

# INSTITUTE OF CHEMICAL TECHNOLOGY, MUMBAI

Mumbai | IOC Bhubaneswar | Marathwada Jalna

Category I Deemed to be University (MHRD/UGC)  
Elite Status and Centre of Excellence, Govt. of Maharashtra

[www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)

# HANDBOOK | 2020-21

▼ ICT Mumbai Campus



INSTITUTE OF CHEMICAL TECHNOLOGY MI  
INDIANOIL ODISHA CAMPUS BHUBANESWAR

CENTRE OF EXCELLENCE IN RESEARCH & INNOVATION

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

▲ ICT Mumbai-IOC Bhubaneswar Campus

INSTITUTE OF  
C  
MARATHWADA JALNA

▲ ICT Marathwada Jalna Campus

## VISION

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

## MISSION

- We shall generate and sustain an atmosphere conducive to germinating new knowledge at every available opportunity.
- The education we shall impart will enable our students to devise new solutions to meet the needs of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources.
- Our endeavors, while extending well beyond the confines of the classroom, will aim to enhance public welfare and our attempts to dissipate 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.

## PLEDGE

I AM ICTian. This is my institute, I take deep pride, but without vainglory; to it I owe solemn obligations that I am eager to fulfil. I Climb These steps into a grand shrine of knowledge and portal of excellence. I am privileged to be a part of a great tradition, rich culture and ethos built by selfless services of great many individuals. I take great pride in its achievements and eminence. I will be in a company of knowledge seekers, givers and servers. It will be my endeavor to protect its reputation and legacy. I will participate in none but honest enterprise. I shall shun prejudice of all kinds and perform actions that are deemed righteous morally, ethically, professionally and legally. To my fellow I pledge, in the same full measure I ask of them, integrity and fair dealing, tolerance and respect, and devotion to the repute and dignity of our institute; with the consciousness, always, that our special expertness carried with the obligation

TO SERVE ICT, INDIA AND MANKIND WITH COMPLETE SINCERITY.

# HANDBOOK: 2020-2021



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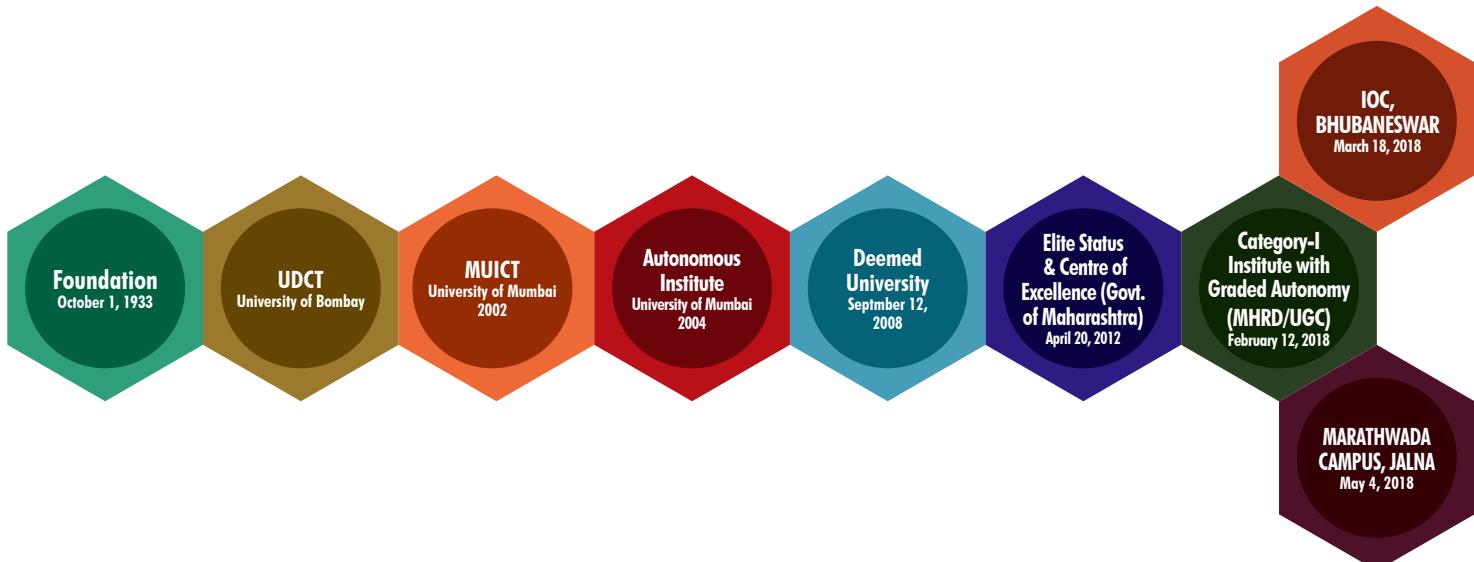
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**INSTITUTE OF CHEMICAL TECHNOLOGY**  
Mumbai





## 1.1 IMPORTANT INSTRUCTIONS

The fees for the submission of a single form for a particular course at ICT are as follows

| Course                          | Open Category | Reserved Category ** |
|---------------------------------|---------------|----------------------|
| Undergraduate and Post graduate | Rs. 1000/-*** | Rs. 500/-***         |

\*\* Fees for Reserved Category candidates are applicable to the candidates from the State of Maharashtra only.

\*\*\* The payment for the same should also be made online (extra online charges may apply)

3. The admission form for the academic year 2020-21 should be filled online on the ICT website, <http://www.ictmumbai.edu.in>
4. Anybody, not belonging to the Reserved Category, found buying application form under that category will be disqualified.
5. Please read the Handbook carefully before filling the admission form.
6. Due to circumstances beyond control of authorities, the schedule of admission may change and it will be notified on the website. Candidates are advised to watch the website regularly.
7. Merit list/ schedule of admission rounds for all PG courses will be displayed on [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in) and the ICT Notice Board. Please note that no individual correspondence will be made in this regard and it is the responsibility of the candidates to visit the webpage regularly. PG candidate must visit ICT website time to time to check the timetable for written test and interview and changes if any.
8. Pleading ignorance about information displayed on the web shall not be entertained.
9. Admission to hostel on the Main Campus in Mumbai is as per the rules laid down and the quota for various courses.
10. Merit is the only criterion for admission to any course and seats are reserved as per Government of Maharashtra's directives in this connection for campuses in Mumbai and Jalna. The Bhubaneswar campus will follow the all India criterion.
11. Biometric attendance system is adopted for all classrooms and lectures are recorded. An auto generated message is sent to the student and his/her registered parent/guardian at 9.00 pm if the student has missed any lecture. Thus, a record is available to ICT authorities on real time basis.
12. There are no agencies operating on behalf of the institute and there is no capitation fee or donation in regard of admissions. Be careful of any persons claiming to offer admission to the ICT or knowing authorities. No extraneous considerations should be brought to exert pressure on the Admission Committee. It will be strictly dealt with. We take pride in fairness and openness in admissions and all matters and give justice to one and all.
13. All correspondence regarding admissions should be addressed to the Registrar, Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai-400019 ([admission@ictmumbai.edu.in](mailto:admission@ictmumbai.edu.in); +91-22-33611111/ 2222; Fax: +91-22-33611020).



## 1.2 APPROACH ROUTES TO ICT AND LANDMARKS

A location map of the ICT, available on Google maps, is provided above and the various access routes are described from nearby railway stations, bus stops and the airport.

### **Landmarks in the vicinity of ICT**

The VJTI (Veermata Jijabai Technological Institute) (Backside), Khalsa College, Don Bosco School and Church are well-known landmarks adjacent to the ICT on the Nathalal Parekh Marg. The Main Security Hub of ICT prominently depicts its name both in English and Devanagari scripts and cannot be missed. The main building is constructed of a yellowish Malad stone, surrounded by excellent greenery and beautiful gardens. The ICT campus is one of the most picturesque and quiet places. It is located on a 16-acre plot, surrounded by Nathalal Parekh Marg (front side), Puranmal Singhani Marg (between Don Bosco and ICT), R.A. Kidwai Marg (backside) and P.B. Sule Marg.

Most of the long distance trains on the Central and Western Railways halt at the Dadar Railway Station (see routes D and E below). All buses operated by the Maharashtra State Road Transport Corporation and private carriers stop at Dadar bus station on Dr. Babasaheb Ambedkar Road near Jagannath Shankarshet Flyover and Khodadad Circle (or popularly called Dadar TT).

### **A. From Matunga Railway Station (Central Railway-Main Line)**

The ICT can be reached in about 15 minutes on foot following L. Nappu Road, Bhandarkar Road, Maheshwari Udyan (King's circle), Don Bosco Church/ High School/ Khalsa College.

