PhD	ME/M. Tech and PhD
14/07/2009	03/03/2016	01/02/1989	02/02/1998	01/02/1996	24/04/2010
Carbon Nanotube, graphing, fuel cell,	Chemical Engineering	Organic Chemistry /Dyestuff Technology	Textile Chemistry	Catalytic Science and Technology, Green	Material Engineering/ Dyestuff Technology
59	15	16	33	438	0
2	0	4	3	44	0
2	0	1	0	3	0
Assistant Professor	Assistant Professor	Professor	Associate Professor	Professor	Assistant Professor
			29/09/1998		
24/01/2012	22/05/2018	01/08/2008	29/09/1987	31/12/2003	11/04/2019
Regular	Regular	Regular	Regular	Regular	Regular
Yes	Yes	No	Yes	Yes	No
		31/10/2018			30/01/2021
No	No	No	No	Yes	No

28	27	26	25	24	23
Prof. Parag Gogate	Dr. V.H.Dalvi	Prof. P.D. Vaidya	Dr. Rashna Giara	Prof Anand Patwardhan	Dr. P.G. Goswami
AHNP3328H	ADPPD2092K	AGBPV5853B	AIMPG5872C	ABWPP6169L	AEAPG6881M
M.Sc. (Engineering)	ME/M. Tech and PhD	ME/M. Tech and PhD	M.com and Diploma in Dress	M.Sc. and PhD	ME/M. Tech and PhD
20/06/2002	09/12/2009	04/01/2005	02/02/2004	29/02/1988	28/03/2018
Chemical Engineering	Chemical Engineering	Chemical Engineering	Industrial management	Chemical Engineering	General Engineering
385	29	91	0	133	6
350	6	5	0	23	12
4	0	2	0	2	0
Professor	Assistant Professor	Professor	Assistant Professor	Professor	Assistant Professor
05/07/2018		12/02/2018			
03/07/2007	05/08/2011	01/08/2007	22/12/2017	18/12/2007	06/06/1998
Regular	Regular	Regular	Contractual	Regular	Regular
Yes	Yes	Yes	No	Yes	Yes
			31/12/2018		
No	No	No	No	No	No

34	33	32	31	30	29
Prof. Shreerang V.Joshi	Prof. Amit Pratap	Prof. Uday S. Annapure	Dr. Kedar S. Kulkarni	Dr. Archana Kalekar	Dr. R. D. Kale
AAGPJ5508A	AMAPP4724E	AGDPA0605L	ALQPK2687N	CAUJPK7808N	ADNPK2056Q
ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	M.Sc. and PhD	ME/M. Tech and PhD
31/10/1990	29/12/2006	29/09/2000	12/02/2018	14/05/2015	02/01/2012
Pharmaceutical Technology, Perfumery and Flavours	Technology of Oils and Fats, Waxes and Lubricants,	Food Technology, Flavors and Perfumery	Textile Chemistry	Physics	Textile technology
4	55	114	10	5	47
0	11	15	0	2	5
0	3	2	0	0	4
Professor	Professor	Professor	Assistant Professor	Assistant Professor	Associate Professor
	29/12/2015	16/04/2009			08/04/2016
04/04/2016	29/12/2003	16/04/2003	12/02/2018	01/06/2018	08/04/2003
Regular	Regular	Regular	Regular	Regular	Regular
Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No

40	Dr. Deepak VithalPinjari	39	38	37	36	35
AOKPP0919B	Prof. S. S. Bhagwat	Prof. Ganapati DYadav	Prof. Virendra KRathod	Dr. Jyotsna Sanjeev Waghmare	Prof. Laddha Kirtikumar Shivchandrajji	
AAIPB7360E	AAAPY1188M	AGHPR2864C	AAOPW6769L	AAGPL9490D		
ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	ME/M. Tech and PhD	
25/12/2012	30/06/1982	01/02/2006	29/12/2009	01/07/1995		
Chemical Technology	Chemical Engineering, Perfumery and Flavours	Chemical Engineering, Perfumery and Flavours	Technology of Oils and Fats, Waxes and Lubricants,	Pharmaceutical Technology, Perfumery		
88	89	35	25	0		
0	101	25	1	0		
0	1	4	2	0		
Assistant Professor	Professor	Professor	Associate Professor	Professor		
	18/11/2003	10/02/2016	04/04/2016	05/01/2007		
31/05/2013	18/11/1986	08/04/2003	03/04/2003	05/01/1988		
Regular	Regular	Regular	Regular	Regular		
No	Yes	Yes	Yes	Yes		
05/09/2018						
No	No	No	No	No		No

43	42	41
Prof. Dilip Bedekar	Prof. Ravindra V.Adivarekar	Prof. Pushpito K Ghosh
AACP2670H	ADYPA8910A	AERPG6341M
M.Sc	M.Sc. and PhD	ME/M. Tech and PhD
04/06/1976	01/02/1995	21/05/1980
Technology of Flavours and marketing	Textile Technology	Chemical Engineering
0	166	123
0	16	1
0	8	0
Professor	Professor	Professor
01/01/2019	30/12/2003	15/04/2015
Contractual	Regular	Regular
No	Yes	Yes
31/12/2019		
No	No	No

4.1 Student-Faculty Ratio (SFR) (10)

Institute Marks (10)

UG

No. of UG programs in department: 1

Bachelor of Technology in Dyestuff and Intermediates Technology						
Bachelor of Technology in Dyestuff and Intermediates Technology						
Year of Study	CAY		CAYm1		CAYm2	
	(2020-21)		(2019-20)		(2018-19)	
	Sanctioned intake	Actual admitted through lateral entry students	Sanctioned intake	Actual admitted through lateral entry students	Sanction Intake	Actual admitted through lateral entry students
2nd year	20	0	20	0	20	0
3rd year	20	0	20	0	20	0
4th year	20	0	20	0	20	0
Sub-total	60	0	60	0	60	0
total	60		60		60	
Grant Total	60		60		60	

PG

No. of PG program in department: 2

Masters of Technology in Dyestuff Technology			
Year of Study	CAY(2020-21)	CAYm1(2019-20)	CAYm2 (2018-19)
	Sanction Intake	Sanction Intake	Sanction Intake
1st Year	18	18	4
2nd Year	18	4	4
Total	36	22	8
Masters of Technology in Perfumery and Flavor Technology			
Year of Study	CAY(2020-21)	CAYm1(2019-20)	CAYm2 (2018-19)
	Sanction Intake	Sanction Intake	Sanction Intake
1st Year	18	18	18
2nd Year	18	18	18
Total	36	36	36
Grant Total	72	58	44

SRF

No. of UG programs in department: 1

No. of PG program in department: 2

Description	CAY(2020-21)	CAYm1 (2019-20)	CAYm2 (2018-19)
Total No. of Students in the Department(S)	132 Sum total of all (UG+PG) students	118 Sum total of all (UG+PG) students	104 Sum total of all (UG+PG) students
No. of Faculty in the Department(F)	26 F1	27 F2	26 F3
Student Faculty Ratio(SFR)	5.08 SFR1=S1/F1	4.37 SFR2=S2/F2	4.00 SFR3=S3/F3
Average SFR	4.48 SFR=(SFR1+SFR2+SFR3)/3		

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	Total number of contractual faculty in the department
CAY(2020-21)	24	2
CAYm1(2019-20)	25	2
CAYm2(2018-19)	24	2

Average SFR for three assessment years : 4.48

Assessment SFR : 10

4.2 Faculty competencies in the area of Program specialization (30)

Institute Marks (30)

4.2.1 Faculty name and specialization for the program under consideration (10)

Institute Marks (10)

Name of the faculty	Relevant Area of Specialization	
	2020-21 (CAY)	2019-20 (CAYm1)
Dr Satyajit Saha	Organic Chemistry, Dyestuff technology	Organic Chemistry, Dyestuff technology
Dr. Archana Kalekar	Physics	Physics
Dr. Ashwin Mohan	Physics	Physics
Dr. Chandu Madankar	Oils, Oleochemicals and Surfactants Technology	Oils, Oleochemicals and Surfactants Technology
Dr. D.D.Sarode	General Engineering	General Engineering
Dr. Deepak Vithhal Pinjari	Advanced materials, nanotechnology, polymers	Advanced materials, nanotechnology, polymers
Dr. Jyotsna Sanjeev Waghmare	Technology of Oils and Fats, Waxes and Lubricants	Technology of Oils and Fats, Waxes and Lubricants
Dr. Kedar S. Kulkarni	Textile Chemistry	Textile Chemistry
Dr. M. A. K. Kerawala	General Engineering	General Engineering
Dr. Nabanita Sadhukhan	Organic Chemistry, Dyestuff technology	Organic Chemistry, Dyestuff technology
Dr. Neetu Jha	Physics	Physics
Dr. P.G. Goswami	General Engineering	General Engineering
Dr. R.D. Kale	Textile technology	Textile technology
Dr. R.D.Jain	Chemical Engineering	Chemical Engineering
Dr. Rashna Giara	Industrial management & HRM	Industrial management & HRM
Dr. S. Garimella	Material Engineering	Material Engineering
Dr. Sachin Jadhav	Chemical Engineering	Chemical Engineering
Dr. Shamlan M.S Reshamwala	Biotechnology	Biotechnology

Dr. Sitaram Dixit	Cosmetics, Aroma Therapy	Cosmetics, Aroma Therapy
Dr. Surajit Some	Organic Chemistry, Dyestuff technology	Organic Chemistry, Dyestuff technology
Dr. Usha Sayed	Textile Chemistry	Textile Chemistry
Dr. V.H.Dalvi	Chemical Engineering	Chemical Engineering
Prof. A.B. Pandit	Chemical Engineering	Chemical Engineering
Prof. Amit Pratap	Technology of Oils and Fats, Waxes and Lubricants	Technology of Oils and Fats, Waxes and Lubricants
Prof. Anand Patwardhan	Chemical Engineering	Chemical Engineering
Prof. B. M. Bhanage	Organic Chemistry	Organic Chemistry
Prof. Dilip Bedekar	Flavour chemistry	Flavour chemistry
Prof. Ganapati D Yadav	Green chemistry and chemical engineering	Green chemistry and chemical engineering
Prof. Ganapati S. Shankarling	Dyestuff Technology	Dyestuff Technology
Prof. Laddha Kiritkumar Shivchandraji	Extraction, Isolation, Chemical modification and characterization of phytoconstituent	Extraction, Isolation, Chemical modification and characterization of phytoconstituent
Prof. Nagaiyan Sekar	Dyestuff Technology	Dyestuff Technology
Prof. P.D. Vaidya	Chemical Engineering	Chemical Engineering
Prof. P.R.Vavia	Pharmaceutical Technology	Pharmaceutical Technology
Prof. Parag Gogate	Chemical Engineering	Chemical Engineering
Prof. Prakash M. Bhate	Organic Chemistry, Dyestuff technology	Organic Chemistry, Dyestuff technology
Prof. Pushpito K Ghosh	Chemical Engineering	Chemical Engineering
Prof. Ravindra Kulkarni	Oils, oleochemicals and surfactants	Oils, oleochemicals and surfactants
Prof. Ravindra V. Adivarekar	Textile Chemistry	Textile Chemistry
Prof. S. S. Bhagwat	Chemical Engineering	Chemical Engineering

Prof. Shreerang V. Joshi	Pharmaceutical Technology	Pharmaceutical Technology
Prof. Uday S. Annapure	Food Chemistry	Food Chemistry
Prof. V. D. Deshpande	Physics	Physics
Prof. Vijay Y Sane	Dyestuff Technology	Dyestuff Technology
Prof. Virendra K Rathod	Chemical Engineering	Chemical Engineering

4.2.2 Faculty Research Publication (10) Institute Marks (10)

Institute Marks (10)

Name of the faculty	Academic Research							
	Number of quality publications in refereed/SCI Journals, citations, Books/Book Chapters etc.				Ph.D. guided /Ph.D. awarded during the assessment period while working in the institute			
	2020-21 (CAYm0)	2019-20 (CAYm1)	2018-19 (CAYm2)	2017-18 (CAYm3)	2020-21 (CAYm0)	2019-20 (CAYm1)	2018-19 (CAYm2)	2017-18 (CAYm3)
Dr. Satyajit Saha	6	4	2	1	0	1	0	0
Dr. Archana Kalekar	1	2	0	0	0	0	0	0
Dr. Ashwin Mohan	0	1	0	2	0	0	0	0
Dr. Chandu Madankar	6	0	0	0	0	0	0	0
Prof. D.D.Sarode	2	2	1	0	0	0	0	0
Dr. Deepak Vithhal Pinjari	8	10	12	7	0	0	0	0
Dr. Jyotsna Sanjeev Waghmare	1	1	2	3		2	1	0
Dr. Kedar S. Kulkarni	5	0	0	0	0	0	0	0
Dr. M. A. K. Kerawala	0	0	0	0	0	0	0	0

Dr. Nabanita Sadhukhan	0	0	0	0	0	0	0	0
Dr. Neetu Jha	7	9	11	6		2	2	0
Dr. P.G. Goswami	1	2	0	0	0	0	0	0
Dr. R.D. Kale		36	8	1		4	1	0
Dr. R.D.Jain	24	20	8	8	0	3	1	1
Dr. Rashna Giara	0	0	0	0	0	0	0	0
Dr. S. Garimella	0	0	0	0	0	0	0	0
Dr. Sachin Jadhav	1	2	10	0	0	0	0	0
Dr. Shamlan M.S Reshamwala	2	7	0	1	0	0	0	0
Dr. Sitaram Dixit	0	0	0	0	0	0	0	0
Dr. Surajit Some	10	4	3	2		3	0	0
Dr. Usha Sayed	5	1	0	2	0	0	0	0
Dr. V.H.Dalvi	7	5	3	2	0	0	0	8
Prof. A.B. Pandit	14	20	11	20	3	5	2	3
Prof. Amit Pratap	13	4	4	7		3	2	3
Prof. Anand Patwardhan	2	2	3	4		2	2	4
Prof. B. M. Bhanage	25	22	35	25		3	4	2
Prof. Dilip Bedekar	0	0	0	0	0	0	0	0
Prof. Ganapati D Yadav	22	18	36	28	2	3	6	6
Prof. Ganapati S. Shankarling	5	8	18	15		1	5	2

Prof. Laddha Kiritkumar Shivchandraji	0	0	0	0	0	0	0	0
Prof. Nagaiyan Sekar	7	52	53	41		4	8	10
Prof. P.D. Vaidya	5	8	11	9	0	2	5	9
Prof. P.R.Vavia	9	5	3	7		7	2	2
Prof. Parag Gogate	49	24	27	31	4	4	1	3
Prof. Prakash M. Bhate	1	0	0	2	1	1	2	1
Prof. Pushpito K Ghosh	2	0	10	10	0	0	0	0
Prof. Ravindra Kulkarni	5	0	5	3	0	0	0	2
Prof. Ravindra V. Adivarekar	11	19	5	7		8	2	1
Prof. S. S. Bhagwat	5	0	0	1	0	2	2	3
Prof. Shreerang V. Joshi	0	0	0	0	0	0	0	0
Prof. Uday S. Annapure	25	5	10	14		2	2	3
Prof. V. D. Deshpande	3	2	5	3		0	1	0
Prof. Vijay Y Sane	0	0	0	0	0	0	0	0
Prof. Virendra K Rathod	23	25	25	23	1	4	6	6

4.2.3 Faculty Development work (10)

Institute marks (10)

Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, Faculty members need to innovate and conduct research for their self-renewal, keep abreast with changes in technology, and develop expertise for effective implementation of curricula. They are also expected to provide services to the industry and community for understanding and contributing to the solution of real life problems in industry. Another role relates to the shouldering of administrative responsibilities and co-operation with other Faculty, Heads-of-Departments and the Head of Institute. An effective performance appraisal system for Faculty is vital for optimizing the contribution of individual Faculty to institutional performance. Faculty members regular undergo subject training, pedagogical training and management training conducted by UGC, ASC, TEQIP, AICTE, DST-SERC and other agencies. Apart from the trainings, they are actively involved in online course designs, short term certificate courses and technological event managements. Participation of faculty members in the faculty development programs.

Name of Faculty	Title	Conducted /Participated in Symposia/Seminar/Conference /Workshop	Place
2022-2021			
Dr. Satyajit saha	Unraveling the luminogenic property of furan biomolecular engineering to develop multifunctional AIEgens for application in TNP sensing and Cell imaging	2nd commonwealth chemistry posters-Building Networks to address the goals, RSC	virtual mode
Dr. Satyajit saha	Refresher course in Chemistry	HRDC, Mumbai University	Virtual mode
2020-2021			
Dr. Satyajit saha	Unravelling the luminogenic property of Furan by Molecular Engineering to develop multifunctional AIEgens for application in TNP sensing and Cell-imaging	8th Interdisciplinary Symposium on Materials Chemistry (ISMC-2020), DAE-BRNS	Webex platform
Dr. Satyajit saha	Industry Readiness Programme	Co-ordinator of half-day workshop	
Dr. Satyajit saha	Design and development of axially chiral Bis(Naphthafuran) luminogens as fluorescent probe for cell-imaging	Oral Presentation, ICS, IISER Kolkata	Virtual mode
Dr. Satyajit saha	Online Examination Reforms Training workshop	NPIU, MHRD	

Dr. Satyajit saha	Environmentally benign scalable synthesis of 2,3-dihydroquinazolin-4(1H)-one under ball milling	Oral Presentation, IOCSRT-2020, Punjab University	Google meet
Dr. Satyajit saha	Rationally Designed Furocarbazoles as Multifunctional Aggregation Induced Emissive Luminogens for the Sensing of Trinitrophenol (TNP) and Cell-imaging	Oral Presentation, Recent Advances in Chemistry & Material Sciences (2020), Seminar-III", Kolkata	Google meet
Dr. Satyajit saha	Tröger's Base Functionalized Recyclable Porous Covalent Organic Polymer (COP) for the Dye Adsorption from Water	Poster presentation, Indian Chemical Society Research Excellence Award in the Poster presentation at "Recent Advances in Chemistry & Material Sciences (2020), Seminar-II, Kolkata	Google meet
Dr. Satyajit saha	Rationally Designed Multifunctional AIEgens For the Selective Sensing Of Trinitrophenol (TNP) And Cell-Imaging	Oral presentation in International Webinar on "Recent Advances in Science and Technology during the Coronavirus Pandemic-2020, BIT Mesra, Ranchi, India	virtual mode
Dr. Satyajit saha	Rationally Designed Furocarbazoles as Multifunctional Aggregation Induced Emissive Luminogens for the Sensing of Trinitrophenol (TNP) and Cell-imaging	Oral presentation in a webinar VirtCon 2020	Zoom meeting
Dr. Nabanita Sadhukhan	TRAINING CUM WORKSHOP ON ESSENTIAL OIL, PERFUMERY & AROMATHERAPY, 16 th February	Fragrance and Flavour Development Centre, Ministry of MSME, Govt. of India, Kannauj-209726, India	Zoom Meeting
Dr. Nabanita Sadhukhan	Organized Women in STEM ght Organized	Convener, ICT and UGC-FRP, Mumbai, India	Zoom meeting

	"Women in STEM: Academia to Industry" (five days)		
2019-2020			
Dr. Satyajit saha	NAAC Awareness Quiz"-2020	Participation certificate, Dr. Babasaheb Ambedkar Technological University, Lonere	Virtual mode
Dr. Satyajit saha	"Multifunctional AIEgens based on furocarbazoles for the selective detection of TNP and cell-imaging"	1 st prize in poster presentation, "Innovation, Expansion, Impacts and Challenges in Chemical and Biological Sciences", Surendranath College, Kolkata	Virtual mode
Dr. V. H. Dalvi	Fundamentals of Molecular Simulations	Seminar at Centre of continuing education, IIT Kanpur	Kanpur
Dr. V. H. Dalvi	Machine Learning with Business Applications	Workshop at DCAL, IIM Bangalore	Bangalore
Prof. A. V. Patwardhan	Python and Machine Learning	Workshop by TEQIP	ICT, Mumbai
Prof. P. R. Gogate	Improved wastewater treatment using hydrodynamic cavitation	Training	Lviv Polytechnic, Lviv, Ukraine
2018-2019			
Prof. S.S. Bhagwat	National Institute of Educational Planning & Administration	NIEPA	University of Oxford
Prof. S.S. Bhagwat	International Conference on Energy and Environment	keynote speaker at International Conference on Energy and Environment, January 4 th ,2019	VIT,Pune
Prof. S.S. Bhagwat	Interfacial Science & Engineering: Basics and Applications	Invited as speaker for Research seminar on Interfacial Science & Engineering: Basics and Applications March 4 th ,2019	Ahmedabad University,Gujr at.
Prof. S.S.	Environment and Green Technology for Sustainable	keynote speaker for National	Pune