### **B. From Wadala Railway Station (Harbour Line of Central Railway)**

It is about 12 minutes walk. Exit on the western gate on the Rafi Ahmed Kidwai Road; walk straight on D.S. Barato Road in front of the station to Wadala Church and turn right on Nathalal Parekh Road (backside of VJTI). It will take about 5 minutes to reach the ICT.

### **C. From King's Circle Railway Station (Harbour Line of Central Railway)**

Get down on Dr. Babasaheb Ambedkar Road and walk southward towards Arora Cinema and then along Nathalal Parekh Road towards Don Bosco Church/ High School and ICT. It is about 10 minutes walk.

### **D. From Dadar Railway Station (Central Railway)**

Walk towards Dr. Babasaheb Ambedkar Road via Pritam Hotel. Take BEST Bus No.64 to Maheshwari Udyan (King's circle) and get down at the ICT / Don Bosco Church/ High School bus stop exactly opposite to ICT's main gate.

### **E. From Dadar Railway Station (Western Railway)**

Exit on the western gate to Senapati Bapat Marg and walk on Ranade road and N.C. Kelkar Road to Plaza Cinema. Board on Bus No. 169 towards Pratiksha Nagar and alight at the ICT / Don Bosco Church/ High School bus stop exactly opposite to ICT's main gate. You can also get on to Bus No. 63 to Chunabhatti and get down at the Bus stop called Gate No 4. Walk along the R.A. Kidwai Marg and enter through the rear gate for the ICT hostels.

### **F. From Chhatrapati Shivaji Maharaj Terminus (CST): Main Central Railway Station**

Board a Harbour train to Wadala station and follow route B. Else board a Main line train to Matunga Central Station and follow route A.

### **G. From Kurla Lokmanya Tilak Terminus Railway Station**

Board a Harbour train to Wadala station and follow route B. Else board the Main line train to Matunga Central Station and follow route A.

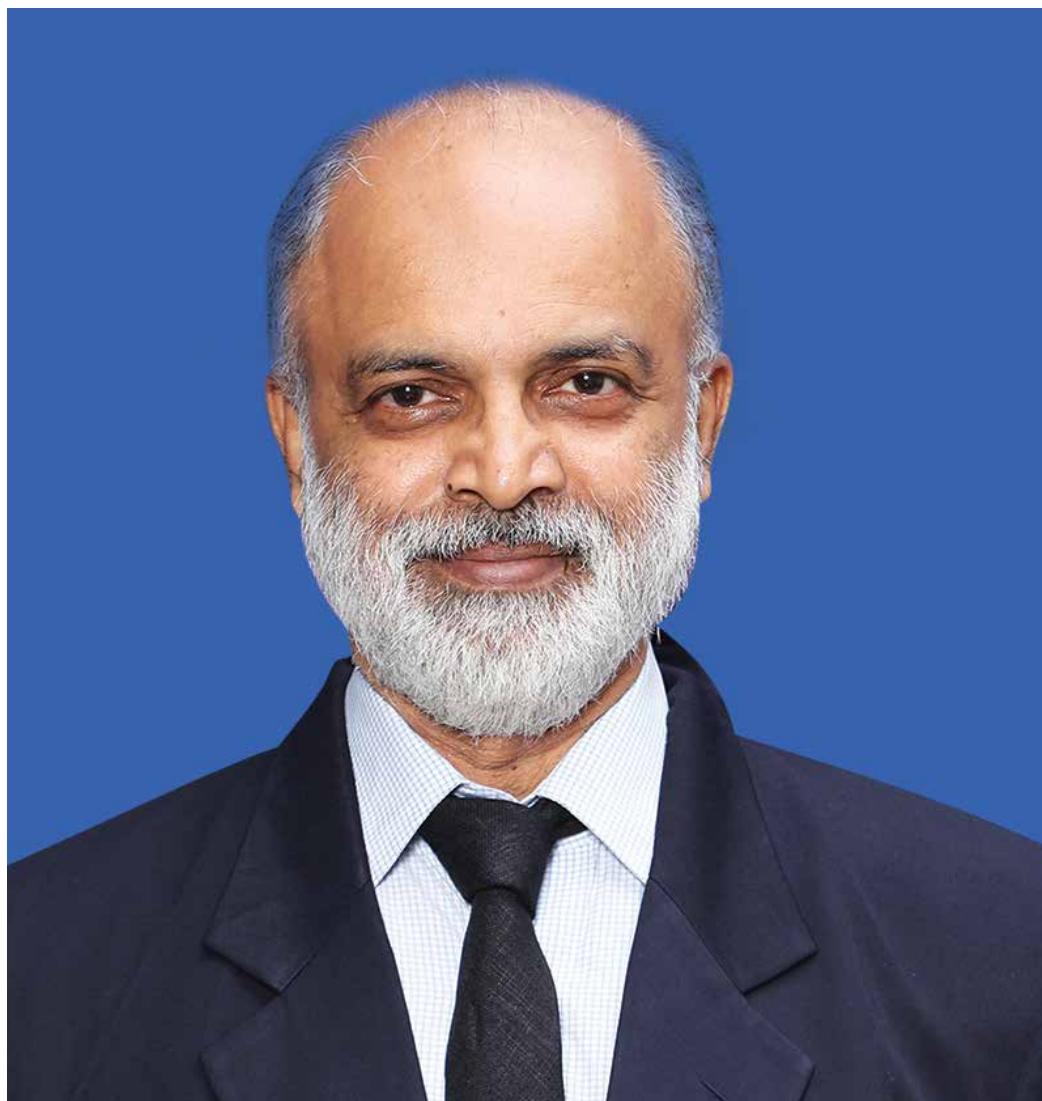
### **H. From Chhatrapati Shivaji International Airport Sahar and Domestic Terminal, Santacruz (East)**

Rent either a pre-paid taxi Uber or Ola or hire a taxi for Maheshwari Udyan (King's Circle), Don Bosco Church/ High School and ICT. The maximum fare for a regular taxi should be around Rs. 300, without any traffic jams. It takes about 30-40 minutes.





# INSTITUTE AUTHORITIES AND PROFILES OF DEPARTMENTS



## **PROFESSOR Aniruddha B Pandit**

*B.Tech., Ph.D.(Tech.),  
FTWAS, FNA, FASc, FNAE, FNASC, FMASc  
Vice-Chancellor  
Jagdish Chandra Bose National Fellow (DST-GOI)*

## **PREAMBLE**

The Institute of Chemical Technology (ICT), Mumbai is a unique Institute which was established on 1st October 1933 as a University Department of the Bombay University (UDCT), completing 87 years of glorious past. ICT has created its own brand over the years which has been recognized by several prestigious awards and accolades to the faculty, students and alumni individually and also as the institute. Under the World Bank's Technical Education Quality Improvement Program (TEQIP), ICT was granted full autonomous status in 2004 and declared as Deemed-to-be University on September 12, 2008 by the MHRD under Section 3 of the UGC Act of 1956. It was bestowed an Elite Status and Centre of Excellence

on par with IITs, IISc and IISERs in the State Assembly on April 20, 2012 by the Maharashtra Govt. based on its stellar performance on par with the institutes of national importance. The genesis of ICT Mumbai is truly educative and its achievements are inspirational. It has now three campuses: main (Mumbai), and two off-campuses, Bhubaneswar, Odisha and Marathwada, Jalna which were opened during 2018-19 with innovative Integrated Master's degree and research programmes. We are in the midst of a huge Global and National crisis and as a leading Technological and Engineering Institute such as ICT has to play an exemplary and a leading role as it has done in the past in the time of every national and Industrial need. This time the situation is different though as in addition to the technological contribution, we have to address the societal need as a priority.

ICT, Mumbai is housed on 16 acres of land in Mumbai and is running 9 UG (Chemical Engineering; 7 branches of Chemical Technology; 1 Pharmacy), 18 PG (9 inter-disciplinary) and 29 Ph D programmes (11 interdisciplinary), 1 PG Diploma in Chemical Technology Management for doctoral students and 1 PG Certificate Course in Chemical Safety and Risk Management for all Masters students. ICT is governed according to special Statutes which go beyond Deemed University concept as approved by the State. In a historic decision on February 12, 2018, the University Grants Commission declared Category I Deemed to be University status to ICT which has maintained high academic standards (NAAC grade of A++ CGPA 3.77 out of 4). The Minister of Human Resource Development, The Central Government is striving hard to introduce a liberalized and social relevant academic regime in the education sector with emphasis is on linking autonomy with quality and societal relevance.

In the middle of this unprecedented crisis, this academic freedom needs to be used for the betterment of the society using innovative teaching and knowledge dissemination methods.

## **TWO OFF-CAMPUSES**

On March 18, 2018 marked a unique milestone in the chequered history of ICT which crossed for the first time the confines the State of Maharashtra and entered the beautiful and benevolent State of Odisha. ICT is indeed fortunate that the launching of the Institute of Chemical Technology, Mumbai Indian Oil Odisha Campus (ICT Mumbai-IOC), Bhubaneswar was done at the hands of Hon'ble Shri Ram Nath Kovind, the President of India in the august presence of Hon'ble Shri S.C. Jamir, Governor of Odisha; Hon'ble Shri Dharmendra Pradhan, Union Minister for Petroleum and Natural Gas, Skill Development and Entrepreneurship, and a galaxy of bureaucrats, distinguished academics and citizens, stalwarts from industry and well-wishers from across the country. Now, the Government of Odisha has sanctioned a land of 20 acres for the ICT-Mumbai Odisha campus. All modern research facilities are created over there through the support of IOC.

Furthermore, on May 4, 2018 Foundation Stone of the Marathwada campus was laid on 203 acres land at Siraswadi, Jalna at the hands of then Chief Minister of Govt. of Maharashtra, Shri Devendra Fadnavis, Shri Raosaheb Danve, M.P. and President, Maharashtra BJP, Shri Babanrao Lonikar, Gaurdian Minister and Shri Arjun Khotkar, Minister of State among many others. The State cabinet had sanctioned a budget of Rs 397.00 Crore in its meeting held on 24th April 2018 and the utilization and infrastructure creation at both the campuses has started in the right earnest.

## **AWARDS TO ICT**

ICT received the most coveted ranking award instituted by the National Institutional Ranking Framework (NIRF) of MHRD during a function by the hands of Shri Prakash Javadekar, Hon'ble Minister of Human Resource and Development, Government of India. ICT was ranked 12th amongst the Engineering Institutes of India and 15th amongst Universities of India. It is also placed at rank 4 amongst the Pharmacy Institutes. ICT is ranked 27th among all institutes and universities in India.

For the first time in international ranking of universities, ICT was invited to participate. The larger the

size better is the chance of inclusion. In the BRICS QS universities ranking 2019 ICT was 115 with 100/100 marks in research. In the ARIIA (Atal Ranking of Institutions of Innovation Achievements) ranking under the Public funded Institutes of the country, ICT was ranked 6th in India. If you see the past 3 /4 years of ICT performance, you can see it steadily climbing.

## **ICT CONNECTIVITY WITH INDUSTRY**

The role of industry in promoting education and research at ICT has its roots in its foundation. Leading magnates from textile and chemicals industry and philanthropists donated funds to establish professor's positions and laboratories right from beginning and research started from the inception keeping faculty engaged in development of industry. It is matter of pride that the very first position created through endowment is R.T. Mody Distinguished Professor. Faculty used to offer free consultation to industry until 1955 for its growth and many new industries were started by ICT graduates.

ICT has been closely working with industry ever since and government in the interest of the nation and currently several active MOUs with many national and international renowned universities in USA, Canada, UK, Germany, France, Australia, Finland, Spain, and foreign such as Mitsubishi are in place, Huntsman, Unilever, Biorad, Coka Cola, Pepsico, Reliance, etc. ([www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)). Bestowed with numerous awards and accolades, ICT has created a niche for translational research and technology development and transfer.

## **ICT : CULTURE, CREATIVITY AND CONNECTIVITY**

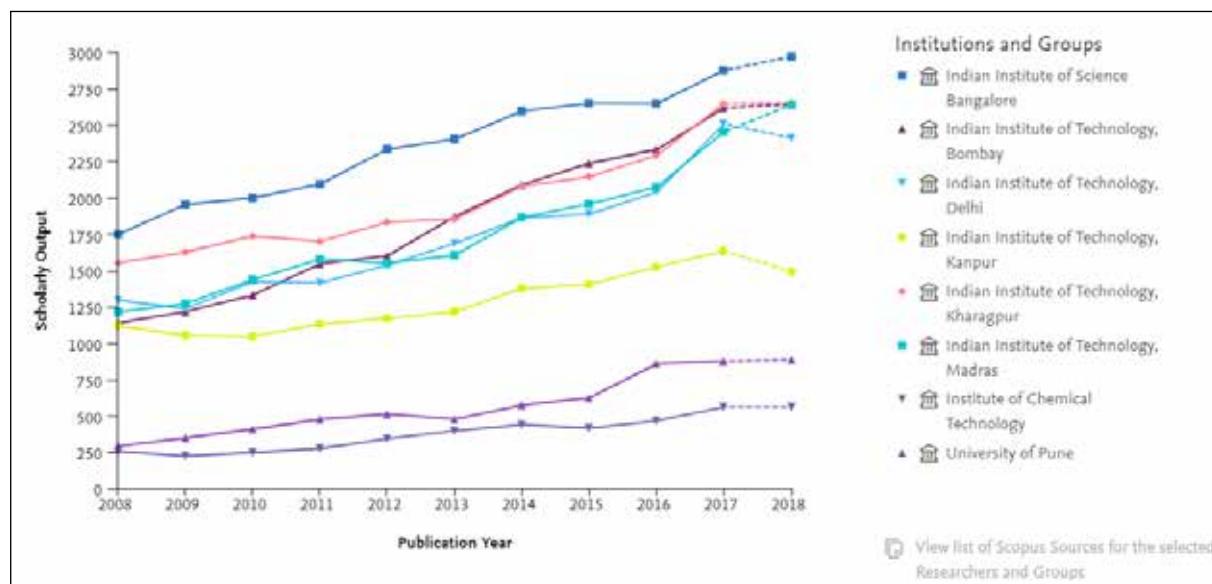
- Three campuses from 2018-19
- University of the Year 2018 by FICCI
- Best Engineering Institute by ISTE Western Region 2019
- 3 Padma Vibhushan, 8 Padma Bhushan, 8 Padma Shri awardees; 2 Fellows of Royal Society (among 5 engineers from India); Several Fellowships- FNA, FNASC, FNAE, FRSC, FTWAS, MUSAЕ.
- Over 500 first generation entrepreneurs, some owners of Fortune 500 Companies;
- Main Campus at Mumbai: 11 departments and 6 centres of excellence. 9 UG, 18 PG, 29 Ph D, 1 PG Diploma in Chemical Technology Management, 1 Certificate Course in Chemical Safety and Risk Management
- No. 1 in India, 4 globally in publications in Ch E
- 9 UG, 18 PG, 29 Ph D programs, 1 PGDCTM, 1CCCSRM
- 640 Ph D Students
- Masters ( 331 First Year +225 Second Year)
- 1100 UG students
- 360 UG Scholarship
- 140 Ph Ds during 7th Convocation on 23rd Feb. 2018
- 100+ UG Summer Researcher Fellows
- Rs 10K, 100K per student
- 10.27 Ph D per faculty
- Highest citation per faculty
- Annual citations per year more than 10,000

- SCOPUS Awards: 4 faculty in top 10 Chem Engg and 2 in top Chemistry faculty in India: 20<sup>th</sup> March 2018
- 4 Fellows of INSA, 4 Fellows of TWAS, 4 JC Bose Fellows
- Many of NASI, IASc, INAE,
- Preferred destination for Faculty Recharge Programme of UGC
- 23 Endowment Chairs; 15 UGCFR, 8 INSPIRE, 2 Ramanujam, 2 Ramalingaswami fellows
- 49 Endowment Visiting Fellowships; 11 endowments for library
- India's five Ph Ds in E & T from ICT in 1941-42
- 468 papers: 406 Patents filed in last 10 years
- 104 Projects including multinational; Publications/faculty highest
- Two Ch E alumni FRS, London
- 1 Company under section 8 of Companies Act
- Donations under CSR, 80G, 35(I) (II) 3 C, 3E
- Many technologies transferred to industry.

ICT is not just a Chemical Technology Institute but covers all branches of Chemical Sciences, Engineering and Technology; Product Engineering; Biological Sciences, Engineering and Technology; Materials Sciences and Engineering; and Energy Science and Engineering. Whatever is designated by Nano, Bio and Green Technologies are researched in all departments of ICT.