Bhagwat	Development	seminar on" Environment and Green Technology for Sustainable Development, January 18-19,2019	
Prof. S.S. Bhagwat	Energy and Exergy Engineering	Delivered a lecture on "Energy and Exergy Engineering,	KLES Science & Commerce College
Prof. S.S. Bhagwat	Importance of Sciences in Engineering	Invited to talk on Importance of Sciences in Engineering	Don Bosco Institute of Technology
Prof. P.K. Ghosh	Eye on Green Technology, International Conference on Green Methods for Separation, Purification and Nanomaterial Synthesis (GMSP&NS-2018)	Invited as Lecturer, April 24-25, 2018	Jain University, Bengaluru
Prof. P.K. Ghosh	Illustrations of Opportunities to Convert Waste into Value	ICC Seminar on Wealth from Waste, April 27, 2018	Ankleshwar, Gujarat
Prof. P.K. Ghosh	innovative solutions to problems of industrial and societal relevance	Farewell Seminar in honour of Professor P. M. Bhate, 28 October, 2018.	Matunga
Prof. P.K. Ghosh	Discovery of Cozaar, Losartan Potassium Salt at DuPont	Conference on an Interdisciplinary Approach from Fundamental Sciences to Translational Medicine, 9 January, 2019	St. Xavier's College, Mumbai,
Prof. P.K. Ghosh	how SMEs can partner and benefit from the expertise	Seminar on Technology options for sustainable growth of Indian chemical industry, Feb 9,2019	UAA Ahmedabad
Prof. P.K. Ghosh	Practical applications of Forward Osmosis with eye on energy conservation	National Conference on Novel Chemical Systems for Therapeutic and Energy Applications (NCSTEA-2019), 1 March 2019	Anand, Gujarat
Prof. P.K. Ghosh	Technology pull and technology push are both important	ChemProtech India / Chemspec India 2019, April 17, 2019	CSIR-CSMCRI, Bhavnagar

Prof. P.R. Gogate	Chemical Reaction Engineering	Training program for Field officers of Maharashtra Pollution Control Board September 2018	-
Prof. P.R. Gogate	Process Calculations, Distillation & Extraction, Crystallization & Filtration	Invited Faculty in Refresher course on Chemical Engineering organized by Indian Chemical Council October 2018	Ranipet, TN
Prof. P.R. Gogate	Combining oxidants with Cavitation Technologies for Process Intensification	talk at workshop organized by Evonik, November 2018	-
Prof. P.R. Gogate	Hydrodynamic cavitation for wastewater treatment	Invited Lecture in School on Advanced Oxidation Processes, November 2018	BITS, Goa,
Prof. P.R. Gogate	Cavitation Technologies for Wastewater treatment”, Invited lecture organized by MITCOE	Invited lecture organized by MITCOE, December 2018	Alandi, Pune
Prof. P.R. Gogate	Chemical Reaction Engineering	Invited Faculty in Refresher course on Chemical Engineering organized by Indian Chemical Council, February 2019	Mumbai
Prof. P.R. Gogate	Process Intensification using Cavitational reactors	Invited lecturer, February 2019	Kurukshetra University
Prof. P.R. Gogate	Process Calculations, Chemical Reaction Engineering, Distillation & Extraction, Crystallization & Filtration	Invited Faculty in Refresher course on Chemical Engineering organized by Indian Chemical Council, March 2019	Southern Regional Center, Cuddalore, TN
Prof. P.R. Gogate	Sono-crystallization	Industrial training program on crystallization, March 2019	Cipla, Mumbai
Dr. R.D. Jain	Advances in Technology and Business Potential of New Drug Delivery Systems	17th International Symposium organized by Controlled Release Society-Indian Chapter(CRS-IC), February 2019	The Lalit, Mumbai
Dr. R.D. Jain	Polyrotaxane: Cyclodextrin Based Supramolecular	Poster Presentation at Controlled	The Lalit,

	Assembly	Release Society -Indian Chapter 2019	Mumbai
Dr. R.D. Jain	Fabrication and characterization of starch-TPU based nano fibers for wound healing applications	Poster Presentation at 17th International Symposium on Advances in Technology and Potential of New Drug Delivery Systems, Controlled release society-Indian Chapter 2019	The Lalit, Mumbai
Dr. R.D. Jain	Production of uniform insulin crystals using hydrodynamic flow focusing device for sustained release	Poster Presentation at 17th International Symposium on Advances in Technology and Potential of New Drug Delivery Systems, Controlled release society-Indian Chapter 2019	The Lalit, Mumbai
Dr. R.D. Jain	Colorimetric point-of-care detection of cholesterol using chitosan nanofibers	Poster presentation at CRS-IC 2019	The Lalit-Mumbai, India
Dr. R.D. Jain	Synthesis of Zinc oxide Nanostructures using orange peel oil and their incorporation in composite films with Chitosan	Poster presentation at 17th International Symposium of Controlled Release Society - Indian Chapter	The Lalit, Mumbai
Dr. R.D. Jain	Evaluation of novel probiotic composition in Oral health	Poster Presentation at CRS Mumbai Chapter, February 2019	The Lalit, Mumbai
Dr. R.D. Jain	Continuous synthesis of trimethyl chitosan/palladium nano particles as potential anti-cancer therapy	Presentation at 17th International Symposium of Controlled Release Society, February 2019	The Lalit, Mumbai
Dr. R.D. Jain	Production of High Titre Recombinant Monoclonal Antibody against TNF- α	Poster presentation at BPI, 9-10 September 2018	Indian Institute of Technology-Delhi,
Dr. R.D. Jain	Optimization of Process Parameters to Maximize Antibody Production Using Design of Experiments	Poster Presentation at Bioprocessing India, 14-16 December 2018	Indian Institute of Technology, Delhi, India

Dr. R.D. Jain	Optimization of Process Parameters to Maximize Antibody Production Using Design of Experiments	Poster Presentation at Bioprocessing, 14-16 December 2018	Indian Institute of Technology, Delhi, India.
Dr. R.D. Jain	Chitosan based coprocessed excipients for improved tableting	Seminar at Wadhvani Research Center for Bioengineering, November 20, 2018	IIT, Mumbai
Dr. R.D. Jain	Development and evaluation of artificial skin using microfluidics for preclinical	Poster presentation at 3rd WRCB, November 20, 2018	Indian Institute of Technology Bombay, Mumbai
Dr. R.D. Jain	Green Synthesis of Silver Nanoparticles and its Biomedical Application	Poster presentation at BESCON, October 2018	Indian Institute of Technology- Mumbai
Dr. R.D. Jain	Continuous synthesis of tri-methyl chitosan/ palladium nano-particles as potential anti-cancer therapy	Poster Presentation at Conference BESCON-2018, 26-27 Oct 2018	Indian Institute of Technology Bombay, India
Dr. R.D. Jain	Process development for producing uniform insulin crystals using microfluidic device,	Poster Presentation at Biological Engineering Society Conference 2018, 26-27 Oct 2018	Indian Institute of Technology, Bombay
Dr. R.D. Jain	Development and characterization of 3D lung spheroids	Poster Presentation at Biological Engineering Society Conference 2018, 26-27 Oct 2018	Indian Institute of Technology, Bombay
Dr. R.D. Jain	Tackling tuberculosis infection in macrophages using chitosan oligosaccharide nanoplexes	Poster presentation at "Nanobioteck-2018", 24-27 Oct, 2018	All India Institute of Medical Sciences (AIIMS), New
Dr. R.D. Jain	Potential of Polymethylmethacrylate Copolymer for developing microcarriers for mammalian cell culture	Poster Presentation at NanoBioteck 2018, 24-27 Oct, 2018	All India Institute of Medical Science, Delhi

Dr. R.D. Jain	Exploring the Interaction of Chitosan Polymer with Lipid Bilayer For si RNA Delivery	Poster presentation at "Nanobiotech-2018", 24-27 Oct, 2018	All India Institute of Medical Science, New Delhi
Dr. R.D. Jain	Gene silencing using chitosan oligosaccharide-siRNA nanoplexes for alleviating lung diseases	Poster Presentation at SBC Mumbai, September 2018	ICT, Mumbai, India
Dr. R.D. Jain	Gene silencing using chitosan oligosaccharide-siRNA nanoplexes for alleviating lung diseases	Poster presentation at Indian Chitin and Chitosan Meeting, 11-13 October 2018	National Chemical Laboratory (NCL), Pune
Dr. R.D. Jain	Synthesis of Zinc oxide Nanostructures using orange peel oil and their incorporation in composite films with Chitosan	Poster presentation at 7th Indian Chitin and Chitosan Society Meeting, 11-13 October 2018	CSIR-NCL Pune, India
Dr. R.D. Jain	The indispensable role of proton balance in the formation of self-assembled chitosan nanoparticles for siRNA delivery	Poster presentation at 7th Indian Chitin and Chitosan Society Meeting, 11-13 October 2018	CSIR-NCL Pune
Dr. R.D. Jain	Chitosan based microcarriers for potential large-scale culture of mammalian cells	Poster presentation at 7th Indian Chitin and Chitosan Society Meeting 11-13 October 2018	CSIR-NCL, Pune
Dr. R.D. Jain	Hydrodynamic flow focusing for producing uniform insulin crystals giving sustained release	Poster Presentation at 1st Controlled Release Asia meeting 24-25 September 2018	Biopolis, Singapore
Dr. R.D. Jain	Elucidating the uptake kinetics of chitosan nanoparticles for siRNA delivery	Poster Presentation at 1st Controlled Release Asia meeting 24-25 September 2018	Biopolis, Singapore
Dr. R.D. Jain	Split and Recombine Micromixer based continuous Synthesis of Chitosan Nanoparticles	Oral Presentation at Microfluidics and Lab on a Chip conference, SELECTBIO, March 2019	Mumbai
Dr. R.D. Jain	FDM 3D printing as a tool for rapid prototyping and manufacturing of controlled release tablets	Poster presentation at 17th Controlled release society-Indian	The Lalit, Mumbai

		chapter, February 2019	
Dr. R.D. Jain	Society of biological chemist	Society of biological chemist Seminar	-
Dr.S.V. Jadhav	Enhancing Accountability and Responsiveness in Scientific Organisations	TEQUIP III, 11 – 15 March 2019	Osmania University, Hyderabad
Dr. Jyotsna Waghmare	Lipids as Phase Changing Material in Solar Thermal Energy Storage	AICTE STTP on Solar Energy, March 31, 2018	SGGS Institute of Engg & Tech, Nanded
Prof. A.B. Pandit	Sustainable Waste Management: Municipal Solid Waste and e-Waste	IGCS Winter School, 2019	at IIT Madras
Prof. A.B. Pandit	Groundnut shell Biochar-Production, characterization, and study of its interactive mechanism with crop fertilizer	2 nd International Conference on Bioresources, Energy, Environment & Materials Technology, 2018 10-13 June	Gangwon Province, South Korea
Prof. A.B. Pandit	A two stage treatment of alkyd resin wastewater: Hydrodynamic cavitation followed by Peroxane process in gas inducing reactor	DAE BRNS 8 th Biennial Symposium on emerging trends in Separation Sciences and Technology, 23-26 May 2018	BITS-Pilani-Goa
Prof. A.B. Pandit	INAE DST initiative on Laboratory safety and hazardous waste management	Lecture at Indian Institutes of Science Education and Research (IISER)	Pune
Prof. A.B. Pandit	Process Intensification Strategies for Chemical Industry	ICT-UAA Silver Jubilee Seminar, February 2018	Ahmadabad
Prof. A.B. Pandit	Intensification of intracellular enzyme recovery	Key note Speaker at 'ACES-2019'	IISER Bhopal
Prof. A.B. Pandit	National Opportunities for Chemical Engineers	Key note Lecture, CHEMIX 2019	VNIT Nagpur
Prof. A.B. Pandit	Laboratory Safe Practices and Waste Disposal in Academic and R & D Institutes	Invited Talk at 'INAE-DST'	Savitribai Phule Pune University, Pune

Prof. A.B. Pandit	Engg. Design and Scale up of Crystallization	Key note speaker at 12th International Workshop on Crystallization, Filtration, Drying – WFCFD	-
Prof. A.B. Pandit	Integration of Sustainability Concepts in Chemical Engineering Education	Workshop organized in collaboration with WIPRO Foundation	-
Prof. A.W. Patwardhan	CFD Modeling for Reactor Design	Symposium on Chemical Reaction Engineering 17-18 December 2018	NCL, Pune
Prof. A.W. Patwardhan	Synthesis of boron doped carbon nanotubes using floating catalyst chemical vapor deposition	Second International Conference on Nano Science and Engineering Applications ICONSEA, 4-6 October 2018	JNTU-Hyderabad
Prof. A.W. Patwardhan	Synthesis of high aspect ratio graphene oxide sheets using one pot electrochemical exfoliation	Conference on Nano Science and Engineering Applications ICONSEA-2018, 4-6 October 2018	JNTU-Hyderabad
Prof. A.W. Patwardhan	Numerical Simulations of the Gas-Liquid two phase flow using population balance modelling in Vertical Pipe	16th Multiphase flow conference	Dresden, Germany
Prof. A.W. Patwardhan	Sensitivity Analysis for CFD Simulations of Randomly Arranged Packed Beds of Spheres	12th International Conference on Complex Fluids and Soft Matter, 6-9 December 2018	IIT-Roorkee
Prof. A.W. Patwardhan	Experimental and Computational Studies for Two Phase Flow Pressure Drop in Vertical Tube Boiling	7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP), 10-12 December	IIT-Bombay, Mumbai
Prof. A.W. Patwardhan	Direct Numerical Simulation for comparison of Flow Structures in Three-Dimensional Wake Flow	7th International and 45th National Conference on Fluid Mechanics and Fluid Power (FMFP), 10-12 December	IIT-Bombay, Mumbai
Prof. A.W.	New methodology for modeling pressure drop and	National Conference on Critical	IIT-BHU,

Patwardhan	thermal hydraulic characteristics in long vertical boiler tubes at high pressure	Heat Flux and Multiphase Flow	Varanasi
Prof. A.W. Patwardhan	Thermal Hydraulics Study of High Pressure Flow Boiling in Vertical Tube	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018), 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Residence Time Distribution Studies in Multi-stage Extraction Column	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Comparison of the Turbulence Models for Flow Fields Prediction of the Jet Flow Decay	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Mathematical Modeling of Tea Bag Infusion Kinetics.	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Numerical Simulations of the Slug Flow for the Air-Water Two Phase Flow System in Vertical Pipe	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Single step Electrochemical Exfoliation of Graphite: Synthesis, Optimization and Characterization.	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Synthesis of boron doped carbon nanotubes and study of variation in boron concentration	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W.	Hydrodynamics of asymmetric rotating agitated	71th Annual Session of Indian	NIT-Jalandhar

Patwardhan	extractor: Investigation of drop size , holdup and mass transfer	Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	
Prof. A.W. Patwardhan	Direct Numerical Simulation for External and Internal Flows in Open FOAM	71th Annual Session of Indian Institute of Chemical Engineers, (CHEMCON-2018) 27-30 Decemeber	NIT-Jalandhar
Prof. A.W. Patwardhan	Mathematical Modeling of Tea Bag Infusion Kinetics.	2nd International Conference on Engineering Future Food, (EFF2019), 26 – 29 de maio de 2019	Bologna, Italy
Prof. A.W. Patwardhan	CFD PBM simulations of asymmetric rotating impeller column,	14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering(GLS-14) 30 may-3 june, 2019	Guilin, China
Prof. A.W. Patwardhan	Direct Numerical Simulation (DNS) to Investigate the Effect of Schmidt Number on Mass Transfer through Packed Beds	14th International Conference on Gas-Liquid and Gas-Liquid-Solid Reactor Engineering(GLS-14) 30 may-3 june, 2019	Guilin, China
Prof. A.V. Patwardhan	Cleaning of polyamide nanofiltration membranes: Comparison between conventional and ultrasound-assisted technology	Paper presented at 1 st International Conference Materials & Environmental Science(ICMES), 18-20 December 2018	Kolhapur, Maharashtra
Prof. A.V. Patwardhan	COD reduction of industrial effluent by polyamide nanofiltration membranes	Paper presented at 1 st International Conference Materials & Environmental Science(ICMES), 18-20 December 2018	Kolhapur, Maharashtra
Prof.A.V. Patwardhan	Safety Week	Safety Week Workshop	ICT Mumbai
Dr. P.D. Vaidya	Distillation & Absorption	11 th International Conference on	Florence

		Distillation & Absorption, September 16-19, 2018	
Dr. P.D. Vaidya	Hydrogen & Fuel Cell	7 th International Hydrogen & Fuel Cell Conference (IHFC – 2018), , December 9-11, 2018,	Jodhpur
Dr. P.D. Vaidya	Orientation to Chemical Safety and Risk Management	Sandia National Laboratory's Workshop	ICT, Mumbai.
Prof (Dr). Ravindra D. Kale	An Odyssey with Technical Textiles	Texas Tech University, USA, 20 th February 2018	ICT, Mumbai
Prof (Dr). Ravindra D. Kale	Woolmark Wool Education Course	SEAM CONSULTING GROUP, 12 th March 2018	ICT, Mumbai
Prof (Dr). Ravindra D. Kale	textile 4.0 Global and Indian Perspective	The Textile Association, 22 nd and 23 rd March 2018	Hotel The Lalit, Andheri (E), Mumbai
Prof (Dr). Ravindra D. Kale	Research Methodology for Engineering Management Research	AICTE	VJTI, Matunga
Prof. V.K. Rathod	Application of Enzyme for conversion of Biomass in to value added product	Keynote Lecture	Rowan Universi ty, USA
Prof. V.K. Rathod	'Utilization of solid waste from Food Industry for value added products' and 'Utilization of liquid waste from Food Industry for value added products'	Keynote Lecture, 2018	North Maharashtra University Jalgaon
Dr. Satyajit Saha	International convention on colorants (COC)	Department of Dyestuff Technology, 28 th Feb to 1 st March 2019	The Club, Andheri
Dr. N. sekar	International convention on colorants (COC)	Department of Dyestuff Technology, 28 th Feb to 1 st March 2019	The Club, Andheri
2017-2018			

Dr. Jyotsna Waghmare	Lecture on Wonderland of Oils and fats	SNDT, Juhu, 22 Jan 2018	OTAI , MPOC & SNDTWU
Dr. Jyotsna Waghmare	Workshop on Creative and Formulation of Natural and Organic Cosmetics	Courtyars by Marriot Mumbai, 28th-29th November 2018	ISCC
Dr. S. B. Joshi	Workshop organized on " Improving communication Interpersonnal skills and time management w.r. t. Pharma Industry	Application on Thermal Analysis in Pharma Industry, 19/03/2018 to 21/03/2018	-
Dr. S. B. Joshi	Hands on training on Animal cell culture and molecular techniques using the human/ cancer cell lines for various expts	Attend Cell culture Workshop at International Center for Stem Cells, Cancer andBiotechnology, 16/07/2018 to 22/07/2018	Pune
Dr. S. B. Joshi	Two days International workshop on Quality by design Practicle Implementation of Tools &Tractics of QbD & L6 in Pharma Product Development	Learn the basic of QbD, 12/10/2018 to 13/10/2018	-
Dr. Uday S. Annapure	Effect of various processing method on antinutritional factors and protein and starch digestibility of varieties of pigeon pea dhal	26 th Indian Convention of Food Scientists and Technologists, December 7-9, 2017	Hyderabad
Dr. Uday S. Annapure	S o y m i d a f e b r i f u g a exudates gum an encapsulating agent	26 th Indian Convention of Food Scientists and Technologists, December 7-9, 2017	Hyderabad
Dr. Uday S. Annapure	Bioactive properties of oil extracted from Coconut Testa	26 th Indian Convention of Food Scientists and Technologists, December 7-9, 2017	Hyderabad
Dr. N. Sekar	Participated in Teaching- Learning	Workshop, 24th Sept, 2016	ICT, Mumbai
Dr. N. Sekar	NLOphoric organic Molecules - structural Diversities	International conference on pure and Applied chemistry, 18-22 July 2016	Mauritius
Dr. N. Sekar	Sharing of Innovative ideas and Achievements of	Siddaganga Institute of	Tumakuru

	centers of Excellence	Technology, April 2016	
Prof. A.V. Patwardhan	Synthesis and characterization of ultrafiltration ceramic membranes using solid spent material doped in α -alumina from chemical industries	Recent Trends on Membranes and Separation Technology (RTMST-17) Workshop, November 22-23, 2017	CSMCRI, Bhavnagar
Prof. A.V. Patwardhan	Synthesis and Characterization of Microfiltration Ceramic Membranes: Re-use of Industrial Solid Spent Materials	Poster presentation on Recent Trend and Developments in Environmental and Basic Sciences (RTDEBS 2018), 10th March 2018	S.D.D. Arts College, Wada, Thane
Prof. A.V. Patwardhan	Synthesis and characterization of ultra-filtration ceramic membranes using solid spent material doped in alpha alumina from chemical industries	Paper presented at DAE – BRNS Biennial “Symposium on Emerging Trends in Separation Science and Technology (SESTEC –2018), May 23-26, 2018	BITS Pilani, K.K. Birla Goa
Prof. A.V. Patwardhan	Development of grafted resins and membranes (extractants) for precious metals	CHEMIX-18, April 7-8, 2018	VNIT, Nagpur
Prof. A.V. Patwardhan	Synthesis and characterization of ultra-filtration ceramic membranes using solid spent material doped in alpha alumina from chemical industries	Paper presented at DAE –BRNS Biennial Symposium on Emerging Trends, May 23-26, 2018	BITS Pilani, K.K. Birla Goa
Prof. A.V. Patwardhan	Application of ceramic membranes in treating laundry wastewater	Paper presentation at Outstanding Young Chemical Engineers (OYCE), 24 March 2018	Mumbai
Prof. A.V. Patwardhan	Application of ceramic membranes in treating laundry wastewater	Paper presentation at Outstanding Young Chemical Engineers (OYCE), 24 March 2018	Mumbai
Prof. A.W. Patwardhan	Controlling the carbon nanotubes type with processing parameters from floating catalyst chemical vapor deposition synthesis	International Conference on Nanotechnology	IIT Roorkee
Prof. A.W.	Synthesis of modified carbon nanotubes	International Conference on	IIT Roorkee