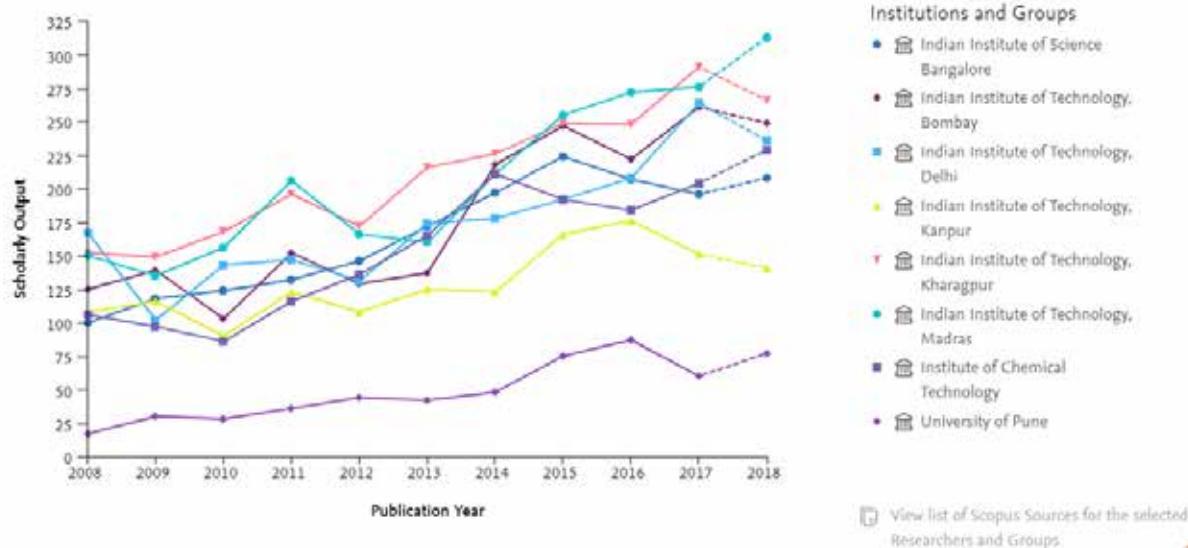
**A recent Sci-Val data analysis (Elsevier) shows the ICT, despite its being a State funded institute, is highly productive and recognised institute (Feb. 2019) and is among top 4 among all disciplines in the country and number 1 in Chemical Engineering.**

Benchmarking in All Disciplines among Leading Indian Institutes and Universities



| Name                                      | Scholarly Output | Field-Weighted Citation Impact | Outputs in Top 10 citation percentile (%) | Collaboration (%) |
|---|------------------|--------------------------------|---|-------------------|
| Indian Institute of Science Bangalore     | 26271            | 1.07                           | 13.1                                      | 26.1              |
| Indian Institute of Technology, Bombay    | 20517            | 1.1                            | 12  | 26.6              |
| Indian Institute of Technology, Delhi     | 19297            | 1.12                           | 13.1                                      | 20.8              |
| Indian Institute of Technology, Kanpur    | 14162            | 1.03                           | 12.2                                      | 25.2              |
| Indian Institute of Technology, Kharagpur | 22111            | 1.06                           | 12.5                                      | 19.7              |
| Indian Institute of Technology, Madras    | 19640            | 1.02                           | 11.4                                      | 24                |
| <b>Institute of Chemical Technology</b>   | <b>4165</b>      | <b>1.07</b>                    | <b>19</b>                                 | <b>13.7</b>       |
| University of Pune                        | 6312             | 0.99                           | 10.8                                      | 20.7              |

### Bench-marking in Chemical Engineering Discipline



| Name                                      | Scholarly Output | Field-Weighted Citation Impact | Outputs in Top 10 citation percentile (%) | Collaboration (%) |
|---|------------------|--------------------------------|---|-------------------|
| Indian Institute of Science Bangalore     | 1824             | 1.4                            | 24.8                                      | 21.1              |
| <b>Institute of Chemical Technology</b>   | <b>1726</b>      | <b>1.26</b>                    | <b>25.1</b>                               | <b>15.2</b>       |
| Indian Institute of Technology, Kharagpur | 2333             | 1.17                           | 20.5                                      | 17.7              |
| Indian Institute of Technology, Kanpur    | 1427             | 1.15                           | 19.8                                      | 21                |
| Indian Institute of Technology, Bombay    | 1982             | 1.09                           | 18.3                                      | 22                |
| Indian Institute of Technology, Delhi     | 1942             | 1.08                           | 18.2                                      | 20.5              |
| Indian Institute of Technology, Madras    | 2300             | 0.97                           | 15.3                                      | 18.4              |
| University of Pune                        | 544              | 0.95                           | 18.6                                      | 22.8              |



Shri Dharmendra Pradhan, Hon'ble Minister of Petroleum and Natural Gas and Skill Development and Entrepreneurship at ICT, Mumbai IndianOil Odisha Campus, Bhubaneswar visit the ICT-Mumbai Odisha campus on Sept 7, 2018.

## WHY ICT IS IN ODISHA?

The economy of Odisha is one of the fastest growing economies amongst various States in India. According to recent economic survey, Odisha's gross state domestic product (GSDP) is expected to grow at around 8.5% during current fiscal year. Education is the key enabler of economy of any State; in particular, higher technical education along with related research and innovation. In order to develop any State as preferred destination for industrial services, R&D, it is necessary to invest in training high-quality manpower and develop indigenous technology. This shall enable the State to seize the emerging opportunity and ensure a rate of satisfactory growth.

The primary industries in Odisha are manufacturing; mining & quarrying; electricity, gas and water supply & construction. The industrial sector's contribution to the state's GSDP by almost 35%. Most of Odisha's industries are mineral-based. Odisha has 25% of India's iron reserves. It has 10% of India's production capacity in steel. Odisha is the top aluminium producing State in India. Two of the largest aluminium plants in India are located in the state. Odisha is the first State in India to reform its power sector and become surplus power generating state.

Similar to Maharashtra in the past, recent years have witnessed large projects in Odisha like Indian Oil's 11th Refinery at Paradip, envisioned as the Energy Gateway to Eastern India, the 15 MMTPA Refinery has been set up at an estimated cost of Rs. 34,555 crore. Other mega-projects include large Coal Gasification Plant at Angul, World's Largest Phosphatic Fertilisers Plant at Paradip, Vegetable Oil Plant at Paradip to name a few. Govt. of India's PSUs, RCF and GAIL are embarking a large scale Fertiliser Plant at Talcher using gasification of coal. Based on Petroleum Refinery at Paradip, Govt. of India has also approved setting up a Petroleum, Chemical, Petro-chemical Investment Region (PCPIR) for which Govt. of Odisha has earmarked 250 sq. km of land. Indeed all these sectors are linked to ICT's educational portfolio and strength. Therefore, it was felt by ICT and endorsed by Hon'ble Minister the need of a World Class Centre of Excellence in Chemical Engineering and Technology in Odisha to catalyse structured growth of petro-chemical, chemical, polymer, textiles and fibres, herbal and pharmaceuticals, pesticide, dyestuff and fine chemicals, perfumers and flavours, rubber chemicals industry in Odisha. All of these For SEZ, PCPIR and Innovation hubs in Pharmaceuticals, Govt. of Odisha needs extensive and innovation input from Institute like the ICT, Mumbai. The Govt. of Odisha has been kind enough to allot us 20 acres of land to start our own campus and the plan and the grand vision has already been discussed at the highest level with a proactive participation of Hon. Minister Shree Dharmendra Pradhan and the Chief Minister Hon, Shree Naveen Patnaik.

## INNOVATIVE PROGRAMMES AT ICTM-IOC BHUBANESWAR AND COLLABORATION WITH IIT-KHARAGPUR

As a consequence to the MOU between IOC and ICT on 16th November 2017, a proposal was submitted to the IOC Board giving the details of plan to promote several activities including setting up of campus at Bhubaneswar.

- Integrated M. Tech. after 12<sup>th</sup> Standard (HSC/HSC/HSSC) of 5 years duration consisting of 15 trimesters with alternate term in industry, with major in Chemical Engineering and minor in 6 different disciplines. To ensure improved quality and industry relevance in curricula development for integrated M. Tech. (6 trimesters in industry and 9 in institute) in the field of Chemical Engineering as major branch with minor in Petrochemicals, Textiles, Polymers and Materials, Foods and Pharmaceuticals, and Energy Engineering. The last two trimesters will be for promotion of experimental and design project to promote entrepreneurship and start-up companies.
- Executive M. Tech. (1 month in classroom followed by 2 months in parent company for 2 years ) for

industrial personnel

- Ph.D. programmes in various disciplines.
- Centre of Excellence in Research and Innovation.

All these programmes are new and being introduced in India for the first time. During the industrial internship the industry will be requested to offer stipend making the education affordable to one and all. IIT Kharagpur has signed an MOU with ICT for running the Executive M. Tech. (e-M.Tech.) together whereby the student will spend time on both campuses and also they will partner in creation of Centres of Excellence in Research and Innovation. Currently the IIT-KGP extension Centre in Bhubaneswar is temporarily made available for ICTM-IOC programmes. The campus is equipped modern equipment for carrying out high class research and innovation at Centres of Excellence to develop technology and to support Research and Development in industry and Skill Development in Chemical Engineering, Petrochemicals, Textiles, Polymers, Pharmaceuticals, Energy, etc.

## **EXECUTIVE M. Tech. DEGREE (e-M.Tech.) PROGRAMME:**

(Two Years with Alternate Short Terms in Class Room (1 month) and Parent Industry (2 months)

Executive MBA programmes are run working professionals by various management institutes which typically cater to management of business, finance, and administration. This programme is different from them. The idea behind launching this programme is to train executives having industrial experience with managerial experience or responsibilities who could rise to the top to become vice presidents, presidents, managing directors and the like but with training and research in technical field in an industrial set up. The programme is of two years duration.

The executive M Tech program (e-M.Tech.) is thus geared at giving training in research, innovation industrial practices, law, sustainability and management to experienced and senior professionals who want to continue to work without losing continuity in the work place but still being a student while pursuing a degree. There is a subtle difference in this program in comparison with other programs. These executives are many times involved in issues related to research, innovation, business expansion, environment, law and human resources, plant operation, design and development, marketing. In many PSUs, it is found that some are transferred to R and D or plant operations, without having any idea of the field resulting into considerable loss of time and resources.

The executive from all process industries are eligible for this programme. These industries range from all large scale industries to small scale industries – Refinery, Coal, Energy, Chemicals, Polymer, Materials, Steel, Pharmaceuticals, Food Processing, Biotechnology, Fertilizers and the like. They will study in the class room on the campus for a short term of 4 weeks during which s/he will undergo course work in different subjects as well as start do literature search and plan for research. He will continue to carry out the research activities in the parent industry during alternate terms. During the parent industry term (PIT), s/he will continue the research work, home assignments, and other related course work. The student is continuously monitored and participates in class room discussions, home assignments and research project. The e-M.Tech. student is also supposed to mentor one-two students from the Integrated Masters degree students during their industrial internship. The student will be co-guided by two faculty members, each from ICT and IIT.

## **ICT IN MARATHWADA**

The economy of Maharashtra is one of the fastest growing economies amongst various States in India. and the Marathwada region needs a lot of development from the view point of high quality education and industrial development. ICT was therefore asked by the State Government to set up an off campus there. According to current economic survey, gross state domestic product (GSDP) is expected to grow at around 8.5% during current fiscal year. Education is the key enabler of economy of any State; in particular, higher technical education along with related research and innovation. In order to develop

any State as preferred destination for industrial services, R&D, it is necessary to invest in training high-quality manpower and develop indigenous technology. This shall enable the State to seize the emerging opportunity and ensure a rate of satisfactory growth.

### **Innovative Programmes at ICT Mumbai- Marathwada Campus, Jalna**

The same programmes will be conducted as IOC campus. The executive M. Tech. programme will be taken up later.

- Integrated M. Tech. after 12th Standard (HSC/HSC/HSSC) of 5 years duration consisting of 15 trimesters with alternate term in industry, with major in Chemical Engineering and minor in 6 different disciplines. To ensure improved quality and industry relevance in curricula development for integrated M. Tech. (6 trimesters in industry and 9 in institute) in the field of Chemical Engineering as major branch with minor, (i) Petrochemicals, (ii) Foods Engineering and Technology, (iii) Pharmaceuticals Engineering, (iv) Lipid Technology, (v) Polymers and Materials Engineering and Technology, (vi) Speciality Molecules Engineering, and (vii) Energy Engineering
- Ph. D. programmes in various disciplines.
- Centres of Excellence in Research and Innovation.

Centres of Excellence will be created and the first one will be COE in Cellular Agriculture with participation of industry and an MOU is signed with Good Food Institute in this regard.

### **ENGINEERING CHALLENGES AND RELEVANCE OF COURSES**

If you are admitted to this grand institution, which is strictly based on merit, it is assured that the education you receive will be of the highest order and, in the years to come, will place you at the cutting-edge of science and technology where you will develop products and services that greatly improve the lives of those around you. Do you wonder as to what relevance these courses have vis-a-vis ‘white collared’ engineering programmes and are these courses as rewarding? No virtual world can be created without materials produced by niche and eco-friendly technologies. We all leave in the world of chemicals, molecules, if you may, and products, which are transformed to give quality and longevity to life. In this context, let me direct your attention to the “Grand Challenges”, as they are referred to by the US Academy of Engineering, and which include:

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

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

issues involve high degree of science and engineering. How are we going to feed billions of people, remain in harmony with nature, and develop sustainable processes and technology? What will be their energy and material needs? Life expectancy is getting extended. Addressing these challenges requires a multifaceted effort that traverses the fields of chemistry, engineering, biotechnology, information technology and nanotechnology, engineering mathematics, environmental engineering and the curriculum and courses offered at the Institute have judiciously incorporated subjects from all these disciplines. Our courses directly allow being on the forefront of these rewarding careers. The new challenge in the form of COVID 19 has prompted us to come up with new and an innovated thought processes which has to be evolved with new priorities to be listed out.

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

The Institute's strong multi-disciplinary research programmes have helped create a unique learning environment that places great emphasis on synergizing knowledge from several sources to develop creative and effective solutions to many of the problems faced in industry and society and it this eclectic combination of a rigorous and up-to-date curriculum, excellent laboratory and demonstration facilities, world-renowned faculty and a conducive learning environment brimming with the next generation of great minds that sets the Institute apart from its competitors. The ICT is held in high esteem by other premier institutes, industry and government for many of its unique characteristics and achievements. All of them deem that ICT is different; distinctly different; incredibly different! They wonder how a small university department, with poor funding has managed to excel and that too without any public glare or publicity? The magic mantra for our success is a concoction of dedicated faculty, meritorious students, admirable support staff, distinguished alumni, strong connectivity with industry, and assistance to all needy students, a grand alumni association and above all relevance of our courses in wealth creation.

## CLOSING REMARKS

"I am sure by now you would have realized as to why the ICT is held in high esteem and its uniqueness and heritage among all institutes of higher learning in India. Great institutes are not built overnight. As an academic, researcher, consultant to industry, member of several important professional bodies and government committees over the past 30 years and based on the interactions with alumni, government officials, faculty from leading institutes in India and abroad, has revealed a trend- that is- quality of education, the brand name of institute and future prospects, far outweigh any other consideration on the minds of students and employers alike, while choosing an institute, than the cost of education. Indian parents sacrifice many things to educate their off-springs in the best of schools and colleges; many times not fully knowing about the institute or the course

If you get selected through our admission process, which is transparent and strictly on merit, with all government policies in place, my congratulations and best wishes to you. I hope I have convinced you, to join this great institute. The opportunities that lie in store for you during your years with us and once you graduate will truly be enormous. If you are unlucky this time because you fail short of the cut-off criteria

at undergraduate level, try again for master's and Ph.D. programmes after your graduation. Should your destination be some other place for whatever compelling reasons, let me wish you the very best for all your future endeavours.

The Rich. The Poor. The Marginal. The Privileged. The Underprivileged They studied here. They made it BIG. Do not ask how to do. Do it. Underestimate NOT, who you could be. Think Big. Dream Big. Do not dismiss your dreams and see, how you can contribute to the nation and the society. To be without dreams is to be without hope; to be without hope is to be without purpose.

The very best to you; wherever you go.

***Professor Aniruddha B Pandit***

## CHANGE AT THE HELM

**Prof. A.B. Pandit takes over from Prof. G.D. Yadav as new Vice Chancellor of ICT on November 29, 2019**





**T**echnical Education Quality Improvement Programme is a project of Government of India in association with the World Bank. The project was implemented to improve the quality of education in the technical institutions of the country.

The programme is presently at its third phase and has objectives of building, strengthening and improving quality in engineering education institutions. In this phase III, capacity building is focused upon by undertaking twinning programs among selected mentor and mentee institutes for growth and development of the latter.

The twinning partners of ICT under TEQIP III are Birla Institute of Technology, Mesra, Jharkhand and Government College of Engineering, Keonjhar, Odisha.

Since inception, various activities have been organised both at the mentor and mentee Institutes to enhance research in areas of mutual and complimentary interest through collaborative projects, create opportunities for industrial training, internships, career counselling, and placement.

Under TEQIP-III, a Centre of Excellence in process intensification was established at ICT with focus on green technology. The centre supports 34 doctoral students and projects that address real life and socially relevant problems, enabling interdisciplinary research. Empowering the productivity and motivation of faculty, improving the skills of administrative and technical staff, holistic development of students and transformative innovation and entrepreneurship are the identified and successfully achieved objectives at ICT under TEQIP III programme.