Patwardhan		Nanotechnology	
Prof. A.W. Patwardhan	Flow Patterns, Flow Pattern Map And Void Fraction Measurement Of Air/ Water Two Phase Flow In Vertical Pipe	National Conference on Fluid Mechanics and Fluid Power	Amrita University, Kerala
Prof. A.W. Patwardhan	Design and Scale-up of Asymmetric Rotary Agitated Liquid – Liquid Extraction Columns, Eighth Biennial Symposium On Emerging Trends In Separation Science And Technology	SESTEC – 2018	BITS Goa
Prof. A.W. Patwardhan	Hydrodynamic Characteristics between Pulsed Disc and Doughnut Column and Asymmetric Rotating Impeller Column	Eighth Biennial Symposium On Emerging Trends In Separation Science And Technology, SESTEC – 2018	BITS Goa
Prof. A.W. Patwardhan	CFD-PBM Simulations of Asymmetric Rotating Impeller Column	Eighth Biennial Symposium On Emerging Trends In Separation Science And Technology, SESTEC – 2018	BITS Goa
Prof. A.W. Patwardhan	Synergistic Behavior of Tri-butyl Phosphate and Di-(2-ethylhexyl) Phosphoric Acid	Eighth Biennial Symposium On Emerging Trends In Separation Science And Technology, SESTEC – 2018	BITS Goa
Prof. A.W. Patwardhan	Recovery of Lithium from Sea Water Bitterns by Liquid – Liquid Extraction	Eighth Biennial Symposium On Emerging Trends In Separation Science And Technology, SESTEC – 2018	BITS Goa
Prof. V.K. Rathod	Application of Enzyme for conversion of Biomass in	Guest lecturer	Rowan

	to value added product		University, USA
Prof. V.K. Rathod	Heat Transfer and its application in heat exchanger design	BPCL Training program, 2017	Mumbai
Prof. V.K. Rathod	Utilization of solid waste from Food Industry for value added Products & Utilization of liquid waste from Food Industry for value added products	Guest lecture	North Maharashtra University Jalgaon
Prof . V.K. Rathod	American Chemical Society School -Festival	Workshop	-
Prof. P. R. Gogate	Hydrodynamic cavitation for Wastewater treatment	Invited for presentation, November 2017	Saudi Arabia
Prof. P. R. Gogate	Intensified Hybrid oxidation processes based on hydrodynamic cavitation for treatment of emerging contaminants	Invited Lecture at AOSS-3, September 2017 Invited Lecture at AOSS-3, 14-16 September 2017	SRM University
Prof. P. R. Gogate	Cavitation Reactors	Annual Convention of Marathi Vidnyan Parishad, December 2017	Kudal, Maharashtra
Prof. P. R. Gogate	Intensification of Chemical processing applications using Cavitation Reactors	Invited Lecturer	PREC, Loni
Prof. P. R. Gogate	Intensified Production of Biofuels from Sustainable Raw Materials using Ultrasonic Reactors	Invited Lecture at the Indo- Japan Bilateral Symposium, 1-4 February 2018	IIT-Guwahati
Prof. P. R. Gogate	crystallization using ultrasonic irradiation	Invited lecture at WFCFD, February 2018	ICT Mumbai
Prof. P. R. Gogate	Process Intensification of Chemical Processing applications using cavitation reactors	Tantr Avishkar 2018	TSEC, Mumbai
Prof. P.D. Vaidya	6th International Conference on Hydrogen and Fuel Cells	6th International Conference on Hydrogen and Fuel Cells, Dec. 10-12, 2017	Pune

Prof. P.D. Vaidya	Orientation to Chemical Security Risk Management	3-Day Seminar, January 2018	SANDIA National Laboratories (USA)
Dr. R.D. Jain	Evaluation of heat and agitation induced aggregation profile of insulin using biophysical techniques	Poster Presentation at Indian Biophysical Society-2018, 9-13 March 2018	Indian Institute of Science Education and Research (IISER), Pune
Dr. R.D. Jain	Characterization of Serum Nano-particles with Serum Proteins	Poster Presentation at Indian Biophysical Society Annual Meet, 9-13 March 2018	IISER-Pune
Dr. R.D. Jain	Charge based Protein-Nanoparticle Interaction	Poster presentation at CRS- India, February 2018	Mumbai
Dr. R.D. Jain	Salzyme Enzyme mimicking metal salt as an alternative catalyst for organic synthesis	Conference on Advances in Catalysis for Energy and Environment, January 10-12 2018	-
Dr. R.D. Jain	Skinon- a-chip: An alternativeto- animal, 3D in-vitro skin model for preclinical and biomedical applications	Oral Presentation at Microfluidics and Lab, SELECTBIO	Mumbai
Dr. R.D. Jain	Human Skin for Preclinical Chemical, Pharmaceutical and Cosmetic Testing	Poster Presentation at Conference on "India Centric R&D	Indian Chemical Council at Mumbai
Dr. R.D. Jain	Enzyme immobilized chitosanbased nanofibers used for detection of cholesterol	Poster presentation at Nanobioteck-2017 Annual Conference of Indian Society of	Trivandrum, Kerala

		Nanomedicine, 6-8 December 2017	
Dr. R.D. Jain	Deep eutectic solvents as viable reaction media for lipase catalyzed reaction	Poster presentation at Bioprocessing India, 9-11 December 2017	IIT Guwahati
Dr. R.D. Jain	Design, Fabrication and Optimization of microbioreactor for in-vitro development of human skin tissue	Poster Presentation and exhibition at 3 rd TEQIP-INN, March 2017	ICT, Mumbai
Dr. R.D. Jain	Microfluidic platform for the controlled synthesis of polymeric nanoparticles	Poster Presentation at Nano India 2017	IIT, New Delhi, India
Dr. R.D. Jain	Implications for Nano-Biointeractions in Cellular Studies	Poster Presentation At NanoIndia-2017	IIT, New Delhi, India
Prof. Ravindra D. Kulkarni	Lipids as Phase Changing Material in Solar Thermal Energy Storage	AICTE STTP on Solar Energy, March 31,2018	SGGS Institute of Engg & Tech, Nanded
Prof. Ravindra D. Kulkarni	Green Synthesis of Multifunctional Photoinitiators	Plenary Lecture in Two days UGC-SAP Sponsored National Conference ICLS 2018, March5-6 2018	School of Chemical Sciences, North Maharashtra University, Jalgaon, MS
Prof. Ravindra D. Kulkarni	Preparation of High Performance Copper Phthalocyanine Pigment Concentrates and Modelling	National Conference on Trends and Challenges in Architectural	Society for Industrial

	studies	Coatings, Feb,16,2018	Chemistry in association with DPolymer & Surface Engg, ICT, Mumbai
Prof. Ravindra D. Kulkarni	Recent Trends in Science and Technology	Expert Talk, Feb. 02, 2018	AMITY University, Panvel, MS 410206
Prof. Ravindra D. Kulkarni	Nutritional Properties of Palm & Other Oils	Workshop on Palm Oil, Jan.22,2018	SNDT Campus, Juhu, Palm Oil Council, Malaysia& O
Prof. Ravindra D. Kulkarni	Oleochemicals in Food, Polymer and Plastics Industries	Derivatives and Applications, March 16- 17, 2017	OTAI (WZ), India
2016-2017			
Prof A. B. Pandit	The word academy of science (TWAS)	General Meeting	Rwanda, South Africa
Prof A. B. Pandit	15th Meeting of the European Society of Sonochemistry-ESS15	15th Meeting of the European Society of Sonochemistry-ESS15	Istanbul, Turkey
Prof. A. V. Patwardhan	Transport of Ruthenium through Supported Liquid Membrane	International Conference on Membrane Technology and its Applications (MEMSEP 2017), 21-23 February 2017	Tiruchirappalli .
Prof. A. V. Patwardhan	Introduction to Research Approach	4 th INSPIRE Science Camp of DST	G. N. Sapkal College of

		("Innovation in Science Pursuit for Inspired Research),06 to 10 December 2016	Engineering, Nashik
Prof. A. V. Patwardhan	Orientation to Chemical Security Risk Management	The United States Department of State, October 5 to 7, 2016	United States
Prof. A. V. Patwardhan	Materials Characterization	Society of Industrial Chemistry and Chemistry Division, BARC, 2 July 2016	HBNI Complex, BARC, Mumbai
Prof. A. V. Patwardhan	Effluent Treatment and Processing	Seminar by Dyestuff Department, ICT, Mumbai, 14 Sept 2016.	ICT Mumbai
Prof. A. V. Patwardhan	Water: Conservation, Recycling and Desalination	Seminar by Dyestuff Department, ICT, Mumbai, 4 Feb 2017	ICT Mumbai
Prof. A. V. Patwardhan	Advanced Treatment and Recycling of Urban and Industrial Wastewater,	School of Water resources, 6 to 10 March 2017	IIT Kharagpur
Prof. A. V. Patwardhan	Microbial colorants / pigments	Business proposal presented at AXISMOVES-2017, 12 May 2017	Axis Bank, at New Delhi
Prof. A. V. Patwardhan	Microbial colorants/ pigments	Business proposal presented at IIGP-FICCI DST-LOCKHEED Programme, 2017	Stanford Graduate School of Business, Texas
Prof. A. W. Patwardhan	Application of Numerical Heat Transfer to Industrial Problems	CFD Modeling of High Pressure Sub-cooled Boiling Flow in Vertical Tubes, 2017	BARC
Dr. R. D. Jain	Synthesis, Characterization and Cellular Imaging	Hands on Training Workshop on Nano-Drug Delivery System, October 2016	ICT, Mumbai, India
Prof. Ravindra D. Kulkarni	Pressure Driven Membrane Separation Techniques for Drinking Water and Effluent Treatment	MHRD-TEQIP STTP on Hygienic Drinking water, Dec. 20, 2016	SGGS Institute of Engg & Tech, Nanded

Prof. Ravindra D. Kulkarni	Polymorph Selective Synthesis of Nanomaterials and Reactive Crystallisation and Engineering	Joshi Memorial IPI Presentation, March 19, 2016	College of Engineering and Technology, Akola
Prof. Ravindra D. Kulkarni	Surfactant Mediated Polymorph Selective Solution Spray Synthesis of Nanopigments and their Characterisations	National Conference on Synthesis of Nanomaterials, Feb 09, 2016	G.T. P. College (UGC SAP), Nandurbar
Dr. R. D. Jain	International Symposium of the Controlled Release Society-Indian Chapter	International Symposium of the Controlled Release Society-Indian Chapter	ICT, Mumbai
Dr. Amit P. Pratap	Green Functional Fluids from Castor Oil	International Scientific Academy of Engineering & Technology Conferences, April 28-29, 2016	Pattaya (Thailand)
Dr. Amit P. Pratap	Novel/ Advanced Methods of Vegetable Oil Processing	FILTECH, October 11- 13, 2016	Cologne, Germany
Dr. Amit P. Pratap	Biobased Functional Fluid and Lubricants	5th Asian Oleochemicals Conference, January 11 – 12, 2017	Kuala Lumpur, Malaysia
Dr. Amit P. Pratap	Microbial Biosurfactants from Tree Borne Oils	Chemical, Agricultural, Biological and Medical Sciences, January 23-24, 2017	Manila, Philippines
Dr. Amit P. Pratap	Rice Bran Oil and Wax: Healthy and Sustainable Choice for Edible and Industrial Applications	3rd International Conference on Rice Bran Oil (ICRBO 2016), October 24-25, 2016	Tokyo University, Japan
Prof. D. V. Pinjari	Cavitation: a Novel Approach for Process Intensification, in National Conference	National Conference On Recent Trends In Chemical Engineering And Technology (REACT)13-15	Laxminarayan Institute Of Technology (LIT), Nagpur

		Jan 2017	
Prof. D. V. Pinjari	Synthesis of Molybdenum disulphide by using ultrasound and conventional method	National Conference On Recent Trends In Chemical Engineering And Technology (REACT)13-15 Jan 2017	Institute Of Technology (LIT), Nagpur
Prof. D. V. Pinjari	Intensification of Chalcone (3-(4-fluorophenyl)-1-(4-methoxyphenyl) prop-2-en-1-one): Advantage over conventional route (http://www.sciencedirect.com/science/article/pii/S1350417710001847)	National Level Seminar on Recent Trends In Nanomaterial And Their Applications (RTNA) 13-15 Jan 2017	Sangola College, Sangola
Prof. D. V. Pinjari	Acoustic Cavitation as a Novel Approach for Formulation of Paraffin Wax Nanoemulsions, in NANO INDIA	Workshop by Centre for Nanotechnology & Advanced Biomaterials (CeNTAB),	SASTRA University, Thanjavur
Prof. D. V. Pinjari	Doping of N-Octyl Phosphonic acid species on the surface of ultrasonically synthesized Zinc phosphate nano-pigment and its anticorrosive performance in carrier resin at various concentrations	Workshop by Centre for Nanotechnology & Advanced Biomaterials (CeNTAB),	SASTRA University, Thanjavur
Prof. P. K. Gosh	Simple Illustrations of the Interplay between Science and Innovation	National Science Day conference	NCL Pune
Prof. P. K. Gosh	Tapping into the potential of sunshine, wasteland and long coastline of India for renewable energy	National Technology Day conference	Indian Institute of Petroleum, Dehradun
Prof. P. K. Gosh	Innovations around membranes, membrane-based devices and newer application areas	National Conference on Recent Trends on Membranes & Separations Technology (RTMST-	CSIR-CSMCRI, Bhavnagar

		2017)	
Prof. P. K. Gosh	Innovations with an Eye on Superior Products, Greener Process Routes and Utilization of Wasted Resources	United Phosphorous-Chemcon Distinguished Speaker Award	Haldia Institute of Technology
Prof. P. K. Gosh	Crystallization	9 th International Workshop on Crystallization	ICT, Mumbai
Prof. P. R. Gogate	Intensification of Chemical and Physical Processing using cavitation reactors	Guest lecturer, November 2016	KK Wagh College of Engineering, Nashik
Prof. P.R. Gogate	Intensified Delignification and Enzymatic Hydrolysis of Lignocellulosic Biomass with an Objective of Enhancing Biofuel Production	Intensified Delignification and Enzymatic Hydrolysis of Lignocellulosic Biomass with an Objective of Enhancing Biofuel Production, Feb 2017	Bogazici University, Istanbul, Turkey
Prof. P.R. Gogate	Process Intensification using Cavitation Reactors and enzymes	Invited lecture at Faculty of Engineering, March 2017	Minho, Portugal
Prof. P.R. Gogate	Intensification of Chemical processing applications using Cavitation Reactors	Invited lecture at Faculty of Engineering, June 2017	University of Porto, Portugal
Prof. P.R. Gogate	Intensification of Chemical processing applications using Cavitation Reactors	Invited lecture at National workshop, June 2017	AISSMS College of Engineering
Prof. P.R. Gogate	Improved crystallization using ultrasonic irradiation	WFCFD workshop, August 2016	ICT Mumbai
Prof. P.R. Gogate	Improvements in wastewater treatment based on oxidation processes	Indo-German conference, May 2017	Hotel Sheraton, Pune,
Prof. P.R. Gogate	Chemical Reaction Engineering	Refresher course on Chemical Engineering organized by Indian Chemical Council	Mumbai

Prof. P.R. Gogate	Improved wastewater treatment using advanced oxidation processes	Seminar on Solution based awareness on air and water quality	Tarapur MIDC
Prof. P.D. Vaidya	PETROTECH 2016	PETROTECH 2016, December 6-8, 2016	New Delhi
Prof. P.D. Vaidya	Refresher Course in Biotechnology	Refresher Course in Biotechnology, Feb 20 – March 11, 2016	University of Mumbai
Prof. P.D. Vaidya	Biology for Engineers	Short term course, January 2017	CoEP, Pune.
Prof. P.D. Vaidya	Municipal Solid Waste to Energy	Short term course, February 2017	Islampur
Prof. P.D. Vaidya	Labopratory and Ergonomics for Engineers	Short term course, June 12-16, 2017	IIT Mumbai
Prof. P.D. Vaidya	How to overcome challenges in hydrogen production from steam reforming of biomass surrogates	Sustainable Development for Energy and Environment Workshop (ICSDEE-2017)	NCL, Pune
Dr. S. Saha	Pigment Finishing and Printing Technology	Coordinator, Workshop, 13th Sept, 2016	ICT, Mumbai

4.3 Faculty as participants in Faculty development/training activities/STTPs (5)

Institute Marks (5)

Faculty name	Title	Symposia/Seminar	Place	Day
2019-18				
A.B. Pandit	Sustainable waste management: Municipal solid waste and E-waste	IGCS Winter School	IIT Madras	-
A.B. Pandit	Integration of Sustainability concepts in chemical engineering education	WIPRO Foundation Ltd.	-	-
Prof. V. K. Rathod	Training program on “Digital transformation through E-Governance and information and communication technology”	Training at ICT	ICT, Mumbai	5 days
Prof. P. R. Gogate	Training program on “Digital transformation through E-Governance and information and communication technology”	Training at ICT	ICT, Mumbai	5 days
Prof. P. R. Gogate	Sonocrystallization, Industrial training program on crystallization	Cipla, Mumbai	Germany	-
Prof. S. S. Bhagwat	Management Development Programme for Teaching Staff	Faculty Development Programme	ICT, Mumbai	4 days
Prof. S. S. Bhagwat	NIEPA “National Institute of educational planning and administration”	-	oxford	-
Dr. S. V. Jadhav	Enhancing accountability and responsiveness in Scientific organization	Faculty Development Programme	Osmania University, Hyderabad	1 week
Dr. P. D. Vaidya	Participation & oral Presentation titled " Butanol reforming for	Faculty Development Programme	Jodhpur	2 days

	hydrogen production in 7th International Hydrogen & fuel cell conference			
Dr. V. H. Dalvi	The faculty development programme on " Machine Learning with Business Applications" with Primer on Big Data AI & Deep Learning	Faculty Development Programme	ICT, Mumbai	5 days
Prof. A. W. Patwardhan,	Management Development Programme for Teaching Staff	Faculty Development Programme	ICT, Mumbai	4 days
Prof. A. W. Patwardhan,	Professional development training programme	Management Development Programme	IIT Trichy	4 days
Dr. U. Annapure	Food Preservation Techniques	BIRAC, Feb 26-28	ICT, Mumbai	2 days
Prof. G.D. Yadav	HRDC	Mumbai University, 12 Nov-1Dec	-	21 days
Prof. G.D. Yadav	on Identification of Subject Wise Resources for Teachers	NIEPA, 6-8 June	New Delhi	3 days
Prof. G. S. Shankarling	International convention on colorants (COC)	Department of Dyestuff Technology	The Club, Andheri	1 day
Prof. G. S. Shankarling	Dyes Day	Department of Dyestuff Technology	Matunga, Mumbai	1 day
Prof. N. Sekar	Dyes Day	Department of Dyestuff Technology	Matunga, Mumbai	1 day
Dr. S. Saha	Dyes Day	Department of Dyestuff Technology	Matunga, Mumbai	1 day
2018-2017				
Prof. V. K. Rathod	Attended the faculty development programme on " Machine Learning with Business Applications" with Primer on Big Data AI & Deep	Training at ICT	ICT, Mumbai	5 days

	Learning			
Dr. P. D. Vaidya	Participation & oral Presentation titled " Butanol reforming for hydrogen production in 7th International Hydrogen & fuel cell conference	Faculty Development Programme	Jodhpur	2 days
Prof. V. K.Rathod	Participate in the meeting of "Design and Development of a customised ERP system for a group of technical institutes, whose functions are similar in nature under TEQIP-III".	Meeting	NPIU office, New Delhi	1 days
Prof. M.A.K. Kerawalla	National workshop on NBA and NAAC	Universities and Institutions Engineering Faculty Engg, 18-22 July	Lonavala Maharashtra	4 days
Prof. M.A.K. KERAWALLA	Delivered lecture on Electrical Power and fundamentals	Government College of Engineering	Keonjhar	-
Prof. G. S. Shankarling	Coordinator of the Dyes department for the Industry Readiness Programme	Department of Dyestuff Technology	ICT Mumbai	1 day
Prof. G. S. Shankarling	Dihydroquinazolinone based "turn-off" fluorescence sensor for detection of Cu ²⁺ ions	NSFAC	ICT, Mumbai	1 day
Prof. G. S. Shankarling	Wealth creation opportunities through sustainable waste management	Oral presentation	Tirupati	-
Prof. N. Sekar	Introduction to Gaussian; Theory and Practice	-	Kolkata	7 days
Dr. S. Saha	Effluent Treatment and Processing	Seminar, Coordinator	ICT Mumbai	-
Prof. S. V. Joshi	Hands on training on Animal cell culture and molecular techniques using the human /cancer cell lines for	16-22 July	Pune	7 days

	various expts, Attend Cell culture Workshop at International Center for Stem Cells, Cancer and Biotechnology			
Prof. S. V. Joshi	" Improving communication Interpersonnal skills and time management w.r. t. Pharma Industry, Application on Thermal Analysis in PharmaIndustry	Workshop organized , 10-22 March	-	12 days
Prof. S. V. Joshi	Quality by design Practicle Implementation of Tools &Tractics of QbD& L6 in Pharma Product Development,Learn the basic of QbD	International workshop,12-13 Oct	-	2 days
Prof. Dr. Ravindra D.Kulkarni	Nutritional Properties of Palm &Other Oils, Workshop on Palm Oil, SNTD Campus,	Palm Oil Council, Malysia& OTAI, 22 Jan	Juhu	1 days
Prof. Dr. Ravindra D.Kulkarni	Surfactant Mediated Reactive Crystallization for PolymorphSelective Synthesis of Nanomaterials,	BITS-MESRA, Jan 17	RANCHI	1 days
Prof (Dr). Ravindra D. Kale	Personality Development	Mr Yogesh Barotof Raymonds Ltd, 16 March	ICT, Mumbai	1 days
Prof (Dr). Ravindra D. Kale	Research Methodology for Engineering Management Research"	AICTE, 14 July	VJTI, Matunga	1 days
Prof (Dr). Ravindra D. Kale	Woolmark Wool EducationCourse	SEAM CONSULTING GROUP, 12 March	ICT, Mumbai	1 days
2017-2016				
Dr. (Mrs.) Usha Sayed	Characterization of Medical Textile Products National levelworkshop	National level workshop,6-7 Oct	-	2 days
Prof. Dr. Ravindra D.Kulkarni	Basic Oleochemical Transformations-Esterification	Dept. of Oils	-	-

	transesterification, hydrogenation, polymerization, Oxidation			
Prof. Dr. Ravindra D.Kulkarni	Oleochemicals in Food, Polymer and Plastics Industries, Certificate Course on Oleochemicals: Basic Chemistry, Derivatives and Applications	Oleochemicals & Surfactants Tech, 16-17 March	ICT, Mumbai	2 days
Prof. Amit P.Pratap	Polymer and Polymer Nano Composites Processing	R. V. College of Engineering, June 27-2 July	Bengaluru	7 Days
Prof. Amit P.Pratap	Mentoring for Faculty of Engineering and Faculty of Institutes	Department of Pharmaceutical Sciences and Technology, Dec 12- 16	ICT	4 days
Prof. Amit P.Pratap	Development Programme on Wave Theory & Applications	Electrical Engineering Department, Jan 2-7	at VJTI, Mumbai	5 days
Prof. Amit P.Pratap	Preparative Processing and Analysis of Biochemicals & Bio/Pharmaceuticals	DBT-ICT, March 14-18	ICT, Mumbai	4 days
Prof. Amit P.Pratap	“Patent Filing procedure Proceedings of Patents, Introduction to Patent specification, Patent Search with exercise, Trademarks, GI filing procedure	RGNIIPM – Central Government Institute under the Ministry of Commerce & Industry, Aug 28 - 1 Sep	Nagpur	1 week
Prof. Amit P.Pratap	Advanced Textile Materials – Textile Composites and Nanotechnology in Textiles	Textile Manufactures Department, 30 Oct - 4 Nov	VJTI	1 week
Prof. Amit P.Pratap	Industrial Tribology	Mechanical Engineering Department, Dec 11 - 5 Jan	VJTI	1 week

Prof. Amit P.Pratap	Pedagogy and Management Capacity Enhancement Programme for Teaching Staff	Engineering Staff College of India (ESCI), Feb 25 – 1 March	at Goa	1 week
Prof. Amit P.Pratap	NBA and NAAC Accreditation for TEQIP-III funded Universities and Institutions	Engineering Staff College of India (ESCI), July 18-22	Lonavala	1 week
Prof. Amit P.Pratap	NBA” under TEQIP-II at LectureRoom CE	Training Programme, Dec4-5	ICT, Mumbai	2 days
Dr. Satyajit Saha	Teaching and LearningWorkshop	24 Sep	ICT, Mumbai	1 days
Dr. Satyajit Saha	HRDC	Orientation Programme, 5 Jan- 2 Feb	Mumbai University	29 days

4.4 Research and Development (30)

Institute Marks 30.00

4.4.1 Sponsored Research (15)

Assessment year 2021-22

Project Title	Duration	Funding Agency	Amount(in Rupees)
Synthesis and characterization of novel photo-sensitizer textile dyes with photoinactivation ability of viruses and microbes: and expeditious approach to make selfcleaning and self sterilizing fabric.	3 years	BRNS	₹ 30,30,000.00
Sustainable synthesis of N-heterocycles based speciality chemicals	4 years	DST-PURSE-2020	Total grant: Rs 265000000.00
The process development and sustainable synthesis of 1-aminoanthraquinone and its derivatives support the indian speciality chemicals industry	4 years	DST-PURSE-2020	Total grant: Rs 265000000.00

Assessment Year : 2020-21 (CAY)

Project Title	Duration	Funding Agency	Amount(in Rupees)
FIST	5 Years	DST	20850000.00
Deep Eutectic Solvents as a greener media for oxidation reactions	12 months	TEQIP-3	440000.00
Organic Electronics	3 years	SERB	3758480.00
			Total Amount(X): 25048480.00

Assessment Year : 2019-20 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Deep Eutectic Solvents as a greener media for oxidation reactions	18 months	TEQIP-3	635000.00
Synthesis and Purification of Spectroscopic Grade Cucurbit[7]uril for Hig	1 Year	DAE-BRNS	636800.00
Laser Dyes	3 years	DAE-ICT	3482500.00
DSSC3	3 years	DST - CERI	4190412.00
Development of Graphene-based Supercapacitor employing improved protocols for prep	1 year 6 months	ONGC	1470000.00
Development spongy Graphene materials for Recovery of Crude oil from Effluent water.	1 year 3 months	ONGC	1459000.00
Green approach towards the synthesis of conductive paint from biomass	2 years 1 month	TEQIP	857073.00
Design and synthesis of novel organic dyes with twisted architecture for applications in d	1 year (2018-19)	ICT Mumbai-Golden Jubilee Research Grant	40000.00
Process intensification by continuous-flow production of 2-aryl- 1,2,3,4-tetrahydroquinox	20 months	TEQIP-III	750000.00
Novel approach to make tailored design molecular glue from bioinspired dye molecule: e	3 years	CSIR	1298667.00
Biocolourants: A promising source for colouration of Textiles- TEQIP Phase 3	1.5years	World Bank and GOI	625000.00
certificate Course in Chemistry and Technology of Fibrous Polymers	4 months	Aditya Birla	1000000.00
To evaluate the efficiency of natural dye formulation as Hair dye	4 months	Hindustan Unilever Limited	1260000.00

Surfactant	From 2018	Private	120000.00
Bioenergy, Fertilizer and Clean Water from Invasive Aquatic Macrophytes (UK 131,584 S	3 years	BBSRC, UK	11088912.64
J.C. Bose Fellowship	5 years	DST- Science and Engineering Research Board	8250000.00
A compact and cost-effective technology for on-site treatment & reuse of wastewater con	1 years	Indo US Science and Technology – IIGP 2.0 2018	1000000.00
BEFWAM – Bioenergy Fertilizer and Freshwater for Invasive Aquatic Macrophytes	31st Jan 2019 to 31st Jan 2022	University of Leeds	130000.00
Pyrolysis of biomass, coconut shell and peanut shell for value added products	4 years	Shri. K. V. Mariwala - Mariwala Trust	2600000.00
Integration of Sustainability Concepts in Chemical Engineering Education	2 years	WIPRO Foundation	456250.00
Lab scale synthesis of fine and bulk chemicals	1 year	VOL, Mumbai	1108000.00
Lab scale synthesis of fine chemicals	1 year	VOL, Mumbai	1258000.00
Water and wastewater treatment using hybrid advanced oxidation processes	3 years	Department of Science & Technology	7448000.00
Hydrodynamic cavitation based intensified and low cost technology for industrial wastew	2 years	Department of Science and Technology, India-Ukraine collaboration	1302000.00
Evaluation of advanced technologies for waste water treatment of Fiber plants of ABG	3 years	Aditya Birla Science and Technology Center	1167000.00
Surface studies on lean amine solvents from gas treating units	2 years	Amines and Plasticizers	253000.00
Oil water interfacial tension of polymerised	1 years	Hindustan Unilever Ltd	1391000.00

oil in presence of surfactants			
Study of Interfacial properties of oil and surfactant solutions	6 months	DOW Chemical International Pvt.Ltd.	337000.00
Development of superior absorbents for CO2 separation from biogas	28th March 2019 to 27th March 2022	Center for High Technology	8556960.00
Hydrogen production from macroalgal biomass via catalytic aqueousphase reforming	1st October 2018 to 31st March 2020	TEQIP Phase 3	710000.00
Improved hydrogen production from biogas using sorption-enhanced reforming	3 years	Department of Science and Technology (HFC-2018)	4062696.00
Study on new green CO2-capturing solvents	3 years	DST-DBT (Mission Innovation India - IC#3)	5791680.00
Catalytic aqueous-phase reforming of model compounds of microalgae and activated sludge	3 years	DST-DBT (Mission Innovation India - IC#4)	5080320.00
Use of composite foam to tackle the problems of oil spill and undesirable oil-in-water emulsion	2 years	ONGC	1800000.00
Study of Forward Osmosis related to Sugar Industry	3 years	Godavari biorefinery	2400000.00
Dehydrogenation reactions for industrial utility	4 years	Asian Paint	3000000.00
Development of PCM Poultry Warmer for Open Shed Poultry	August 2018 – December 2019	Covestro India Pvt Ltd	500000.00
Preclinical Evaluation of Full Thickness Wound Healing Using Starch Based Artificial Skin	07/18-07/20	Rajiv Gandhi Science and Technology Commission	1400000.00
Development of Hydrodynamic flow focusing droplet generator for preparation of monodisperse droplets	01/18-01/21	ICT-DAE	7020800.00

			Total Amount(Y): 95936070.64
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Assessment Year : 2018-19 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Sustainable processes for the development of keratin hydrolysate for the use as fertilize	2017 – 2020	Department of Science and Technology, Government of India	7500000.00
Utilization of Reetha fruit for value added products Utilization of curcumin industry waste	3 years	RGSTC	6600000.00
Synthesis of terpene derivatives	1 year	Mangalam Organics, Mumbai	1500000.00
Syntheis of FDCA	1 year	GBL, Mumbai	1507000.00
Improved process for CaSO4 crystallisation in concentrated brine using Ultrasound	3 years (2017-2020)	Department of Atomic Energy-ICT	3500000.00
Improved processing of camphor, terpenes and resins	3 years (2017-2020)	Mangalam Organics Ltd.	1500000.00
Cold storage facility for storage of fruits and vegetables using heat based refrigeration s	3 years	Marico	2700000.00
p-Hydroxy benzaldehyde production from p-cresol -A study on reaction kinetics	2016	Atul Ltd.	1150000.00
Purification of aqueous effluents from refineries and allied industries	6 months	VA Tech Wabag	1618800.00
Mitigation of water problems in AUSA town, Latur: wastewater management, Gaothan La	2 years	Department of Science & Technology, New Delhi	1703000.00
Polymeric Nanocarrier for siRNA Delivery	10/12-10/17	DBT	3250000.00
Designing & Commercialization of affordable chemically defined serum free media & fee	03/18-03/20	BIRAC-BIPP	6544000.00
New Formulations from Cannabis sp	07/18-07/20	Akseera Pharma, Canada	2285625.00
Quantification of Coating Material on	05/16-05/17	FMC, Bengaluru	197856.00

Excipients			
Characterization of Pharmaceutical Excipients	03/14-04/17	FamyCare, Mumbai	363951.00
Activity Reduction of Peptidase Enzymes by various Metal Ion- Reducing agent combin	03/17-07/18	Anya Biopharma, Taiwan	5606600.00
Interaction of API and Excipient	02/17-06/17	Wockhardt, Aurangabad	91080.00
Structural Characterization of Recombinant Protein	06/18-10/18	Stelis Biopharma, Bengaluru	1095447.00
Evaluation New Probiotic COmpositions	02/18-10/18	SA Pharmachem, Mumbai	3109300.00
To study the effect of increasing the enzyme concentration upon the reaction rate	05/17-10/18	Himedia Lab, Mumbai	442875.00
Characterization of aggregates MW related variants generated in mAb by SV-AUC	07/17-02/18	Hetero Biopharma, Hyderabad	302500.00
HMWP Characterization of Insulin Products	07/17-07/19	Biocon, Malaysia	4102780.00
Synthesis of novel perimidine and quinaldine based NIR absorbing squaraines dyes and	3 years	AICTERPS	75000.00
Development and characterization of selective coating for enhancement of radiation abs	2 years	DAEBRNS	14335000.00
Synthesis and Purification of Spectroscopic grade Cucurbituril for high power aqueous d	3 years	DAEBRNS	3044800.00
Synthesis of Azo and anthraquinone dyes.	1 year	Transition Optical Corporation, USA	2000000.00
Development of IPP resistant Blue dye and UV-absorber	1 year	Essilor International Ltd.	2600000.00
Synthesis of optical brightening agents	1 year	Deepak Nitrite Ltd	950000.00
Synthesis of graphene based bio-adsorbent for waste stream treatment	3 years	CSIR	2984000.00

Development & Optimization Studies with an alternate route for vinylsulphones and Nov	3 years	Principal Scientific Advisor to GOI PSA –II (DST)	5913000.00
Synthesis of water soluble fluorescent colourants for high visible hydrophilic textile subs	3 years	WRA	5940856.00
Coloured fluorescent conducting oligomers / monomers for dye sensitized solar cell	3 years	DST-CERI	8878099.00
Phenanthroline-ly Coupled Tetracene Dimers (PCTD)-Novel Materials for Organic Electr	3 years	DST-SERB	3758480.00
high-performance laser dyes design and synthesis	3 years	DAE-ICT	3482500.00
Geener way of production of High performance colorants- Xanthenes and Quinonoids	2years	TEQIP-III	520000.00
Designing and synthesis of novel fluorescent cyanine dyes for Hi-technology application	3 years	DST	3000000.00
Design and Synthesis of Novel Organic Dyes Based on Trogers's Base (TB) Architectur	3 years	SERB-DST	2900000.00
A Novel Approach Of Rational Catalyst Design For The Direct Enantioselective α -Allylat	3 years	CSIR	2546000.00
Co-operative Organocatalysts for Enantioselective Transformations	2 years	UGC	600000.00
Synthesis and application of novel water soluble organic and inorganic small molecules	2 years	UGC	600000.00
Synthesis and characterization of amphiphilic PEG foldamer for mimicking stimuli-respo	3 years	DST-SERB	2003000.00

Novel Reactive Dye System Based on Diazonium Salts	3 years	Ministry of Textiles	2748000.00
Development of Pt alloy based electrocatalyst for fuel cell	5 years	DST Inspire	3500000.00
Development and characterization of selective coating for enhancement of radiation abs	3 years	BARC/DAE	10200000.00
Scale Up Studies for Production of Biosurfactant from Hydrocarbon Utilising Bacteria &	2017-19	Naval Materials Research Laboratory (DRDO)	1370770.00
Novel Oleochemicals and its Applications	2017-19	M/s Bio Sols India Pvt. Ltd., Mumbai	3139040.00
Synthesis and Applications of Newer Novel Surfactants	2017-20	M/s Anshika Polysurf Ltd., New Delhi	2354280.00
Biofuel and Natural Wax Related Products	2017-21	M/s Kedia Organic Chemicals Pvt. Ltd., Navi Mumbai	3139040.00
Guerbet/ Branched Alcohols	2017-18	M/s Godrej Industries Ltd., Mumbai	295000.00
Processing of Vegetable Oil Refinery and Oleochemical Waste Streams for regeneration	2017-18	DST-WMT, New Delhi	2118528.00
Enhanced Low Temperature Clarity of Sea buckthorn Oil	Ongoing	SYNTHITE, Kolenchery, Kerala	304000.00
Roseheep Oil seed Extraction	Ongoing	Kumar Metals, Thane	300000.00
Manufacture of Polyol ester	Ongoing	SUMWIN Global, Malaysia	1100000.00
Cationic Polymers	Ongoing	Godrej Industries, Mumbai	500000.00
Explorations of Metallic Soaps for diverse	Ongoing	Transpek-Silox Industry	590000.00

applications in Cosmetics, Polymer, Paint and		Pvt. Ltd., Vadodara	
Analysis of Samples 'Kolliwax' HCO, 'Kolliphor RH 40' and 'Kolliwax S Fine'	Sept-oct2017	Directorate of Revenue Intelligence, Mumbai-20.	50000.00
Identify and Validate solutions within and without surfactant space such that the propo	2016-2018	Private	102000.00
Extraction of Volatile oil from Orange Peels, Separation of Limonene from it and its Indu	One and half tear	Rajiv Gandhi Science and Technology Commission	1949250.00
Testing and evaluation of performance of NSC's proprietary materials	-	Nippon Synthetic Chemicals Ltd. Japan	2190076.50
Development of Novel stimuli responsive delivery system	15 months	Johnson and Johnson Pvt. Ltd	3313125.00
Development of Controlled Release (CR) formulation of Natural Highly Purified Human	36 months	DSIR	15905500.00
Studies in surface sterilization of spices using non thermal processing	November 2017- November 2019	DSTinternational bilateral co-op division, New Delhi (Indo srilankan joint project)	2648000.00
Parametric study and data analysis in the process of developing cooking aids	April – September 2017	Godrej & Boyce Mfg Co Ltd, India	200000.00
Mitigation of water problems in Ausa town, Latur: wastewater management, Gaothan La	2 years	Department of Science & Technology, New Delhi	17300000.00
			Total Amount(Z): 198118158.50

Cumulative Amount(X + Y + Z) = 319102709.14

5.1.1 Consultancy (from Industry) (15)
Assessment Year 2018-19

Institute Marks (15)

Name Of The Consultant	Project Title	Name Of Company	Total Consultancy
Dr. Shalini S. Arya	Process and product development	M/s.Cargill India Pvt. Ltd.	70000.00
Prof U.S.Annapure	Process and product development	M/s. Aditya Birla Science & Tech. Co. Ltd.	200000.00
		M/s.Marico Ltd	40000.00
Dr. Annamma Anil	Process and product development	M/s. Gencrest LLP (Research & Project)	675000.00
	Process and product development	M/s. poabs Biotech Private Ltd.	300000.00
Prof. S.S Bhagawat	Process and product development	M/s. Sumwin Solution Malaysia SDN.BHn(from 17-18)	500000.00
	Process and product development	M/s. Toyo Engineering India Pvt.ltd.	75000.00
	Process and product development	M/s. Lorel India Pvt.Ltd	60000.00
	Process and product development	M/s. Aditya Birla Science & Tech. Co. Ltd.	900000.00
	Process and product development	M/s. Marico Ltd. (1st Installment)	175000.00
	Process and product development	M/s. Marico Ltd. (2nd Installment)	175000.00
	Process and product development	M/s K.V.Fire	300000.00
	Process and product development	M/s K.V.Fire	100000.00