## Core Team TEQIP-3



Vice Chancellor  
Prof. A. B. Pandit  
[ab.pandit@ictmumbai.edu.in](mailto:ab.pandit@ictmumbai.edu.in)



TEQIP Coordinator  
Prof. Padma V. Devarajan  
[pv.devarajan@ictmumbai.edu.in](mailto:pv.devarajan@ictmumbai.edu.in)



Nodal Officer (Finance)  
Prof. Ravi Adivarekar  
[rv.adivarekar@ictmumbai.edu.in](mailto:rv.adivarekar@ictmumbai.edu.in)



Nodal Officer (Procurement)  
Prof. Virendra Rathod  
[vk.rathod@ictmumbai.edu.in](mailto:vk.rathod@ictmumbai.edu.in)



Nodal Officer (Academic)  
Prof. Radha V. Jayaram  
[rv.jayaram@ictmumbai.edu.in](mailto:rv.jayaram@ictmumbai.edu.in)



Faculty Activity Coordinator  
Prof. Rekha S. Singhal  
[rs.singhal@ictmumbai.edu.in](mailto:rs.singhal@ictmumbai.edu.in)



Equity Action Plan  
Coordinator  
Prof. P. D. Amin  
[pd.amin@ictmumbai.edu.in](mailto:pd.amin@ictmumbai.edu.in)



Coordinator Centre of  
Excellence in Process  
Intensification  
Prof. S. S. Bhagwat  
[ss.bhagwat@ictmumbai.edu.in](mailto:ss.bhagwat@ictmumbai.edu.in)



Coordinator  
(Twinning BIT, Mesra)  
Dr. Ajit Kumar  
[a.kumar@ictmumbai.edu.in](mailto:a.kumar@ictmumbai.edu.in)



Coordinator  
(Twinning GCE, Keonjhar)  
Prof. D. D. Sarode  
[dd.sarode@ictmumbai.edu.in](mailto:dd.sarode@ictmumbai.edu.in)



Nodal Officer (MIS)  
Prof. R. D. Kale  
[rd.kale@ictmumbai.edu.in](mailto:rd.kale@ictmumbai.edu.in)



Environment Management  
Coordinator  
Prof. P. D. Vaidya  
[pd.vaidya@ictmumbai.edu.in](mailto:pd.vaidya@ictmumbai.edu.in)



# INSTITUTE OF CHEMICAL TECHNOLOGY



# NATIONAL AND INTERNATIONAL CERTIFICATION



## राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त सम्मान

**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

An Autonomous Institution of the University Grants Commission

# *Certificate of Accreditation*

*The Executive Committee of the  
National Assessment and Accreditation Council  
on the recommendation of the duly appointed  
Peer Team is pleased to declare the  
Institute of Chemical Technology*

*(Deemed to be University u/s 3 of the UGC Act, 1956)*

*Nathalal Parekh Marg, Matunga, Mumbai, Maharashtra as*

*Accredited*

*with CGPA of 3.77 on seven point scale*

*at A++ grade*

*valid up to November 26, 2022*

*Date : November 27, 2017*



*Lata*  
*Director (Actg.)*

**QS WORLD UNIVERSITY RANKINGS BRICKS 2020 :**

Institute of Technology

Bricks Rank= 115,

Indian Rank= 22

<https://www.topuniversities.com/universities/institute-chemical-technology-mumbai>



**INSTITUTE OF CHEMICAL TECHNOLOGY  
(UDCT), MUMBAI**

INDIA RANK  
BRICS RANK

**115=**

**24**



15 October 2018



Government of India  
Ministry of Human Resource Development



## ARIIA

ATAL RANKING OF INSTITUTIONS ON INNOVATION ACHIEVEMENTS  
**RANKING 2019**

*Institute of Chemical Technology, Mumbai*

ranked Sixth under the category of Government funded institutions.

Dr. Anil D. Sahasrabudhe  
Chairman, AICTE

Shri R. Subrahmanyam  
Secretary (Higher Education), MHRD

Dr. Arun Jere  
Chief Innovation Officer, MIC, MHRD



*Certificate*

**NATIONAL INSTITUTIONAL RANKING FRAMEWORK**



Government of India  
Ministry of Human Resource Development



Institute of Chemical Technology, Mumbai

Ranked 4 in Pharmacy Category

CHAIRMAN, NBA

MEMBER SECRETARY, NBA



### World University Rankings 2020 in India



Institute of Chemical Technology  
RANKED =7<sup>th</sup>  
IN INDIA

**THE** WORLD UNIVERSITY RANKINGS 2020  
[www.thewur.com](http://www.thewur.com)

The banner features a circular graphic on the left composed of various icons related to technology, science, and industry, such as gears, microchips, and laboratory glassware. The text is displayed on the right side of the banner.

### Emerging Economies University Rankings 2020



Institute of Chemical Technology  
RANKED =73<sup>rd</sup>

**THE** WORLD UNIVERSITY RANKINGS 2020  
EMERGING ECONOMIES  
[www.thewur.com](http://www.thewur.com)

The banner features a circular graphic on the left composed of various icons related to technology, science, and industry, such as gears, microchips, and laboratory glassware. The text is displayed on the right side of the banner.

### Asia University Rankings 2020



Institute of Chemical Technology  
RANKED 92<sup>nd</sup>

**THE** WORLD UNIVERSITY RANKINGS 2020  
ASIA  
[www.thewur.com](http://www.thewur.com)

The banner features a circular graphic on the left composed of various icons related to technology, science, and industry, such as gears, microchips, and laboratory glassware. The text is displayed on the right side of the banner.

### World University Rankings 2020 by subject\_ Engineering & Technology



Institute of Chemical Technology  
RANKED 401–500  
FOR ENGINEERING &  
TECHNOLOGY

**THE** WORLD  
UNIVERSITY  
RANKINGS  
2020

[www.thewur.com](http://www.thewur.com)

### World University Rankings 2020 by subject\_ Physical Sciences



Institute of Chemical Technology  
RANKED 501–600  
FOR PHYSICAL  
SCIENCES

**THE** WORLD  
UNIVERSITY  
RANKINGS  
2020

[www.thewur.com](http://www.thewur.com)

### World University Rankings 2020 (Overall)



Institute of Chemical Technology  
RANKED 501–600

**THE** WORLD  
UNIVERSITY  
RANKINGS  
2020

[www.thewur.com](http://www.thewur.com)



# DISTINGUISHED FACULTY

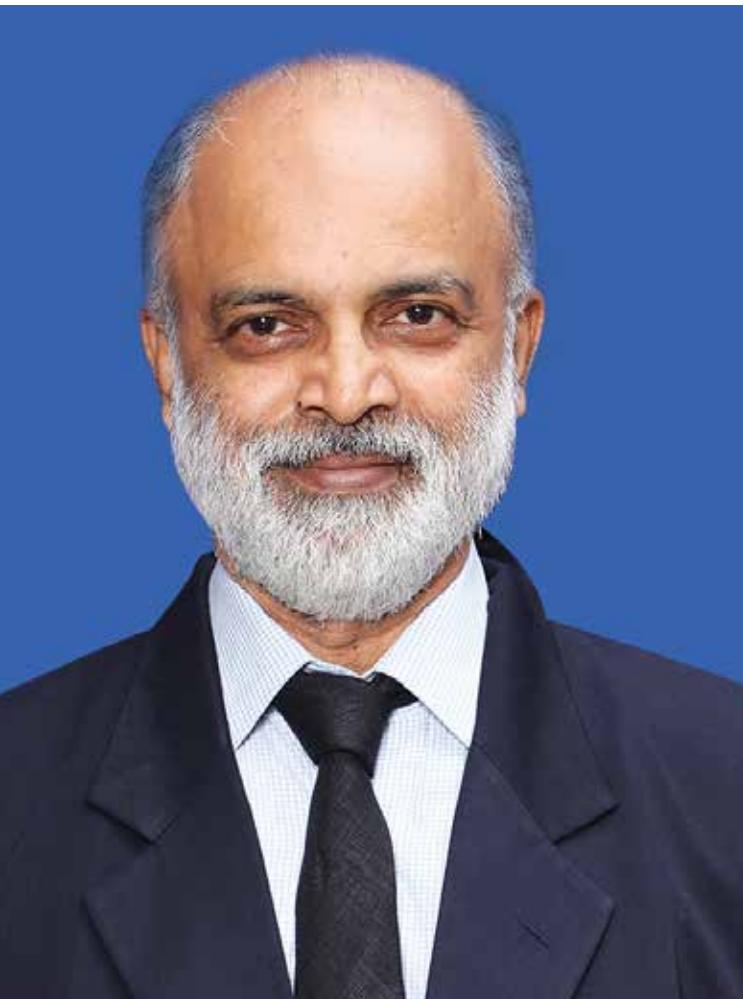
**PADMA VIBHUSHAN**  
**PROF. M. M. SHARMA**  
Emeritus Professor of Eminence  
Former Director, UDCT (ICT)



**PADMA BHUSHAN**  
**PROF. J. B. JOSHI**  
Emeritus Professor of Eminence  
Former Director, UICT (ICT)

**PADMA SHREE**  
**PROF. G. D. YADAV**  
Emeritus Professor of Eminence  
Former Vice Chancellor, ICT





**VICE CHANCELLOR  
PROF. ANIRUDDHA PANDIT**

*Ph.D.(Tech.), B. Tech. (Chem.)  
(FTWAS, FNA, FASc, FNAE, FNASC, FMASc)*

Professor, UGC Research Scientist,  
“C” (Professor’s Grade)  
J. C. Bose National Fellow (DST, Govt. of India)

**RESEARCH INTERESTS:**

Physical and Chemical Processing applications of Cavitation phenomena, Sonochemistry, Ballast Water Treatment, Mixing in Mechanically agitated contactors: Experimental and CFD Investigations, Modeling of Stoves, Use of non-conventional energy sources, Synthesis of Nanomaterials Biotechnology: Protein modification, Cell disruption and Microbial fuel cell.