	Process and product development	M/s. Aditya Birla Science & Tech. Co. Ltd.(FEOM 2017-18)	300000.00
	Process and product development	M/s Dow Chemicals International Pvt. Ltd.(R & P)	150000.00
	Process and product development	M/s.Balmer Lawrie	300000.00
	Process and product development	M/s.Reliance Utilities Power Pvt.Ltd..from 2017-18	300000.00
	Process and product development	M/s. Galaxy Surfactants Ltd	348480.00
	Process and product development	m/s hindustan unilever ltd	375000.00
Dr.Prakash Bhate	Process and product development	M/s. Sulfast Chemicals Industries (1st Installment)	600000.00
	Process and product development	M/s. Nocil Ltd.	750000.00
	Process and product development	M/s. Sulfast Chemicals Industries (2nd Installment)	
	Process and product development	M/s. Sulfast Chemicals Industries (3rd Installment)	
Prof. B.M. Bhanage	Process and product development	M/s. Hindustan Unileve	130000.00
Dr. Ganesh Chaturbhus	Process and product development	M/s. Astec LifeSciences Ltd.	180000.00
	Process and product development	M/s. Astec LifeSciences Ltd.	150000.00
Dr. H.K.Chaudhari	Process and product development	M/s. Shreya Life Sciences Pvt Ltd	150000.00
Prof. Padma V. Devrajan	Process and product development	M/s. Zim Laboratories Ltd.(From 2017-18)	250000.00

	Process and product development	M/s.Phoenix Pharmaceutical,LLC	335790.00
Dr. Dawande S.G.	Process and product development	M/s. Kesar Petroproducts Ltd.	135000.00
Dr. Vishwanath H. Dalvi	Process and product development	M/s. Zoetis Pharmaceutical Research Pvt.Ltd/st Inst	300000.00
	Process and product development	M/s. Zoetis Pharmaceutical Research Pvt.Ltd/st Inst	300000.00
	Process and product development	M/s.Panorama Consulting	90000.00
	Process and product development	M/s. Eternis Fine Chemicals Ltd.	1500000.00
Prof.M.S.Degani	Process and product development	M/s. Salicykates Chemicals Pvt. Ltd.	11250.00
Dr. Dawande S.G.	Process and product development	M/s. Kesar Petroproducts Ltd	135000.00
Dr.P.R. Gogate	Process and product development	M/s. A.B.S.&T.C.L.(Project + Consultancy)	150000.00
	Process and product development	M/s. Green Galaxy Global Enviromental Services (2nd Installment)	900\$
	Process and product development	M/s. Supreme Petrochem Ltd.	150000.00
	Process and product development	M/s. Excel Industries	175000.00
	Process and product development	M/s.Whirlpool of India Ltd	180000.00
	Process and product development	M/s. Excel Industries Ltd.from 2017-18	45000.00
	Process and product development	M/s. Mangalam Organics(2nd installment)	270000.00

	Process and product development	M/s. Green Galaxy Global Enviromental Services (3rd Installment)	1350\$
	Process and product development	M/s. S.S.Techno Limited	600000.00
	Process and product development	M/s. Mangalam Organics(3rd installment)	270000.00
	Process and product development	M/s. Shree Pushkar Chemicals & Fertilisers Ltd.	165000.00
	Process and product development	M/s. Deepal Nitrite Ltd.	180000.00
	Process and product development	M/s. Hikal Ltd.	150000.00
	Process and product development	M/s. SI Group	180000.00
	Process and product development	M/s. A.B.S.&T.C.L.(Project + Consultancy) 2nd Installment	
	Process and product development	M/s. Mangalam Organics(4th installment)	
Dr. P.K.Ghosh	Process and product development	M/s. Asian Paints	300000.00
	Process and product development	M/s. Rubamin Limited	100000.00
Prof. S.S. Jagwar	Process and product development		
Dr. Ratnesh Jain	Process and product development	M/s. Advy Chemicals Pvt Ltd(1st installeme 3L+GST)	600000.00
	Process and product development	M/s. Advy Chemicals Pvt Ltd(2st installement 3L+GST)	
	Process and product development	M/s. Gangwal Chemicals Pvt.Ltd.	500000.00

	Process and product development	M/s. Mangalam Drugs & Organics Ltd. (1st Installment)	2400000.00
	Process and product development	M/s. S.A. Pharmachem Pvt Ltd.	675000.00
Prof.R.N.Jagtap	Process and product development	M/s. MOT	200000.00
	Process and product development	M/s. Reliance Industrial Ltd.(1125000)..FROM 2017-18	187500.00
	Process and product development	M/s. Reliance Industries Ltd (2nd Installment)	62500.00
	Process and product development	M/s. Reliance Industries Ltd 3rd Installement	62500.00
	Process and product development	M/s. A-1 Fence Products Company Pvt. Ltd.	300000.00
	Process and product development	M/s. Reliance Industries Ltd 4th Installement	62500.00
	Process and product development	M/s. Reliance Industries Ltd 5th Installement	62500.00
	Process and product development	M/s. Reliance Industries Ltd 6th Installement	62500.00
	Process and product development	M/s. Reliance Industries Ltd 7th Installement	62500.00
	Process and product development	M/s. Reliance Industries Ltd 8th Installement	62500.00
	Process and product development	M/s. Shree Surya Coatings	150000.00
	Process and product development	M/s. Reliance Industries Ltd 9th Installement	62500.00
	Process and product development	M/s. ICA Pidilite	150000.00

	Process and product development	M/s. Reliance Industries Ltd	375000.00
	Process and product development	M/s. Reliance Industries Ltd 10th Installement	62500.00
Dr. Prajakta Dandekar Jain	Process and product development	M/s. AUA General Trading Llc	525000.00
	Process and product development	M/s. AUA General Trading Llc	525000.00
	Process and product development	M/s. Unilever Industries Pvt Ltd.	300000.00
Prof.S.V. Joshi	Process and product development	M/s. Salicylates & Chemicals Pvt. Ltd. (1st Installment)	11250.00
	Process and product development	M/s. Fine Organics Industries Ltd.	20000.00
	Process and product development	M/s. Salicylates & Chemicals Pvt. Ltd. (2nd Installment)	15000.00
	Process and product development	M/s. Sahastraa Exports Pvt Ltd.	50000.00
Dr. Ravindra D. Kale	Process and product development	M/s. Muncipal Corporation of Greater Mumbai	250000.00
	Process and product development	M/s. Muncipal Corporation of Greater Mumbai	650000.00
Prof Lakshami kantam	Process and product development	M/s. Kesar Petroproducts Ltd.(Research & Projects)	200000.00
	Process and product development	M/s. Godavari Biorefineries	200000.00
	Process and product development	M/s. Chrom Specialities Ltd	500000.00
Prof R.D.Kulkarni	Process and product development	M/s. Sumwin Solution Malaysia SDN.BHn(from 17-18)	50000.00

	Process and product development	M/s. Kumar Metal Industries Pvt. Ltd.	75000.00
	Process and product development	M/s. Synthite, Kolenchery, Kerla	75000.00
Prof A.M. Lali	Process and product development	M/s. Gencrest LLP (Research & Project)	675000.00
	Process and product development	M/s. Lupin Ltd	600000.00
	Process and product development	M/s. Kanoria Chemicals & Industries Ltd.	1500000.00
	Process and product development	M/s. Lupin Ltd	150000.00
Dr. C.S. Mathpati	Process and product development	M/s. Jayant Agro-Organics Ltd..1st Instal	500000.00
	Process and product development	M/s. UPL UPL Ltd	500000.00
	Process and product development	M/s. Zoetis Pharmaceutical Research Pvt.Ltd/ (1st Installment) 30%	300000.00
	Process and product development	M/s. Jayant Agro-Organics Ltd.(2nd Installment)	
	Process and product development	M/s. Jayant Agro-Organics Ltd.(3rd Installment)	
	Process and product development	M/s. Zoetis Pharmaceutical Research Pvt.Ltd/(2nd Installment) 70%	
	Process and product development	M/s. Jayant Agro-Organics Ltd.(4th Installment)	
	Process and product development	M/s. Fabex Engineering	600000.00
	Process and product development	M/s. Jayant Agro-Organics Ltd.	575000.00

Dr. Shashank Mhaske	Process and product development	M/s. ICI India Research & Technology Centre(Frpm 2017-18)	60000.00
	Process and product development	M/s.Asian Paints Ltd.	75000.00
	Process and product development	M/s. Coromondel International Ltd.	73000.00
	Process and product development	M/s. AkzoNoble India Limited	150000.00
	Process and product development	M/s. Unilever Industries Pvt Ltd. (Last Installment)	
Dr. P.A. Mahanwar	Process and product development	M/s. The TATA Power Compony Ltd	130000.00
	Process and product development	M/s. Knit Pro International	250000.00
	Process and product development	M/s. Romit Redins Pvt. Ltd.	50000.00
	Process and product development	M/s. Grauer & Weil (India)Ltd	150000.00
	Process and product development	M/s.Chemros Solution (1st Installment)	550000.00
	Process and product development	M/s. Simplex Infrastruction Ltd.	305000.00
	Process and product development	M/s. Berger Paints India Ltd.	340000.00
	Process and product development	M/s. TE Connectivity (From 2017-18)	150000.00
	Process and product development	M/s. Asian Paints	900000.00
	Process and product development	M/s.Rashtirya Chemicals & Fertilizers ltd.	137275.00

	Process and product development	M/s.Ujwal Pharma Private Ltd	100000.00
	Process and product development	M/s. Babaji Shivram	60000.00
	Process and product development	M/s. Nayakem Organics Pvt. Ltd.	100000.00
	Process and product development	M/s.Chemros Solution (2nd Installment)	
Prof K.V. Marathe	Process and product development	M/s. PACE (India)(from 2017-18..)	125000.00
	Process and product development	Indian Center For Plastics in the Environment	1500000.00
Prof. V.B. Patravale	Process and product development	M/s. Sahajanand Medical Technologoes Pvt Ltd.	745000.00
	Process and product development	M/s. Cadila Pharmaceuticals Ltd.	500000.00
	Process and product development	M/s.Piscium Health Science Pvt Ltd (Half Payment)	875000.00
Dr. Amit P. Pratap	Process and product development	M/s. Cargil India Pvt. Ltd.	51000.00
	Process and product development	M/s United Mud-Chem Pvt. Ltd.	51000.00
	Process and product development	M/s. Hindustan Unilever Limited	51000.00
	Process and product development	M/s. AAK Kamani	30000.00
	Process and product development	M/s. Marico Limited	30000.00
Dr. D.V.Pinjari	Process and product development	M/s. Department Of Revenue Intelligence	85000.00

Prof. A.B. Pandit	Process and product development	M/s. A.B.S.&T.C.L.(Project + Consultancy)	150000.00
	Process and product development	M/s. Gothi Impex (Prof.Sonatkke& Prof.Pandit)	600000
	Process and product development	M/s. Encore Natural Polymer Pvt. Ltd	1800000.00
	Process and product development	M/s. Gothi Impex (Prof.Sonatkke& Prof.Pandit)	600000
	Process and product development	M/s. A.B.S.&T.C.L.(Project + Consultancy)	
	Process and product development	M/s. Jayant-Agro Organics Ltd	60000
	Process and product development	M/s.Nocil Ltd	1200000.00
Dr. V.K.Rathod	Process and product development	M/s. IG Petrochemicals Ltd	150000.00
	Process and product development	M/s. Kesar Petroproducts Ltd.(Research & Projects)	200000.00
	Process and product development	M/s. Godavari Biorefineries Ltd	200000.00
Prof. Sadhana Sathaye	Process and product development	M/s. Amarjyot Chemical Corporation	100000.00
	Process and product development	M/s. Johnson Matthey Chemical India Ltd	150000.00
Prof. S.V.Joshi	Process and product development	M/s . Aditya Envirmental services pvt ltd	450000.00
	Process and product development	M/s. Lifescient INC,(Res & Pro)	60000.00

	Process and product development	M/s. Merck Specialities	200000.00
	Process and product development	M/s. Salicykates Chemicals Pvt. Ltd.	11250.00
	Process and product development	M/s. Fine Organics Industires Ltd	20000.00
Prof. B.N.Thorat	Process and product development	M/s. Sharon Bio-Medicine Ltd.	200000.00
	Process and product development	M/s.Pidlite Industries Ltd.	150000.00
	Process and product development	M/s. Maldeep Catalysts India	200000.00
	Process and product development	M/s.Relicane Industries Ltd.	150000.00
	Process and product development	M/s.Piramal Enterprises Ltd	250000.00
Prof. P.R.Vavia	Process and product development	M/s. Nippon Synthetic Chemicals Ltd	510600.00
	Process and product development	M/s. Nippon Synthetic Chemicals Ltd	157292.00
Prof. G.D. Yadav	Process and product development	ONGC Centre Alternative to Plat.(From 2017-18)	240000.00
	Process and product development	ONGC Centre closed loop (From 2017-18)	80000.00
	Process and product development	M/s. McKinsey & Company	1800000.00
	Process and product development	M/s. ONGC (ICT-OEC/Phase III)..FROM 2017-18..2d install	2500000.00

	Process and product development	M/s. ONGC (ICT-OEC/Phase III)..FROM 2017-18.3rd install	750000.00
Prof.M.S.Degani	Process and product development	M/s. Salicykates Chemicals Pvt. Ltd. (1st Installment)	11250.00
	Process and product development	M/s. Salicykates Chemicals Pvt. Ltd. (2nd Installment)	11250.00
Prof. G.S. Shankarling	Process and product development	M/s. A-One organics Pigments Pvt. Ltd.	100000
	Process and product development	M/s. Borax Manufactures Association of India	50000
Prof.P.D.Amin	Process and product development	M/s. Cherly Laboratories Pvt Ltd	100000
	Process and product development	M/s. BASF (Industry Project)	150000
	Process and product development	M/s. Merck Specialities	200000
Dr. Radhakrishna Reddy	Process and product development	M/s. Sea6 Energy Pvt Ltd.	30000
Prof.Anagha S. Sabnis	Process and product development	M/s. EPCOS India Pvt Ltd.	30000
	Process and product development	M/s. Dorf Ketal Chemical (1) Pvt Ltd.	100000
Prof. A. Vijay Kumar	Process and product development	M/s. Eternis Fine Chemicals	1200000
Dr. Vikas N. Telvekar	Process and product development	M/s. Lasa Supergenerics Limited	30000
	Process and product development	M/s. Aarti Drugs Limited	50000
Prof. N. Sekar	Process and product development	M/s. Deepak Nitrate Limited	900000

Dr.K.S. Laddha	Process and product development	M/s. Piddlite Industries Ltd. (1st Installment)	300000
	Process and product development	M/s. Piddlite Industries Ltd. (2nd Installment)	
			(X)Total 52046687.00

Assessment Year : 2019-20 (CAYm1)

Name Of The Consultant	Project Title	Name Of Company	Total Consultancy
Prof U.S.Annapure	Process and product development	M/s. Marico Limited	40000.00
	Process and product development	M/s. Aditya Birla Sci And Tech	50000.00
	Process and product development	M/s . Signet Chemical Cor Pvt Ltd	150000.00
	Process and product development	M/s. Abhishek Tradelinks	20000.00
	Process and product development	M/s.Exotic Fruit Pvt Ltd	100000.00
	Process and product development	M/s. Marico Limited	40000.00
Prof.S.V.Joshi	Process and product development	M/s. Sriken Laboratories Pvt Ltd	180000.00
	Process and product development	M/s. Organics Aromatics Pvt Ltd	150000.00

	Process and product development	M/s. Great Pacific Exports Pvt Ltd	15000.00
Dr. Annamma Anil	Process and product development	M/s. Gencrest LLP	1500000.00
	Process and product development	M/s. UPL Limited (1200000) 1st installment	300000.00
	Process and product development	M/s. UPL Limited 2 nd installment	300000.00
Prof. P.V. Deverajan	Process and product development	M/s. Amaterasu Life Sci LLP	300000.00
	Process and product development	M/s. Zim Laboratories Ltd	350000.00
Prof. S.S Bhagawat	Process and product development	M/s. Unilever industries Pvt. Ltd.	240000.00
	Process and product development	M/s. Galaxy Surfactants Limited	348480.00
	Process and product development	M/s. K.V. Fire (1st install)	300000.00
	Process and product development	M/s. Aditya Birla Science & Technology Company Pvt. Ltd.(1st Install)	900000.00
	Process and product development	M/s. Asian Paints Limited	175000.00
	Process and product development	M/s. Marico Limited (50% Inviove 210000)	420000.00
	Process and product development	M/s. AZB and Partners (inv for 25%) (2nd inv 75 %)(300000)	75000.00
	Process and product development	M/s. K.V. Fire (2st install)	150000.00

	Process and product development	M/s. Aditya Birla Science & Technology Company Pvt. Ltd.(2st Install)	900000.00
	Process and product development	M/s. Marico Limited (2 installment)	140000.00
	Process and product development	M/s. Unilever industries Pvt. Ltd. (2nd installment)	60000.00
Dr. Ganesh Chaturbhus	Process and product development	M/s. Akseera Pharma Corp	250000.00
	Process and product development	M/s. Spiro Life care pvt ltd	150000.00
Prof.A.V.Patwardhan	Process and product development	M/s.Aegis Logistics Limited (1st installment)	450000.00
	Process and product development	M/s.Aegis Logistics Limited	200000.00
	Process and product development	M/s.Aegis Logistics Limited	300000.00
Prof.M.S.Degani	Process and product development	M/s. Sakar Healthcare Limited	84746.00
	Process and product development	M/s. Salicylates And Chemical	100000.00
Dr.P.R. Gogate	Process and product development	M/s green galaxy global environment services installment	89984.00
	Process and product development	M/s s. techno limited	60000.00
	Process and product development	M/s kesar petroproducts limited	135000.00
	Process and product development	M/s cipla house	120000.00

	Process and product development	yog chem pvt ltd	105000.00
	Process and product development	M/s hisun adhesives	120000.00
	Process and product development	M/s indoco remedies limited	180000.00
	Process and product development	M/s. supreme petrochem ltd	90000.00
	Process and product development	M/s shyam chemical pvt ltd (50 % inv)300000	150000.00
	Process and product development	M/s hikal limited	270000.00
	Process and product development	M/s Lote parshuram envirement protection co op soc ltd	300000.00
	Process and product development	M/s s. techno limited (50% inv) 300000	150000.00
	Process and product development	M/s.vardhaman dyestuffindustries pvt ltd	150000.00
	Process and product development	M/s. Rallis India Pvt Ltd (1050000)	550000.00
Dr. P.K.Ghosh	Process and product development	M/s. Rubamin Limited	100000.00
Prof.Ashok Athalye	Process and product development	M/s.Rossari Biotech Limited	1000000.00
	Process and product development	M/s.Rossari Biotech Limited	83333.00
	Process and product development	M/s.Rossari Biotech Limited	83333.00
	Process and product development	M/s.Rossari Biotech Limited	83333.00

	Process and product development	M/s.Rossari Biotech Limited	83333.00
	Process and product development	M/s.Rossari Biotech Limited	83333.00
Prof.R.N.Jagtap	Process and product development	M/s. Seven Seas Paints Pvt Ltd	70000.00
	Process and product development	M/s.Soham Pipe Lining Services JV	45000.00
	Process and product development	M/s. Seven Seas Paints Pvt Ltd	100000.00
	Process and product development	M/s. Gravit Onsite- JV India	40000.00
	Process and product development	M/s. Indofil Industries Limited	65000.00
	Process and product development	M/s. Grand Paradi Co-operative Housing Society ltd	105000.00
	Process and product development	M/s. Elken South Asia Pvt Ltd	40000.00
	Process and product development	M/s. Saboo SBL Specialty Coating Pvt Ltd	60000.00
	Process and product development	M/s. Berger Paints I Pvt	150000.00
	Process and product development	M/s.Durashield Building Svstems Pvt Ltd	375000.00
	Prof. Vadana B.	Process and product development	M/s.Sanajanand medical Technologies pvt ltd
Process and product development		M/s. Cadila Pharmaceuticals	500000.00
Prof. V.G. Gaikar	Process and product development	M/s. Fossil Lliquid And Minerals Exim Pvt Ltd	1200000.00

Dr. Parag R. Nemade	Process and product development	M/s. Galaxy Surfactants Ltd	150000.00
Dr. Jyostna T. Waghmare	Process and product development	M/s. Hindustan Unilever Ltd (1st installment) (240000)	120000.00
	Process and product development	M/s. Hindustan Unilever Ltd (2st installment) (240000)	60000.00
Prof Lakshami kantam	Process and product development	M/s. Mangalam Organics Ltd	50000.00
	Process and product development	M/s. Marvel Drugs Pvt Ltd	100000.00
	Process and product development	M/s. Prasol Chemical Pvt Ltd	100000.00
	Process and product development	M/s. Vinati Organics Ltd	100000.00
Dr. Sathish Dyawanapetly	Process and product development	M/s. Vibar Nutripharma Solutions (1st installment 50000/- total cons 100000)	50000.00
Prof S.D. Samant	Process and product development	M/s. BASF India Ltd	90000.00
Dr. C.S. Mathpati	Process and product development	M/s. Fabex Engineering (600000 1st installment)	150000.00
	Process and product development	M/s. Jayant Agro- organics Ltd (2 nd installment) (575000)	143750.00
	Process and product development	M/s. JAYant Agro- organics Ltd (3 nd installment)	143750.00
	Process and product development	M/s. Fabex Engineering (600000 2st installment)	150000.00
	Process and product development	M/s. Zoetis Pharmaceutical Research Pvt Ltd	300000.00
	Process and product development	M/s. Jayant Agro- organics Ltd (4 nd installment) (575000)	143750.00

	Process and product development	M/s. Fabex Engineering (600000 3st installment)	150000.00
Dr. Shashank Mhaske	Process and product development	M/s. Unilever Industries P Ltd	324000.00
	Process and product development	M/s. Akzonobel India Ltd	150000.00
	Process and product development	M/s. Mega Infra & Trading Co.	97000.00
	Process and product development	M/s. Asian Paints Ltd	365750.00
	Process and product development	M/s. Rashtriya Chemical & Fertilizes Ltd	70775.00
	Process and product development	M/s. KLJ Resourcrs limited	65000.00
	Process and product development	M/s. Nichem Solution	44000.00
	Process and product development	M/s. Sunshine Fibre Pvt Ltd	93000.00
	Process and product development	M/s. Unilever Industries P Ltd	81000.00
	Process and product development	M/s. Chandla Industrial Plastics Pvt	233000.00
	Process and product development	M/s. SPECO Infrastructure	130500.00
	Process and product development	M/s. New World Paints	100000.00
	Process and product development	M/s. Piramal enterprises Limited	220000.00
	Process and product development	M/s. Nuoyomondo Chemical Pvt Ltd	111720.00

	Process and product development	M/s. Cipla Helth ltd	70000.00
	Process and product development	M/s. BASF India Ltd	45000.00
	Process and product development	M/s. Nichem Solution	35000.00
	Process and product development	M/s. Visen Industries	160000.00
	Process and product development	M/s. Unilever Industries P Ltd	360000.00
	Process and product development	M/s. Larsen & Toubro Limited Passavnt Eng & Environment	200000.00
	Process and product development	M/s. New World Paints	87000.00
	Process and product development	M/s. Unilever Industries P Ltd	133000.00
	Process and product development	M/s. BASF India Ltd	120000.00
	Process and product development	M/s. Indian Oil Corporation limited	72000.00
	Process and product development	M/s. Avesta Enterprises Pvt Ltd	65000.00
Dr. P.A. Mahanwar	Process and product development	M/s. Shrihari Enterprises pvt ltd	100000.00
	Process and product development	M/s. SRMPL	150000.00
	Process and product development	M/s. Asian Paints PPG Pvt Ltd	1200000.00
	Process and product development	M/s. pon pure chemical india pvt ltd	120000.00

Process and product development	M/s. Babaji Shivram Clearing pvt ltd	90000.00
Process and product development	M/s. DCM Shriram	204000.00
Process and product development	M/s. Asian Paints Pvt Ltd	50000.00
Process and product development	M/s. Express Global Logistics Pvt Ltd	120000.00
Process and product development	M/s. Graver & Well India Limited	200000.00
Process and product development	M/s. Krishna Conchem products pvt ltd	150000.00
Process and product development	M/s. Graver & Well India Limited & M/s. Tolani Project Pvt	60000.00
Process and product development	M/s. Graver & Well India Limited & M/s. Offshare Indfastructure Ltd	140000.00
Process and product development	M/s. Directore of revenue interigence	256000.00
Process and product development	M/s. MC Bauchemie India Pvt Ltd	60000.00
Process and product development	M/s. Rathi Day Chem Pvt Ltd	60000.00
Process and product development	M/s. Kansai Nerolac Paints ltd	50000.00
Process and product development	M/s. VKC Foot Prints Global Pvt Ltd	100000.00
Process and product development	M/s. Shalimar Paints Ltd	120000.00
Process and product development	M/s. Shalimar Paints Ltd	120000.00

Process and product development	M/s. Fosroc Chemical I Pvt Ltd	324000.00
Process and product development	M/s. Barges India Pvt Ltd	150000.00
Process and product development	M/s. Growal Paints I Pvt Ltd & M/s. Offshore Infstructure	105000.00
Process and product development	M/s. Stanvac Chemical I Ltd	202000.00
Process and product development	M/s. Asian Paints PPG Pvt Ltd	95000.00
Process and product development	M/s. Technokem Construction Chemical	350000.00
Process and product development	M/s. SKB Builder India Limited	350000.00
Process and product development	M/s. Shri Ram Enterprises	30000.00
Process and product development	M/s. Babaji Shivram Clearing pvt ltd	90000.00
Process and product development	M/s. Sunanda Speciality Cating Pvt Ltd	50000.00
Process and product development	M/s. Rathi Day Chem Pvt Ltd	50000.00
Process and product development	M/s. Asian Paints PPG Pvt Ltd	900000.00
Process and product development	M/s. Rashtriya Chemical Fertilizer limited	773000.00
Process and product development	M/s. Tranquil Specially Products Pvt Ltd	110000.00
Process and product development	M/s. NMMC Navi mumbai	350000.00

	Process and product development	M/s. Asian Panits PPG Pvt Ltd	2604000.00
Prof K.V. Marathe	Process and product development	M/s. Equinox Envlronments I Pvt Ltd	150000.00
	Process and product development	M/s. India Center For Plastics in Enviornment Ltd	525000.00
Prof. P.D.Vaidya	Process and product development	Centre For High Techology (total Con 9 lakh)	150000.00
	Process and product development	Centre For High Techology (total Con 9 lakh)	150000.00
Dr. Amit P. Pratap	Process and product development	M/s Hindustan Unilever ltd	51000.00
	Process and product development	M/s. M.C. Dwiviedi	50000.00
	Process and product development	M/s. Mahavir Chemical India	50000.00
	Process and product development	M/s. Hindustan Unilever pvt ltd	50000.00
	Process and product development	M/s. Galaxy Surfactants ltd	60000.00
	Process and product development	M/s. Jayant Agro oraganices limiited	30000.00
	Process and product development	M/s. BASF India Limited	30000.00
	Process and product development	M/s. Mahavir Chemical India	50000.00
	Process and product development	M/s. Wipro Entrprises pvt ltd	30000.00
	Dr. Ratnesh Jain	Process and product development	M/s. Mangalam Drugs & Organics Limited

	Process and product development	M/s. Sakar Healthcare Pvt Ltd (total con 1050000/-)	350000.00
	Process and product development	M/s. Sakar Healthcare Pvt Ltd (total con 1050000/-)	350000.00
	Process and product development	M/s. Biocon Limited	9680USD\$
Prof. A.B. Pandit	Process and product development	M/s. logistics limited	450000.00
	Process and product development	M/s. logistics limited	200000
	Process and product development	M/s. Encore Natural Polymers Pvt Ltd	1800000.00
	Process and product development	M/s. logistics limited	300000
Prof A.W.Patwardhan	Process and product development	NOCIL Limited	1200000.00
	Process and product development	M/s. NOCIL Limited	
	Process and product development	M/s. Rallis India Pvt Ltd	1050000.00
Dr. V.K.Rathod	Process and product development	M/s. asian paints limited	200000.00
	Process and product development	M/s Amarjyot chemical coration	100000.00
	Process and product development	M/s Marvel drugs pvt ltd	100000.00
	Process and product development	M/s gujarat alkalies & chemical limited	250000.00
	Process and product development	M/s kesar petroproducts limited	200000.00

	Process and product development	M/s godavari birefiners ltd	200000.00
	Process and product development	M/s mangalam organics ltd	50000.00
	Process and product development	M/s indo amines limited	200000.00
	Process and product development	M/s Vivid global ind ltd	150000.00
	Process and product development	M/s IPCA labortories ltd	175000.00
	Process and product development	M/s IPCA labortories ltd	150000.00
	Process and product development	M/s Heubach Colour pvt ltd	100000.00
	Process and product development	M/s mangalam organics ltd	300000.00
	Process and product development	M/s.Prasol chemical pvt ltd	100000.00
	Process and product development	M/s. egulnox Enviroments I pvt ltd	150000.00
	Process and product development	M/s.Vinat Organics ltd	100000.00
	Process and product development	M.s Aaradhana Energy Pvt Ltd	100000.00
Prof. R.V. Adivanekar	Process and product development	M/s. Hindustan Unilever Ltd	180000.00
	Process and product development	M/s. Hindustan Unilever Ltd	180000.00
	Process and product development	M/s. B.R. Specialites LLP	180000.00

Dr. Prashant S. Kharkar	Process and product development	M/s. Godavari Biorefineries Limited (Total Con 750000/-)	187500.00
	Process and product development	M/s. Advent Chem Bio Pvt Ltd (total Cons - 45000/-)	22500.00
Dr. P.M. More	Process and product development	M/s. Calibre Chemicals Pvt Ltd	75000.00
	Process and product development	M/s. Mangalam Organics Ltd	50000.00
Prof. P.R.Vavia	Process and product development	M/s. Mitsubish Chemical Corporation	155550.00
Dr. Snehasis Chakrborty	Process and product development	Shivanika Food Pvt Ltd	150000.00
Dr.Umesh ingale	Process and product development	M/s. Lupin Limited	300000.00
Prof. G.S. Shankarling	Process and product development	M/s. Heubach Colour Pvt Ltd	50000
	Process and product development	M/s. Serra Fine Chemical pvt ltd	75000
	Process and product development	M/s. Astik Dyestuff pvt Ltd	360000
	Process and product development	M/s. SBL Colortech Pvt Ltd	600000
Prof.P.D.Amin	Process and product development	M/s. Unilever Industries Limited	90000
	Process and product development	M/s cheryl laboratories pvt ltd	100000
	Process and product development	M/s IMDC india pvt ltd	50000
Dr. Radhakrishna Reddy	Process and product development	SEA6 ENERGY PVT LTD	30000

	Process and product development	SEA6 ENERGY PVT LTD	30000
	Process and product development	SEA6 ENERGY PVT LTD	30000
	Process and product development	SEA6 ENERGY PVT LTD	30000
	Process and product development	SEA6 ENERGY PVT LTD	90000
	Process and product development	SEA6 ENERGY PVT LTD	90000
	Process and product development	SEA6 ENERGY PVT LTD	30000
	Process and product development	PUSHPA J SHAH(1 st installment)	372000
	Process and product development	PUSHPA J SHAH(2nd installment)	31000
Dr.V.H. Dalvi	Process and product development	M/s. Whirlwind project	150000
	Process and product development	M/s. Sudarshan Chemical	150000
	Process and product development	M/s. Super Fresh	210000
	Process and product development	M/s. Zoetis Pharmaceutical Research pvt ltd	300000
Prof. Sachin Jadhav	Process and product development	M/s. Amarjgot Chemical Corporation	100000
Prof.Anagha S. Sabnis	Process and product development	EPCOS India pvt ltd	30000
	Process and product development	Kansal Nerolac Paints	30000

	Process and product development	M/s. Pidilite Industries Limited	45000
	Process and product development	M/s. Axalta Coating System India Pvt Ltd	30000
	Process and product development	M/s. Dorfketal Chemical I Pvt Ltd (1st installment)	50000
	Process and product development	M/s. Nippon Paint I Pvt Ltd	30000
	Process and product development	M/s. Greend Coating Technology Pvt Ltd	36000
Dr. Hemchandra K. Chaudhari	Process and product development	M/s. Shreya Life Sci Pvt Ltd	150000
Dr. Vikas N. Telvekar	Process and product development	M/s. Zydus Taked Helthcare Pvt Ltd	75000
	Process and product development	M/s. Lasa Supergenerics ltd	50000
Prof. N. Sekar	Process and product development	M/s Essilor Research Development	450000
	Process and product development	M/s. Wool Research Association	25000
	Process and product development	M/s. Gopinath Chemtech Ltd	105000
Dr.K.S. Laddha	Process and product development	M/s. Pidilite Industries	150000
	Process and product development	M/s. Pidilite Industries	300000
Dr. Hitesh Pawar	Process and product development	M/s. ETD Parry I Ltd Chennai	900000
	Process and product development	M/s. Sintering Innovation Technology I Foundation	500000

Dr. S.V. Jadhav	Process and product development	M/s. Amarjyot Chemical Corporation	50000
Prof.G.D. Yadav	Process and product development	M/s. OEC Project Manager	40000
	Process and product development	M/s. OEC Project Manager	120000
			49632420.00

Assessment Year : 2020-21 (CAYm2)

Name Of The Consultant	Project Title	Name Of Company	Total Consultancy
Prof.S.S.Bhagwat	Process and product development	M/s. Unilever Industries Pvt Ltd	75000
	Process and product development	M/s. Unilever Industries Pvt Ltd	75000
	Process and product development	M/s. Unilever Industries Pvt Ltd	75000
Dr. Manish yadav	Process and product development	M/s. kiri industries limited	
	Process and product development	Total cons : 600000 (1st installment)	300000
	Process and product development	M/s. Aditya Birla Sci & Tech Ltd	600000
	Process and product development	M/s. Hindiuista Unileve Limited	300000
	Process and product development	M/s. UPL Limited	150000

	Process and product development	M/s. Galaxy Surfactants Limited	
	Process and product development	Total cons : 1045440 (only 1/3 amount inv)	1045440
	Process and product development	M/s. National Peroxide Limited	150000
Dr. Jyostna Waghmare	Process and product development	M/s. Hindiusta Unileve Limited	60000
	Process and product development	M/s. Unilever Industries Pvt Ltd	300000
	Process and product development	M/s. Unilever Industries Pvt Ltd	75000
	Process and product development	M/s. K V Fire Limited	150000
Dr. K.S. Laddha	Process and product development	M/s. Pidilite Industries	
	Process and product development	Total Cons : 300000/- (1st installment)	150000
	Process and product development	M/s. Pidilite Industries (2 nd installment)	150000
	Process and product development	M/s. Godrej Consumer Products limited	
	Process and product development	total cons :550000(1 st installment)	275000
Prof. B.N.Thorat	Process and product development	M/s. Covestro India Pvt Ltd	450000
Dr. Anand V. Patwardhan	Process and product development	M/s. Sadhana Nitro Chem Limited	300000
	Process and product development	M/s. Kwality Chemical Industries Pvt Ltd	300000
	Process and product development	M/s. VVF India Limited	300000
Prof. A.B.Pandit	Process and product development	M/s. Aegis Logistics Limited	300000

Prof.B.M. Bhanage	Process and product development	M/s. Siddharth Corbochem Products Limited	150000
	Process and product development	M/s. Fine Organic I limited	30000
	Process and product development	M/s. Shreyans Chemicals	45000
Prof. P.R. Gogate	Process and product development	M/s. Gujrat Gas Limited	
	Process and product development	Total Cons 240000/-(1 st installment)	120000
	Process and product development	M/s. Natural Remedies Pvt Ltd	
	Process and product development	Total Cons : (750000/- 1st installment 50%)	187500
Prof. Lakshmi kantam	Process and product development	M/s. Prasol Chemicals pvt ltd	100000
Prof. P.R. Gogate	Process and product development	M/s. Natural Remedies Pvt Ltd	
	Process and product development	2 nd installment (25 %)	993750
	Process and product development	M/s.Raills India Limited	250000
	Process and product development	M/s. Anshul Specialty Molecules	90000
Dr.V.K Rathod	Process and product development	M/s. Gujarat Gas Limited	120000
	Process and product development	M/s. Natural Remedies Pvt Ltd	
	Process and product development	Total Cos (750000/-) I installment 50%	187500
Dr. A.W Pathwardhan	Process and product development	M/s. Ralis I Pvt Ltd	500000
	Process and product development	M/s. Ralis I Pvt Ltd	
	Process and product development	Total Cos (550000/-) I installment (2 year)	25000
	Process and product development	M/s. Godavari Drugs Limited	120000
	Process and product development	M/s. Ralis I Pvt Ltd	

	Process and product development	Total Cos (1050000/-) I installment (19-20year)	275000
	Process and product development	M/s. Kosharch LLP	75000
	Process and product development	M/s. Ralis I Pvt Ltd	
	Process and product development	Total Cos (1050000/-) II installment (19-20year)	250000
	Process and product development	M/s. Khepra (USA)	
	Process and product development	Total Cos (900\$/-) I installment (300\$)	215601
Dr.V.K Rathod	Process and product development	M/s. Natural Remedies Pvt Ltd	
	Process and product development	Total Cos (750000/-) II installment 25%	93750
	Process and product development	M/s. UPL Limited	45000
Prof.P.A.Mahanwar	Process and product development	M/s. Grauer & Well I Limited	200000
	Process and product development	M/s. 3M India Limited	150000
	Process and product development	M/s. Kansai Nerolac Paints Limited	400000
	Process and product development	M/s. Krishana Conchem Products limited	300000
	Process and product development	M/s. Speciality Rain forcedmatrix Pvt Ltd	300000
	Process and product development	M/s. Master Builders Solusation Pvt Ltd	750000
	Process and product development	M/s. Asian Paints PPG Pvt Ltd	900000
	Process and product development	M/s. trumquil Specialty Products Pvt Ltd	110000
	Process and product development	M/s. Navi Mumbai Municipal Corporation ltd	350000
	Process and product development	M/s. Asian Paints PPG Pvt Ltd	30000

	Process and product development	M/s. Asian Paints PPG Pvt Ltd	270000
	Process and product development	M/s. Sika India Pvt Ltd	180000
	Process and product development	M/s. Dow Chemical Internatinal Pvt Ltd	90000
	Process and product development	M/s. Concerete Additives & Chemical Pvt Ltd	150000
	Process and product development	M/s. Conchem Labs LLP	60000
	Process and product development	M/s. Off Shore Infrastructures Ltd	30000
	Process and product development	M/s. Intigrated tribal Development project nashik	30000
	Process and product development	M/s. Asian Paints PPG Pvt Ltd	2604000
	Process and product development	M/s. Zigma Paints Pvt Ltd	40000
	Process and product development	M/s. Prakal Adhikani Ekatmik Vikas Prakalap	120000
	Process and product development	M/s. Vapi Products Industries pvt ltd	100000
Prof. Ashwin W. Pathwardhan	Process and product development	M/s. NOCIL	600000
Prof.P.G.Gogate	Process and product development	M/s. Rallis India Pvt Ltd	250000
	Process and product development	M/s. Rallis India Pvt Ltd	275000
	Process and product development	M/s. Rallis India Pvt Ltd	250000
	Process and product development	M/s. Rallis India Pvt Ltd	262750
Prof.P.D.Vaidya	Process and product development	M/s. Centre For Hight Technology	150000
	Process and product development	M/s. Centre For Hight Technology	150000
Prof.Sunil Bhagwat	Process and product development	M/s. Kiri Industries Limited	300000
Prof. G.S.Shankarling	Process and product development	M/s.Indo Borax & Chemicals	50000

		Limited	
	Process and product development	M/s. Colorband Dyest off Pvt Ltd	750000
Prof.P.D.Amin	Process and product development	M/s.Unilever Industries Pvt Ltd	400000
Prof. Hitesh Pawar	Process and product development	M/s. Sintering Innovation Technology I Funduation	
	Process and product development	I Installment 50 % (Total Cons 500000/-)	250000
	Process and product development	M/s. EID Parry I Ltd	
	Process and product development	I Installment 55 % (Total Cons 900000/-)	900000
	Process and product development	M/s. A.Energys Pvt Ltd	350000
	Process and product development	M/s. Sintering Innovation Technology I Funduation	
	Process and product development	II Installment 50 % (Total Cons 500000/-)	250000
Prof.M.S.Degani	Process and product development	M/s. Marico Limited	90000
Prof.U.S.Annapure	Process and product development	M/s. Vitanutrix Food & Feeds Pvt Ltd	150000
	Process and product development	M/s. Aditay Birla Sci & Tech	100000
	Process and product development	M/s. Mad Parsee Food LLP	100000
	Process and product development	M/s. Malavsian Plamoil Board	200000
Prof.G.D.Yadav	Process and product development	M/s. OEC Project Manager	120000
	Process and product development	M/s. OEC Project Manager	80000
	Process and product development	M/s. Rallis I Pvt Ltd	250000
Prof.Manish Yadav	Process and product development	M/s. Kiri Industries Limied	
Prof.S.S.Bhagwat & Prof. Manish	Process and product development	I Installment 50 % (Total Cons	150000