**A**niruddha B. Pandit was born on 7<sup>th</sup> December 1957 in Mumbai, Maharashtra. He earned his B. Tech (Chem) degree from Indian Institute of Technology (IIT), Banaras Hindu University in 1980 and earned his Ph.D. (Tech) degree from University Department of Chemical Technology (now ICT), in 1984. From 1984 till 1990 he worked in the Department of Chemical Engineering, University of Cambridge, United Kingdom as a Research Assistant & then as a Research Associate with Prof. J. F. Davidson, working in the area of bubble break-up and design of multiphase reactors. He developed many novel designs of gas-liquid contactors and also developed new impeller designs.

**ACADEMIC & RESEARCH CONTRIBUTIONS:** After returning to India in 1990, he joined ICT as a UGC Research Scientist ‘B’ and was subsequently promoted to Scientist ‘C’ (Professor’s Grade) in 1996. He was instrumental in starting a major activity & program in the area of Hydrodynamic Cavitation for intensification of physical and chemical processing applications. He has successfully exploited the cavitation phenomena for a variety of operations such as crystallization, emulsification, nano-particle synthesis and processes such as esterification, oxidation etc on industrial scale. He has been an active industrial consultant for many large size national and international companies.

A unique creative approach of using fundamental knowledge, coupled with simple, elegant experiments has resulted into novel cavitational reactors. Prof. Pandit has authored over 370 publications, 5 books and over 12 chapters (with over 22000

**Subjects Taught:** Environmental Engineering and pollution control Chemical Project Economics, Design of Multiphase Reactors

**Recognized Research guide for**  
Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology, Green Technology, Ph.D. (Science) in Chemistry

**Guided students:**

Ph.D. : 50, Masters : 68

**Total Research Publications : 360**

National/International : Total Publications: 338,  
Citations: 10978, H-Index: 56

**Patents (granted in last 5 years): 16**

**National And International Awards:**

Indian National Academy of Science (INSA), Best Teacher Award, 2012; Sir J. C. Bose Fellow of the Department of Science and Technology, Government of India, 2015; Vishwakarma Medal, Indian National Academy of Science (INSA), 2015; Fellow The World Academy of Sciences (TWAS), 2015

**Awards:**

- ISTE National award for outstanding research, 1995
- Prof. R.A. Rajadyaksha Best Teacher award, on 15 occasions in the past 20 years
- VASVIK award, 1996
- Fellow, Maharashtra Academy of Science 1997
- IICHE - Herdilia award for excellence in basic research, 2001
- Distinguished Alumnus award, Institute of Technology-Banaras Hindu University, 2004
- Distinguished Alumnus award, UICT, 2008
- INSA, Best Teacher award, 2012
- Vishwakarma Medal of Indian National Science Academy 2015
- Fellowships of, Maharashtra Academy of Sciences, 2000
- Indian National Academy of Engineering, 2006, Indian Academy of Sciences, 2008
- Indian National Science Academy, 2009
- National Academy of Sciences in India, 2009
- Fellow of TWAS 2015

citations)and has 15 patents & is on the Editorial board of five International Scientific Journals. He has guided 48 PhD's and 88 master's students so far.

**OTHER CONTRIBUTIONS :** In addition to his research contribution, Prof. Pandit has contributed to innovation in teaching, at graduate and undergraduate levels, demonstration experiments for elaborating the physical principles of many chemical engineering operations. He is actively involved in working with committees in the area of harnessing solar energy & with tribal population in extending the chemical engineering principles for drying of farm/ forest product & water disinfection for potable water. He is a president of a NGO named Land Research Institute dealing with the Energy and Town planning sector.

**Administrative Contributions:** Prof. Pandit has taken over the charge as Vice Chancellor of Institute of Chemical Technology on November 29, 2019. Prior to this, he has acted as a Dean in his capacity of Human Resource and earlier as Dean of Research Consultancy and research Mobilization. He has been the coordinator of ICT-DAE center for Chemical Engineering Education and Research since its inception in 2008. He is on the editorial board on 5 international journals and is an associated editor of Ultrasonic Sonochemistry. He has successfully guided and completed international science collaborations with Universities from France, Australia and The Netherlands. He is also on the project appraisal and evaluation committees of the DST and UGC, Govt of India. He is currently serving as a member of the BOG of the IIT Bombay. He has been an active industrial consultant to many national and international industries.



**EMERITUS PROFESSOR OF EMINENCE  
PROF. M. M. SHARMA**

B. Chem. Eng., M.Sc. (Tech.) (Bombay), Ph. D. (Cambridge), D.Sc.(h.c.) (I.I.T., Bombay; Delhi; Kharagpur; B.H.U.; Roorkee) (Calcutta) (Kanpur) (Bundelkhand) (Lucknow) (h.c.), LL.D. (Mumbai) (h.c.), FREng, FRS, FNA, FASc, FNASC, FTWAS, C Chem, FRIC (U.K.), C. Eng., FIChE (U.K.), FIICHE, FICS, FBRS  
Email: [profmmsharma@gmail.com](mailto:profmmsharma@gmail.com)

**M**an Mohan Sharma FREng (born May 1, 1937 in Jodhpur, Rajasthan) is an Indian chemical engineer. He was educated at Jodhpur, Mumbai and Cambridge. At the age of 27 years, he was appointed Professor of Chemical Engineering in the Institute of Chemical Technology (UDCT), Mumbai. He later went on to become the Director of Institute of Chemical Technology (ICT/ UDCT/ UICT), the first chemical engineering professor to do so from ICT.

In 1990, he became the first Indian engineer to be elected as a Fellow of Royal Society, UK. He was awarded the Padma Bhushan (1987) and the Padma Vibhushan (2001) by the President of India. He has also been awarded the Leverhulme Medal of the Royal Society, the S.S. Bhatnagar Prize in Engineering Sciences (1973), FICCI Award (1981), the Vishwakarma medal of the Indian National Science Academy (1985), G.M. Modi Award (1991), Meghnad Saha Medal (1994), and an honorary Doctor of Science degree from Indian Institute of Technology, Delhi (2001). Man Mohan Sharma obtained Bachelor of Chemical Engineering (1958) from UDCT (ICT) and subsequently MSc (Tech.) in 1960. He obtained Ph.D. (Chemical Engineering) (1964) at Cambridge University with PV Danckwerts. In 1964, he returned to India as Professor at the University of Bombay, and later became Director of the University Department of Chemical Technology (UDCT), now ICT (Institute of Chemical Technology - A Deemed to be University). He served the institute for 33 years. He has been honored by several universities including IITs by honorary doctorates.

### Awards

Professor Sharma is a recipient of a number of prestigious academic honours and awards. He is a Fellow of the Indian Academy of Sciences, Bangalore, Honorary Fellow of the National Academy of Sciences (India), Allahabad, Fellow of the Royal Society, London. Subsequently he was elected Honorary Fellow by the Royal Academy of Engineering and is Foreign Associate of the US National Academy of Engineering. He is recipient of Padma Bhushan and Padma Vibhushan.

### Academic Career

Professor Sharma made contributions to chemical engineering science and technology. His studies on Bronsted based catalysis in CO<sub>2</sub> hydration (published in the Transactions of Faraday Society) and subsequently kinetics of COS absorption in aqueous amines and alkanolamines brought out linear free energy relationship between CO<sub>2</sub> and COS absorption in solutions of amines and alkanolamines. He has contributed extensively on the role of microphases in multiple reactions which he pioneered. He also became an independent Editor of Chemical Engineering Science at a young age. He taught different subjects in chemical engineering and encouraged his doctoral students, from the very beginning, to publish independently their work in renowned journals.