Yadav		600000/-)	
Prof.Amit Pratap	Process and product development	M/s. M.C. Dwivedi	50000
	Process and product development	M/s. Monopoly Innovation Pvt Ltd	30000
	Process and product development	M/s. Cdourtex Industries Pvt Ltd	30000
Prof.A.B.Pandit	Process and product development	M/s. Encore Natyral Polymers	1800000
	Process and product development	M/s. Technova Imaging System Pvt Ltd	900000
Prof. Ashok Athalye	Process and product development	M/s. Rossari Biotech Limited (June 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (July 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (Aug 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (Sep 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (Oct 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (Nov 2020)	41667
	Process and product development	M/s. Rossari Biotech Limited (Dec 2020)	83333
	Process and product development	M/s. Rossari Biotech Limited (Jan 2021)	83333
	Process and product development	M/s. Rossari Biotech Limited (Feb 2021)	83333
	Prof.C.S. Mathpati	Process and product development	M/s. Jayant Agro Organics Pvt Ltd
Process and product development		(Jan to March)I Installment	53751

Prof.V.H.Dalvi	Process and product development	M/s. Embio Limited	60000
	Process and product development	M/s. Ultramarine & Plgments ltd	
	Process and product development	I Installment (Total Cons 600000/-)	150000
	Process and product development	M/s. Zoetis Pharma Res Pvt Ltd	650000
	Process and product development	M/s. UPL Limited	
	Process and product development	I Installment (Total Cons 415000 /-)	175848
	Process and product development	M/s. Jayant Agro Organics Pvt Ltd	
	Process and product development	II Installment (March to May)	537511
	Process and product development	M/s. Jayant Agro Organics Pvt Ltd	
	Process and product development	II Installment (May to July)	537511
	Process and product development	M/s. UPL Limited	
	Process and product development	Total Cos (4150000/-) II installment	175848
	Process and product development	M/s. Ultramarine & Plgments ltd	
	Process and product development	II Installment (Total Cons 600000/-)	150000
	Process and product development	M/s. Jayant Agro Organics Pvt Ltd	
	Process and product development	IV Installment (July to Sep)	537511
	Process and product development	M/s Desha Enginer	60000
	Process and product development	M/s.02 - Matic Products Pvt Ltd	450000

Prof.C.S.Matpati	Process and product development	M/s. Embio Limited	60000
	Process and product development	M/s. Sudorghan Chemical I Limited	1500000
	Process and product development	M/s. Panorama Consulting	
	Process and product development	I Installment total Cons 90000/-	30000
	Process and product development	M/s. Panorama Consulting	
	Process and product development	II Installment total Cons 90000/-	60000
	Process and product development	M/s. Hindustan Organic Chemical Limited	600000
Prof. Vikas N. Telvekar	Process and product development	M/s. Lasa Supergenerics Limited	100000
Prof. Dipak V. Pinjari	Process and product development	M/s. Shiv Chem	300000
	Process and product development	M/s. Patil Synthtech	100000
	Process and product development	M/s. Indus water Institute Pvt Ltd	150000
	Process and product development	M/s. Progress lifesciences pvt ltd	600000
Prof. Angha S. Sabhis	Process and product development	M/s. Nippon Pain I Pvt Ltd	30000
	Process and product development	M/s. Axalta Coating System India Pvt Ltd	30000
	Process and product development	M/s. Greend Coating Technology pvt Ltd	36000
	Process and product development	M/s. Ultratech Chemical Limited	300000
	Process and product development	M/s. Precision Wires I Limited	100000
Prof.Vandana Patravale	Process and product development	M/s. Cadila Pharmaceuticals	500000
	Process and product development	M/s. Sahajananad Medical	745000

		Tech Pvt Ltd	
	Process and product development	M/s. TRM Ireland	
	Process and product development	I Installment 50% USD 2100	74025
Prof.Prashant S. Kharkhar	Process and product development	M/s. Godavari Biorefineris Limited	
	Process and product development	I Installment	750000
	Process and product development	M/s. Advent Chem Bio Pvt Ltd	
	Process and product development	II Installment	22500
	Process and product development	M/s. Godavari Biorefineris Limited	
	Process and product development	II Installment	187500
	Process and product development	M/s. Godavari Biorefineris Limited	
	Process and product development	III Installment	187500
	Process and product development	M/s. Godavari Biorefineris Limited	
	Process and product development	IV Installment	187500
	Process and product development	M/s. Godavari Biorefineris Limited	
	Process and product development	I Installment	750000
	Process and product development	M/s. TRM Ireland	
	Process and product development	II Installment	158907
	Dr. Shashank Mhaske	Process and product development	M/s. Akzo Nobel India Ltd
Process and product development		M/s. Essilor Res & Development	65000
Process and product development		M/s. Ultramarine & Plgments Ltd	
Process and product development		Total Cos (550000/-) I installment	182875

	Process and product development	M/s. Suyash Industpries	97500
	Process and product development	M/s Priamal Enterp. Ltd	330000
	Process and product development	M/s. Polnrann India Limited	50000
	Process and product development	M/s. 5peco Indfrastructure	130508
	Process and product development	M/s. Aditya Birla Sci & Tec Co.Pvt Ltd	87500
	Process and product development	M/s. Chugoku Paints I Pvt Ltd	796000
	Process and product development	M/s.Visen Instries ltd	160000
	Process and product development	M/s. Akzo Nobel India Ltd	80000
	Process and product development	M/s. SP Concare Pvt Limited	78000
	Process and product development	M/s. Rites limited	47000
	Process and product development	M/s. Maharashtra Jeevan Pradhikaran	37000
	Process and product development	M/s Growel Paints I Ltd	138000
	Process and product development	M/s. Master Builders Solusation Pvt Ltd	242000
	Process and product development	M/s. Encore Natural Polymars	510000
	Process and product development	M/s. Chugoku Paints I Pvt Ltd	899000
	Process and product development	M/s. Dynasoure Concrete pvt ltd	143000
	Process and product development	M/s, Hindustan Paints & Products	50000
Prof.R.N. Jagtap	Process and product development	M/s. Reliance Industries Limited	41667
Prof.S.S.Bhagwat	Process and product development	M/s. Hindustan Unilever Limited	
		(Final Installment 120000)	60000
Prof.U.S.Annapure	Process and product development	M/s. MPOB Malaysia	
		(Oct 2019 to Dec 2020) (125000

		Total Cons 250000/-)	
Prof. A.Vijay Kumar	Process and product development	M/s. 02 Matic Products Pvt Ltd	450000
Prof.V.H.Dalvi	Process and product development	(Total Cons 900000-)	
Dr. Sathish Dyawanapely	Process and product development	M/s. Vibar Nutripharma Solutions	100000
Prof. Sadhana	Process and product development	M/s. Abbot India Limited	25000
Prof.V.K.Rathod	Process and product development	M/s. Prasol Chemical Pvt Ltd	100000
Prof.V.K.Rathod and Prof.G.D.Yadav	Process and product development	M/s. Rail India Pvt Ltd	250000
Dr.Aarti More	Process and product development	M/s. Guru Paints Pvt Ltd	
		Total Cos (146300/-) I installment	36575
Dr. Annamma Odaneth	Process and product development	M/s. Lupin Limited	500000
	Process and product development	M/s. UPL Limited	300000
	Process and product development	M/s. UPL Limited	300000
	Process and product development	M/s. UPL Limited	300000
Prof.S.V.Joshi	Process and product development	M/s. Benzo Chem I Pvt Ltd	50000
Dr. Manju Sharma	Process and product development	M/s. Meera Clearfuls Limited	
		Total Cons 440000/- 50% Amount	220000
			44593829

Cumulative Amount (X + Y + Z) = 5838265657.00

6 LABORATORIES AND RESEARCH FACILITIES (75)

6.1 Adequate and well equipped laboratories in area of Program specialization (30)

Institute Marks (75)

Institute Marks (30)

Sr. No	Name of the Laboratory	Specialized Equipment Name	Equipment details	Utilization details from the perspective of PO attainment
1	DRL	Autoclaves	Hastelloy – 300 mL, 1 lit	PO1 PO4 – 40%
2	DRL	Autoclaves	SS 316 – 3 x 600 mL, 5 lit	PO1 PO4 – 40%
3	DRL	Pressure reactor	-	PO1 PO4 – 40%
4	DRL	Refrigerated & Heating Circulator	Julabo	PO1 PO4 – 90%
5	DRL	Lyophilizer / Freeze dryer	-	PO1 PO4 – 40%
6	DRL	Ice-Machine	-	PO1 PO4 – 90%
7	DRL	Oven	-	PO1 PO4 – 90%
8	DRL	Microwave reactors	-	PO1 PO4 – 75%

9	DRL	Parr hydrogenators	300mL, 600 mL	PO1 PO4 – 40%
10	DRL	Rotary evaporators	Heidolph	PO1 PO4 – 90%
11	DRL	High vacuum	-	PO1 PO4 – 90%
12	DRL	CVD furnace	-	PO1 PO4 – 30%
13	DRL	Muffle furnace	Labline	PO1 PO4 – 60%
14	DRL	Vaccum oven	Labline	PO1 PO4 – 60%
15	DRL	High Temperature Furnace	-	PO1 PO4 – 50%
16	DRL	Bath Sonicator	-	PO1 PO4 – 90%
17	DRL	Probe Sonicator	-	PO1 PO4 – 50%
18	DRL	Weighing Balance	-	PO1 PO4 – 100%
19	DRL	DI water system	MO-K-3	PO1 PO4 – 60%
20	DRL	Centrifuge machine	-	PO1 PO4 – 70%
21	DRL	Water bath shaker	-	PO1 PO4 – 60%
22	DRL	Tube furnace	-	PO1 PO4 – 40%
23	DRL	Ultra sound reactor	-	PO1 PO4 – 40%
24	DRL	Pellet Pres Machine	-	PO1 PO4 – 30%
25	New Dyes Building	Dye Sesnsitized solar cell	Exilir Technologies	
26	New Dyes Building	Electroluminescence- photoluminescence	Sinsil International	
27	New Dyes Building	Flow reactor	E-series easy medchem reactor/ vapourtec/SR.S1227/D3133	
28	New Dyes Building	IR spectrophotometer ATR	Alpha-II/ Bruker-Labindia	

29	New Dyes Building	Probe Sonicator	VCX-750-220/Ultra sonics processor	
30	New Dyes Building	TLC Extractor and Mass analyser	Expressions/Advion	

6.2 Research facilities / center of excellence (30)

Institute Marks (30)

Sr. No	Name of the Facility	Specialized Equipment Name	Equipment details	Utilization details from the perspective of PO attainment
1	Analytical Lab	Gas Chromatography (GC)	Chemito	PO1 PO4 PO5-100%
2	Analytical Lab	HPLC	Jasco	PO1 PO4 PO5-100%
3	Analytical Lab	FTIR	Jasco	PO1 PO4 PO5-100%
4	Analytical Lab	UV-Visible	Jasco	PO1 PO4 PO5-100%
5	Analytical Lab	Spectrophotometer	-	PO1 PO4 PO5-100%
6	Analytical Lab	Spectrofluorimetry	Jasco	PO1 PO4 PO5-20%
7	Analytical Lab	Particle size analyzer	Cilas	PO1 PO4 PO5-50%
8	Analytical Lab	Thermo gravimetric analyzer	Simultaneous DSC – TGA, Waters	PO1 PO4 PO5-50%
9	Analytical Lab	NMR	500 MHz (Sanctioned under	PO1 PO4 PO5-100%

			Prime Minister's Project) Agilent	
10	Analytical Lab	Cyclic Voltammetry	-	PO1 PO4 PO5-20%
11	Analytical Lab	Simultaneous DSC-TGA	-	PO1 PO4 PO5-60%
12	Analytical Lab	Polarimeter	-	PO1 PO4 PO5-20%
13	Analytical Lab	Water contact angle	-	PO1 PO4 PO5-10%
14	Analytical Lab	Resistivity meter	-	PO1 PO4 PO5-10%
15	Pigment House	Analytical mill and homogenizer	-	PO1 PO4 PO5-60%
16	Pigment House	Automatic draw down assembly	-	PO1 PO4 PO5-0%
17	Pigment House	Automatic pigment Mueller	-	PO1 PO4 PO5-0%
18	Pigment House	Automatic vibroshaker	-	PO1 PO4 PO5-40%
19	Pigment House	Ball mill	-	PO1 PO4 PO5-40%
20	Pigment House	Kneader	-	PO1 PO4 PO5-0%
21	Pigment House	Mars mill	-	PO1 PO4 PO5-40%
22	Pigment House	Planetary ball mill	-	PO1 PO4 PO5-40%
23	Pigment House	Sand mill	-	PO1 PO4 PO5-40%
24	Analytical Lab	Flash chromatography	-	PO1 PO4 PO5-30%
25	Analytical Lab	Mass spectrometer	-	PO1 PO4 PO5-50%
26	Analytical Lab	BET surface area analyzer	-	PO1 PO4 PO5-40%

6.3 Access to laboratory facilities, training in the use of equipment (15)

Institute Marks (15)

Name of Equipment / facility	Training Given By
FTIR	Bruker

NMR 500 MHz	Agilent
Flash chromatography	Yamzeen Flash
Probe Sonicator	Inkarp
UV Visible Spectroscopy	JASCO/Anateck
Spectrofluorometer	JASCO/Anateck
Rotary Evaporator	IKA
Dye Sensitized Solar Cell	Exilir Technologies
EL-PL instrument	Sinsil International
Mass Analyzer	Expression-s/Advion

7 CONTINUOUS IMPROVEMENT (75)

Institute Marks (75)

7.1 Actions taken based on the results of evaluation of each of the POs (25)

Institute Marks (25)

Primary ways to improve POs were considered as follows,

Being one of the premier departments in the country on Dyestuff Technology, and one of a kind in India, this department offers best teaching, learning process through low teacher-students' ratio, direct interaction with the experts from specialised industry, Industry visit, mandatory industry internship, hand on experience in analytical instruments during practical and research on thesis projects.

The department of dyestuff technology has been engaged in promoting basic and advanced knowledge in dyestuff and intermediate technology, cutting edge research and technical skill, and level of problem-solving aptitude among the post-graduating students.

In addition, considering rapidly developing technology, students with varied intellectuality and background, audio-video portions were incorporated in the teaching methods. Teachers are encouraged to attend subject specific short-term courses and also on pedagogical methods.

In parallel, department organises various workshops, symposium and conferences where attendance of Post graduate students is made compulsory. Department of dyestuff technology is one of the organising partners of international Convention on Colorants (COC; <http://conventiononcolorants.org/> (<http://conventiononcolorants.org/>)). It also organises National Symposium on functional application of Colorants in the ICT premises where students from the department take part.

Furthermore, the target value of PO attainment was more than 70%. In the year of 2016, and 2017, there was no master student in the department. However, in the year 2018, the department achieved more than 70% PO attainment for all the POs. The department put forwards constant efforts to maintain and improve the PO attainment.

Comment on Overall improvement on PO Attainment

PO	Target Value	Attainment	Observation
PO1: An ability to independently carry out research /investigation and development work to solve practical problems			
PO1	>70%	2018-2020 = 79.09% 2019-2021 = 82.57% 2020 – 2022 = 72.84%	Compulsory in-plant training, interaction with experts from the industry through workshops has been included. Moreover, research component of the curriculum has been revised.
Action: Trying to maintain the level and targeting for higher.			
PO2: An ability to write and present a substantial technical report/document			

<p>PO2</p>	<p>>70%</p>	<p>2018-2020 = 79.65% 2019-2021 = 83.20% 2020-2022 = 74.54%</p>	<p>The submission of technical report including PPT presentation in form of Seminar followed by questionanswer session by experts, and peers.</p> <p>This is mainly associated with Research I, II, III and Industrial Training.</p> <p>Writing both rough and fair lab journals and submission for faculty comments are also made compulsory to emphasize this PO2.</p>
<p>Action: Trying to maintain the level and targeting for higher.</p>			
<p>PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program</p>			
<p>PO3</p>	<p>>70%</p>	<p>2018-2020 = 80.38% 2019-2021 = 82.76% 2020-2022 = 76.09%</p>	<p>For better teaching learning method, classroom has been modernised.</p> <p>Showing and demonstrating concepts through AV systems are encouraged among faculties.</p> <p>Analytical lab has been</p>

			<p>modernised and equipped with advanced instruments. Students are given chance to operate and learn instrumentation, sample preparation and analysis during their research work. The details of application based industrial Training also helped in solving practical problem related to dyestuff technology.</p>
<p>Action: Trying to maintain the level and targeting for higher</p>			
<p>PO4: An ability to use and evaluate modern techniques or tools applied in dyestuff technology for product and process development and for analysis.</p>			

<p>PO4</p>	<p>>70%</p>	<p>2018-2020 = 82.72% 2019-2021 = 85.05% 2020-2022= 73.47%</p>	<p>Analytical lab has been modernised and equipped with advanced instruments. Students are given chance to operate and learn instrumentation, sample preparation and analysis during their research work.</p> <p>The details of application based industrial Training also helped in solving practical problems related to dyestuff technology.</p> <p>In addition, application orientated practical, on-hand training on formulation, research and management based in plant training also helps.</p>
<p>Action: Trying to maintain the level and targeting for higher.</p>			
<p>PO5: An ability to analyses problems and offer solutions related to Dyestuff and intermediates,Pigments and colorants industry.</p>			

PO5	>70%	2018-2020 = 82.09% 2019-2021 = 85.57% 2020-2022= 74.17%	Attending workshops, symposium and international conferences are regular for students in the dyestuff department, where students get exposure of scientific and panel discussion of experts invited from different universities and industry. Students get to know various problems associated to the subject and best possible solutions.
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Concern Raised from the AY2017-18	Action Taken	Related PO
Science and Engineering component of the program	Audio-visuals have been incorporated during the demonstration.	PO3
Practical problem-Solving ability of students needs attention	Hand on experience during practical, in-plant training has been revised. More research component has been included. Students are encouraged to attend conferences and workshops.	PO1 PO2, PO4 and PO5

Quality of Project and paper publication	The M.Tech Project Component has been divided to Semester I, II and IV. Partial research components are distributed on Sem I and Sem II. Semester IV is entirely devoted to research. More creative, innovation-oriented application-based research component has been included in the thesis work.	PO1, PO2, PO3, PO4
Qualifying GATE exam	Students are encouraged to consult faculties for the preparation and faculties are also instructed to help students if approached	All POs

7.2 Improvement in Quality of Projects (10)

Institute Marks (10)

M. Tech From Department Of Dyestuff And Intermediate Technology, Graduated Batch 2018-2020.

Roll No	Student Name	Thesis title	Broad Area of Specialization
18DYE201	Aadeshkumar L . Chordiya	Synthesis of anthraquinone and phthalimide derivative and solar absorptive black pigment	Synthesis properties study.
18DYE203	Praful Suresh Patil	Anthrone based Azo Functional dyes	Synthesis and functional application
18DYE204	Aditi Mate	Design, synthesis and photophysical studies of novel anthraquinone dye.	Photophysical Properties Dyestuff Synthesis and colorants.

M. Tech From Department Of Dyestuff And Intermediate Technology Batch 2019-2021

Sr. No	Roll No.	Name of Student	Thesis Title	Broad Area Specialization
1.	19DYE202	Aishwarya Shashikant Barshi	Thiophene based azo dyes & its applications	Synthesis, and application
2.	19DYE203	Amar Ranjit Singh	Photocatalytic Degradation of Dyes Using Nanoparticles	Synthesis, and application
3.	19DYE204	Ashok GaneshKhillare	Purification and anti-microbial application of a natural dye on natural fibre	Natural dyes and application
4.	19DYE205	Gauri Sanjay Ingole	Synthesis & application of 9- methoxy anthracene based dyes	Synthesis and application
5.	19DYE206	Harsh M Patel	Synthesis of Anthraquinone Dyes	Synthesis and application
6.	19DYE207	Krusha KiranbhaiPatel	Synthesis of Anthraquinone Intermediate	Synthesis and application
7.	19DYE208	Mahesh Ajit Gore	Formulations in permanent hairdyes	Synthesis and application
8.	19DYE209	Mustafa MChhatariya	Carbazole Based Donor Acceptor Dyes And Their Photophysical Studies	Synthesis Application and Photophysical Studies.
9.	19DYE210	Pratiksha DasharathKhade	Studies on extraction and stability of natural dye	Natural dyes
10.	19DYE211	Roshni Patil	Molecular Engineering Of Benzofuran Based Molecules For Enhanced Solid State Emission	Synthesis and photophysical study
11.	19DYE213	Swapnil Rindhe	Synthesis Of Thiophene Based Dyes	Synthesis and application
12.	19DYE215	Viraj Netaji Sable	Synthesis and characterization of photocatalytic phthalocyanine dyes and study its applications	Synthesis phthalocyanine dyes and application

13.	19DYE216	Monika MadhavraoJadhav	Removal of Dyes by Using Nanocomposite	Nanocomposites And its application.
14.	19DYE217	Puja Suresh Sangle	Improving lightfastness of naturaldyes	Natural Dyes and its application

M. Tech Dyestuff and Intermediate Technology, Graduating in 2022				
Sr. No.	Enrolment No	Student Name	Thesis Title	Broad Category of subject
1	20DYE202	Harshada Kashinath More	Near infrared absorbing coumarin dyes	Synthesis and application
2	20DYE204	Prerna Amit Patni	Design and Development of water soluble luminogens	Synthesis and application
3	20DYE205	Ruchita Prabhakar Khade	Design and Development of Chiral AIEgens	Synthesis and application
4	20DYE207	Vaibhav Pandurang Chavan	Antimicrobial dye for odourless fabric materia	Synthesis and application
5	20DYE209	Anushree Manohar Gawde	Green and effecient synthesis of Anthraquinone derivative	Synthesis and application
6	20DYE210	Ketki Rajaram Vishe	Flourescent reactive dye	Synthesis and application

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)

Institute Marks (10)

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	2020-21 (CAY)	2019-20 (CAYm1)	2018-19 (CAYm2)	2017-18 (CAYm3)	2016-17 (CAYm4)
Sanctioned intake of the program(N)	18	18	4	4	4
Total number of students admitted through GATE (N1)	0	1	0	0	0
Total number of students admitted through PG Entrance and others (N2)	6	14	3	0	0
Total number of students admitted in the programme(N1 + N2)	6	15	3	0	0

Year of entry	N1 + N2 (As defined above)	Number of students who have successfully graduated	
		I year	II year
2020-21 (CAY)	6		
2019-20 (CAYm1)	15	15	
2018-19 (LYG)	3	3	3
2017-18 (LYGm1)	0	0	0
2016-17 (LYGm2)	0	0	0

Item	CAYm1(2020-21)	CAYm1(2019-20)	CAYm2(2018-19)	CAYm3(2017-18)
Total No of students admitted in first year(N)	17.00	3.00	0.00	0.00
No of students placed in the companies or goverment sector(X)	8.00	2.00	0.00	0.00
No. of students pursuing Ph.D. / JRF/ SRF(Y)	0.00	1.00	0.00	0.00
No of students turned entrepreneur in engineering/technology (Z)	0.00	0.00	0.00	0.00
Placement Index [(X+Y+Z)/N] :	0.470	1.00	0.00	0.00

Average Placement [(P1 + P2 + P3)/3] : 0.49

Assesment [20 * Average Placement] : 9.80

7.4 Improvement in the quality of students admitted to the program (10)

Institute Marks (10)

Gate Score	2020-21 (CAY)	2019-20 (CAYm1)	2018-19(CAYm2)
Highest Score	23.00	27.00	27.00
Minimum Score	19.00	13.00	17.00

7.5 Improvement in quality of paper publication (10)

Institute Marks (10)

There are no publications by Master students from the program under consideration. Therefore, emphasis is given on the quality improvement of the research component given for their thesis work and parallelly raising their analytical skill by giving them hand on experience to handle instruments.

Hence, the improvement in quality of publications from the faculty members participating in the programs offered by the department is presented below:

- The cumulative impact factor of the journal publications has been increased from Graduating year 2017-18 to 2019-2020.
- As discussed earlier, the quality of thesis work has been improved in last three years and it is reflecting through publications, as depicted in the table and the pictogram below.
- Inclusion of synthesis, characterization, characterization and application oriented project work into the research component resulted in the improved quality of research publication. Participation in workshop and various seminars added into their motivation for international standard research work also caused the improvement.

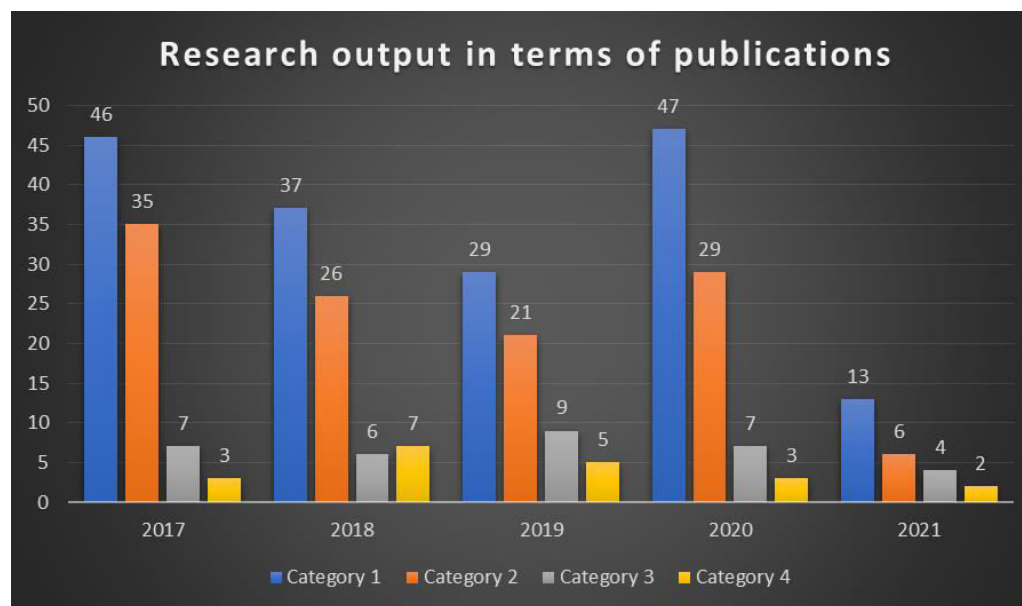
All the journals are of high standard international journals. The examples of journals include

- ACS Sus Chem Eng
- ChemSusChem
- ACS applied Materials and Interfaces Green chemistry
- Sensors and Actuators B:Chemical Carbon
- Trends in Food Science and Technology Ultra sonics Sonochemistry
- Chemical Communications Bioresource Technology

Table for the improvement in the quality of paper publication (2017 – 2021)

Sl. No.	Year	Impact factor of the journals			
		Category 1 (IF 1-3)	Category 2 (IF 3-5)	Category 3 (IF 5-7)	Category 4 (IF >7)
1	2017	46	35	7	3
2	2018	37	26	6	7
3	2019	29	21	9	5
4	2020	47	29	7	3
5	2021	13	2	4	2

Total High Impact factor journals (IF>7) published since 2017 = 20



7.6 Improvement in laboratories (10)

Institute Marks (10)

Dye Sensitized Solar Cell



Electroluminescence- Photoluminescence



TLC Extractor and Mass Analyser



Flow Reactor



Whole laboratory building of the department of dyestuff technology has been newly developed to attain the state-of-the art facility for research and learning and analysis in the area of Dyestuff and intermediate Technology. The laboratory development work was sponsored by Colourtex India.

This laboratory helps all the M.Tech. and Ph.D. students to carry out their research smoothly. The laboratory is equipped with thirteen fume hoods, all connected with centralized high vacuum pump and inert gas line.



The laboratory has been designed following international safety standards. Laboratory has been equipped with various major and minor instruments required for the research and learning the subject. This laboratory helps all the M. Tech and Ph. D students to carry out their research smoothly.



Analytical lab in the building has been modernized with state of the art facilities for research and analysis required for many UG –PG practical. This renovated modern lab is used by UGs, PGs, and Ph. D and renovation led to more spacious laboratory place equipped state-of-art high tech instrumentation facilities pertaining to the dyestuff and Intermediate Technology. This makes research and learning an enjoyable experience for students and faculty both. Thus, this facility definitely helps in increasing output and efficiency, in terms of the research publication. This also reflects in student's demand that more number of students are constantly getting job offers not only from domestic companies but also international companies.



Annexure I

PROGRAM OUTCOMES (POs)

PO1 : An ability to independently carry out research /investigation and development work to solve practical problems

PO2 : An ability to write and present a substantial technical report/document

PO3 : Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program

Annexure II Syllabus of the Course

Semester	Subject code	Subject Name
I	DYT2101	Advances in Chemistry and Technology of Colorants
	DYT2102	Specialty chemicals Chemistry and Technology
	DYT2103	Unit process and operations in speciality chemicals industry
	DYP2004	Seminar and Critical Review
	DYP2001	Advanced Unit Process and Formulations Laboratory
	DYP2003	Research-1
II	DYT2106	Crop Protection Chemicals
	DYT2109	Organic Materials for Electronics
	DYT2108	Formulations in fine chemicals industry

	DYT2110	Elective-I Biosensors Elective: Industrial Waste Management
	DYT2017	Elective-II Mechanisms of Organic Reaction
	DYP2002	Chemical Business Design
	DYP2005	Research-2
III		In plant training
IV		Research, Thesis and Open defense

Course Title: Advances in Chemistry and Technology of Colorants (DYT 2101)

Sr. No.	Topic	Hrs
1	Colorants: History and Advancement: History of dyestuff industry, Important breakthroughs, commercialization and growth	3
2	Colorants for Textile Applications: Origin of colour, Classification of different classes of dyes, Dye classes for principle applications in textile dyeing (acid dyes, direct dyes, reactive dye, disperse dye, vat dye, sulfur dye, basic dye and solvent dye), Principles of dyeing, Modern methods of dyeing, Food colorants, fluorescent brighteners and optical whitening agents, Environmental issues, Waste water treatment and dye removal from waste water.	10
3	Pigments in the colorant industry, Classification of organic pigments-Azo, Anthraquinone pigments, DPP pigment, Phthalocyanin pigment, Quinacridone pigment etc. Properties of pigments and pigment dispersion.	5
4	Functional colorants: Interactions of functional dyes, Colorants for electronics, Colorants for reprographics (electrophotography, ink jet printing), Colorants for biomedical applications, Laser dyes, Thermochromic dyes, Photochromic dyes, Electrochromic dyes, Piezochromic dyes, Dyes for molecular recognition-fluorescent probes, Hair dyes, Leather dyes,	10
5	Structural colors: Nano-optics in the biological world	2

Course Title: Specialty chemicals Chemistry and Technology (DYT2102)

Sr. No.	Topic	Teaching Hours
1.	Brief discussion on handling of solvents, solvent recovery, IPR issues.	3
2.	Chemistry of some advanced dyestuff intermediates, agrochemical, pharmaceutical intermediates, perfumery and flavor intermediates, chiral chemistry and their Retrosynthesis.	15

3.	Discussion on manufacture and application of some specialty chemicals.	12
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Course Title: Unit process and operations in speciality chemicals industry (DYT2103)

Sr. No.	Topic	Teaching Hours
1.	Feedstock for chemical industry- Basic Raw materials: Fossil feedstock, Petroleum and coal based raw materials, history and development	02
2.	Introduction of Functional groups into benzene, naphthalene and Anthracene technology involved Basic Unit processes: Sulphonation, Nitration, Reduction, Halogenation, amination etc, Reaction phenomenon and conditions, Reaction agents and solvents, Work up and Material of construction, Plant and process flow, Safety and process control parameters	15
3.	Basic Unit Operations: Importance of agitation in batch reactors, consequences of poor agitation, axial and radial flow, kinds of stirrers used, power number etc Distillation, Filtration, Crystallization – solubility, saturation, super saturation, particle size and distribution, equipment Heat transfer in jacketed batch and semi reaction vessels, effect of scale-up, exothermic reactions, cooling fluids employed, runaway reactions – case studies and prevention, cooling towers and boilers	06
4.	Chemistry and Technology of some advanced dyestuff intermediates, agrochemical and other specialty chemicals Case studies of commercial dyes, pigments, Specialty chemicals like: Flavors, fragrances, agrochemicals, pharmaceuticals, cosmetics etc.	05
5.	Brief discussion on fine chemical industry with examples of some global fine chemical companies	02

Course Title: Advanced Unit Process and Formulations Laboratory (DYP2001)

Sr. No.	Topic	Practical Hours
1.	Unit processes (Nitration, sulphonation, reduction, oxidation, etc) for intermediates, plant and block diagram, calculation of e-factor, atom economy, selectivity and yield of the product, PCT for the synthesis and MOC, Cost analysis, literature of best possible greener route/ alternate route for the synthesis of the compound.	24
2.	Synthesis of dyes and intermediates purification techniques, analysis, scale up parameter study	08
3.	Synthesis of dyes, application techniques, color measurements	06
4.	Synthesis of pigments, physical properties, purification	08
5.	Formulation of ink and /or paint using synthesized dyes and pigments, Formulation by use of commercial dyes and pigments for inks, paints	08
6.	Formulation of fragrances, soaps, cosmetics and other specialty chemicals	06

Course Title: Crop Protection Chemicals (DYT2106)

Sr. No.	Topic	Practical Hours
1.	<p>General Introduction: Definition, importance & classification of agrochemicals. Classification of pesticides on chemical nature and according to target species, mode of action. Classification of insects and pests-Public health pests/Agricultural pests/Domestic pests/Animal husbandry pests/Plant pests etc. Toxicity (acute and chronic toxicity in mammals, birds, aquatic species etc.). Causes of outbreak of pest growth & development. Insect pest control in agro chemistry- Principle and practices.</p>	3
2.	<p>Pesticide Formulations, Techniques and Analysis- General aspects: definition, objectives, process, purpose, product spectrum, classification, formulation codes etc. Equipment used in preparation of formulations. Precautions in the use of pesticides.A brief introduction on methods of analysis of physical properties of formulations- Suspensibility, wettability, Emulsion stability, wet sieve test, acidity, alkalinity, moisture content, Flash Point, Specific gravity, Persistent foaming, water runoff test, dry sieve test etc. Regulations and Quality- Brief introduction on the packaging of pesticide products. Pesticide application techniques and devices used – Dusters and sprayers, types of nozzles etc. Calculation of amount of formulation required for field application.</p>	5
3.	<p>Pesticides Synthesis and Manufacturing Technology- Retrosynthesis of Agrochemicals. Following classes of pesticides are to be studied -Hydrocarbons, Halogenated hydrocarbons, carboxylic acids, phenols, amines, amides, aryloxy-carboxylic acids, organophosphorous, heteroaromatic pesticides etc. Important reactions namely Michaelis-Arbuzov reaction, Perkow reaction, Thiono-thiolo rearrangement involved in the preparation, properties of important pesticides. Manufacturing processes of some commercially important pesticides.</p>	10
4.	<p>Pesticides and Environmental Risk Assessment: Movement, Degradation and Metabolism of Pesticides-Theory Movement and fate of pesticides in environmental components like soil, air, water, flora and fauna, and other non-target organisms. Fate and adverse effects of pesticides on them. Decontamination of pesticides through physical, chemical, photochemical, microbial, enzymatic and biotechnological techniques. Ground water decontamination; Movement in plant, animal and other living systems: Penetration,</p>	3

	translocation, excretion etc. Persistence – factors affecting (physical, chemical, biochemical etc.), primary and secondary metabolites in plants and animals with examples. Different methods of pesticide disposal (physical, chemical, incineration and soil treatment). Disposal of industrial effluents and related xenobiotics.	
5.	Pesticidal Residue Analysis and analytical Techniques in Pesticide Chemistry - Application of analytical techniques for residue analysis such as spectrophotometry, chromatography including GC, HPLC, GC-MS, LCMS and ELISA etc.	5
6.	Recent advances in pest control: Green Chemistry in pesticides- insect attractants, chemosterilents and repellents, mode of action and Applications. Tactics and strategies of Integrated Pest Management. Management of insects and diseases in stored agricultural commodities, side effects of applications etc.	2

Course Title: Organic Materials for Electronics (DYT2109)

Sr. No.	Topic	Teaching Hours
1.	Materials' Foundations: Introduction	1
2.	Electronic Structure: Atomic Structure, Electrons in Atom, Filling of Orbitals, The periodic table	2
3.	Chemical Bonding: Bonding Principles, Ionic Bond, Covalent Bond, Metallic Bond, Van der Waals Bonding, Hydrogen Bonding	3
4.	Bonding in Organic Compounds: Hybridized Orbitals, Isomers, Double and Triple Bonds	3
5	Crystalline and Noncrystalline Materials: States of Matter, Phase Changes and Thermodynamic Equilibrium, Crystal Lattice, Crystal Systems, Miller Indices, Distance Between Crystal Planes, Defects, Amorphous Solids	3
6	Polymers: Molecular Weight, Polymer Structure, Polymer Crystallinity	3
7	Soft Matter: Emulsions, Foams, Gels and Diffusion	1
7	Electrical Conductivity: Classical Theory, Electrical Conductivity, Charge Carrier Mobility, Fermi Energy Bands in Solids, Conductors, Semiconductors and Insulators, Electrons and Holes, Intrinsic and Extrinsic Conduction, Organic Compounds, Band Structure, Doping, Solitons, Polarons and Bipolarons	3
9	Electroactive Organic Compounds: Moles and Molecules, Acids and Bases, Ions, Solvents, Functional Groups, Aromatic Compounds, Conductive Polymers, Charge-Transfer Complexes, Buckyball's and Nanotubes, Fullerenes, Carbon Nanotubes, Piezoelectricity, Pyroelectricity and Ferroelectricity, Magnetic Materials, Basic Principles, Organic Magnets	6

10	Tools for Molecular Electronics: Direct Imaging, X-ray Reflection, Electron Diffraction, Raman Scattering Surface Analytical Techniques, Scanning Probe Microscopies, Film Thickness Measurements, Infrared Spectroscopy, NMR Spectroscopy, Mass Spectroscopy	10
11	Applications: Dye sensitized solar cell, Organic light emitting diode, Organic transistor, Flexible Electronics, etc.	10

Course Title: Formulations in fine chemicals industry (DYT 2108)

Sr. No.	Topic	Teaching Hours
1.	Introduction to formulations, basics of formulations, types of formulation etc	02
2.	Formulation development and technology in cosmetics like crèmes, lotions, other toiletries	06
3.	Formulation requirement and importance of formulations in pharmaceuticals (Considering food dye and coatings) and agrochemicals	04
4.	Components of formulation, types and basis of formulation for fragrances and flavors	04
5.	Ingredients and parameters used for the formulation in inks, paints, other high tech applications of colorants including inkjet printing ink, CD-DVDs, security colorants etc.	08
6.	Formulation study for textile and non textile applications of colorants	06

Course Title: Elective-I Biosensors
Elective: Industrial Waste Management (DYT2110)

Sr. No.	Topic	Hrs
1	General concept sensing and elements of biosensing	6
2	Antibodies and other recognition elements	6
3	Modes of recognition	6
4	Fluorescence based sensing	6
5	Fluorescent dyes in biosensing	6

Sr. No.	Topic	Hrs
1	Waste – Characteristics, Types and Generation	6
2	Solid Waste Management – Creation of Resource. Recent Trends in Composting. Handling gaseous and particulate effluents.	6
3	Recycling and Reuse – Plastics, Metals and Other Useful Materials Waste-to-Energy – The Recent Advances	6
4	Transition from Wastewater Treatment Plant (WWTP) to Water Resource Recovery Facility (WRRF)	6
5	Sustainability of Waste-to-Wealth Technologies Application of the Principles of Circular Economy	6

Course Title: Elective-II Mechanisms of Organic Reaction (DYT2107)

Sr. No.	Topic	Teaching Hours
1.	Discussion and revision of concepts – elimination reactions, electrophilic aromatic substitution and nucleophilic aromatic and nucleophilic aliphatic substitution reactions, electrophilic addition to alkenes and controlling the geometry of double bonds.	8
2.	Neighboring group participation, conjugate addition of enolates, alkylation of enolates, reactions of enolates with aldehydes and ketones, and acylation at carbon, enamine formation and application.	5
3.	Discussion on mechanism of organic reactions and Retrosynthesis: Rearrangement reactions, cycloaddition reaction, sigmatropic, electrocyclic reactions and organometallic chemistry.	10
4.	Study of intermediates: carbocations, carbanions, carbenes, nitrenes, free radicals their stability, arenium ions and benzyne formation and reactions.	7

Course Title: Chemical Business Design (DYP 2002)

Sr. No.	Topic	Practical Hours
1.	Development of the idea for the synthesis of any intermediate, product or specialty chemical, Selection of process for the synthesized product and laboratory scale development, retro synthesis	12
2.	Market survey, applications of the designed product, area of utility like FMCG or B2B marketing	08
3.	Literature survey to study the existing routes for the selected product, DOE for the selected process, modification in the existing process	10
4.	Raw material analysis, costing, process development, Block and plant diagram, utility study, plant designing	08
5.	Scale up study, study of effluents, ETP, safety norms, IPR	12
6.	Project economics, Cost analysis, Product marketing, innovative ideas to expand the business and establishment	10

Declaration

The head of the institution needs to make a declaration as per the format given –

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines in force as on date and the institutes shall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute will be initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, post-visit and subsequent to grant of accreditation.

Head of the Institute

Name : Professor A B Pandit

Designation : Vice Chancellor

Signature :



Seal of The Institution :



Place : Mumbai

Date : 12-01-2022 12:50