Under his stewardship, UICT got autonomy of UGC. He brought about all-around improvement in all the departments of the Institute leading to exceptionally high number of Ph.D.s each year based on the number of faculty members. He served in Petroleum and Natural Gas as Chairman of the SAC and in the SAC to Cabinet and PM. He was INSA Council Member (1980-82) and Vice President (1987-88).



**EMERITUS PROFESSOR OF EMINENCE  
PROF. J.B. JOSHI**

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

*FNA, FTWAS, FASc, FNAE, FMASc*

Emeritus Professor, Homi Bhabha National Institute; Adjunct Professor, Department of Chemical Engineering; Louisiana State University, USA and Curtin University, Australia  
Former Director, ICT Mumbai.

**P**rofessor Jyeshtharaj Bhalchandra Joshi is an outstanding chemical engineering professional who has developed novel processes, designs, products and implemented in large, medium and small-scale industry including design of more than 1000 reactors for commercial operation. He has developed efficient designs of cookers and stoves and held more than 300 workshops for promoting science awareness among school going students. As President of Marathi Vidnyan Parishad, he has been actively driving the task of improving scientific temper of the society through different activities. Professor Joshi has done truly outstanding work in the area of multiphase reactors which has been widely acclaimed. He has succeeded admirably in developing design procedures for multiphase sparged and mechanically agitated reactors, which form heart of the chemical process industry. He was Director of ICT (1999-2009). Professor Joshi has guided 91 Ph.D. and 60 Masters thesis. He has published more than 500 papers in international cited journals and more than 60 state of the art reviews/ monographs/ book chapters. He has more than 17000 citations and h-index of 64. He has been honoured with Padma Bhushan by the President of India. He has passion to interact with students and young professionals for mutual inspirations and service to society.

The list of prominent awards includes: Fellowship of TWAS, INSA, IASc, INAE; S.S. Bhatnagar Prize 1991 (CSIR), Young Scientist Award 1981 (INSA), Amar-Dye-Chem Award 1983 (IICHE), Young Associate 1983 (IASc), Fellow Maharashtra Academy of Sciences, 1987, Herdillia Award 1989 (IICHE), Maharashtra State National Award 1991 (ISTE}, VASVIK Award 1992, Diamond Award 1994 (UDCT), Dr. K.G. Naik Gold Medal 1995 (MS University Baroda), Chemtech Foundation Award, Goyal Foundation Award 1998 (Kurukshetra U), Vishwakarma Medal 2000 (INSA), 2000; State Best Teacher Award 2004 (Maharashtra), Dr. Anji Reddy Innovator of the year Award 2005 (IICHE), Diamond Award 2007 (IICHE), J. C. Bose Fellow, 2008 (DST), Life Time Achievement Award (Indian Chemical Council), Sayed Husain Zaheer Medal 2008 (INSA), ICT Superstar 2012 (ICT Mumbai), Eminent Engineer Award 2018 (Engineering Council of India), Lakshya Distinguished Leadership Award 2018 (NITIE Mumbai).

**National and International Awards :**

**Padma Bhushan** (Govt. of India, 2014),  
**Shantiswarup Bhatnagar Prize** (Engineering Sciences, 1991),  
**Eminent Engineer Award**  
(Engineering Council of India, 2018).

**Subjects Taught:**

Fluid Mechanics, Multiphase Reactor Design

**Research Interests:**

Fluid Mechanics, Multiphase Reactor Design, Computational Fluid Dynamics, Atomic Energy, Solar Energy, Bio-Energy.

**Recognized Research Guide for:** Ph.D. (Tech.) in Chemical Engineering, Nuclear Engineering, Ph.D. (Science)

**Guided students:** Ph.D. 86 , Masters: 60

Post Doctoral: 24

**Total Research Publications -**

National : 25

International: 500

**Current Students:**

PhD. 10

Masters: Nil

Post-Doctoral: 4

**Citations:** 11209 (according to Scopus)

**H-index:** 54 (according to Scopus)



**EMERITUS PROFESSOR OF EMINENCE  
PROF. G. D. YADAV**

*B. Chem. Eng. Ph.D. (Tech.), D.Sc. (Hon. Causa, DYPK), FTWAS, FNA, FASc, FNASC, FNAE, FRSC (UK), FISTE, FIChE (UK), FIChE, FICS*

Former Vice Chancellor and R.T. Mody Distinguished Professor

Tata Chemicals Darbari Seth Distinguished Professor of Innovation and Leadership

J.C. Bose National Fellow (Govt. of India)

Adjunct Professor, RMIT University, Melbourne, Australia

Adjunct Professor, University of Saskatchewan, Saskatoon, Canada

Conjoint Professor, University of New Castle, Australia

Padmashri by President of India (Fourth Highest Civilian Honour)

**Research Interests :**

Green Chemistry and Technology (Fundamental and applied aspects of green chemistry and engineering, particularly in the design and development of benign and eco-efficient processes in the chemical and allied industries such as bulk chemicals, intermediates, pharmaceuticals, fine chemicals, perfumes and flavours, and inorganics); Catalytic Science and Engineering (New catalytic materials, phase transfer catalysis, ionic liquids, reactions in supercritical carbon dioxide, catalysis modelling and simulation, biocatalysis in non-aqueous media, synergism of chemical catalysis with microwaves and ultrasound, and cascade engineered catalysis, renewable materials as feedstock for value added chemicals, biorefinery); Nanomaterials and nanocatalysis (Solid acids, superacids and bases, supported metals as nanocatalysts, sulphated zirconia, UDCaT series of novel catalysts, ion exchange resins, heteropoly acids, clays, and zeolites, novel redox materials, carbon nanotubes); Biotechnology (Enzyme catalysis in pharmaceutical transformations in non-aqueous media, chiral separations, biomass conversion, biorefinery, Synergism of Microwaves and Enzymes); Energy Engineering (Petroleum Engineering, Flow through porous media, Network modelling, Novel methods of enhanced oil recovery; Coal conversion, Hydrogen generation and storage)

**P**rofessor G.D. Yadav was conferred Padmashri By the President of India in 2016. He has won over 125 national and international honours, awards, fellowships, editorships, etc. Several Life Time Achievement Awards have been bestowed on him by prestigious organizations. He is an elected Fellow of all National Science and Engineering Academies in India which is rare: Indian National Science

Academy (INSA), Indian Academy of Sciences (IASc), National Academy of Sciences, India (NASI), Indian National Academy of Engineering (INAE) and The World Academy of Sciences, Trieste (TWAS). He is a Fellow of Royal Society of Chemistry, UK, Institution of Chemical Engineers, UK, Indian Institute of Chemical Engineers, Indian Chemical Society, and Indian Society for Technical Education, among others. He is one of the topmost engineering scientists and academicians in India, who despite being an administrator, is still actively involved in guiding Ph.D., patenting, publishing, consulting and transferring technologies to industry. He has given more than 670+ talks including prestigious orations, plenary lectures, keynote addresses and seminars across the world in his illustrious career. He has been an active consultant to industry with more than 70 assignments and over 70 sponsored research projects for past 30 years. He has been involved in many policy making prestigious committees of central and state governments, UGC, AICTE, NBA, CSIR, DBT, MHRD, NAAC, CII, FICCI, etc. He has provided inspiring leadership to the Institute of Chemical Technology (ICT), the Indian Institute of Chemical Engineers (IIChE), Catalysis Society of India, and Maharashtra Academy of Sciences. As President of IIChE in 2001, he changed the face of IIChE and made it a vibrant body. Under his dynamic leadership, ICT has established two new campuses, ICT Mumbai Indian Oil Odisha Campus Bhubaneswar with complete support of Indian Oil Corporation and partnership of IIT Kharagpur for research and innovation and Marathwada Jalna campus. Both these campuses will have innovative programmes of education and innovation which will create entrepreneurs and are unparalleled example in India and demonstrate Prof Yadav's vision and leadership of academia. ICT has won many awards under his leadership including the University of the Year Award by FICCI (2018). Five documentaries are available on YouTube on his life and vision.

**Subjects Taught:** Fundamentals of Green Chemistry and Technology

**Recognized Research guide for**  
Ph.D. (Tech.) in Chemical Engineering,  
Bioprocess Technology,  
Green Technology, Ph.D. (Science) in Chemistry

**Guided students:**

Ph.D.: 97, M. Tech.: 107, Post Doc: 34

**Total Research Publications**

National: 8, International: 439  
h-Index: 56; i-10 index 239,  
Citations: 11,000+

**Patents:**

Total Patent Application Filed: 95;  
Total Patents Granted: 52;  
(a) Total Indian Filed: 53;  
(b) Total Indian Granted: 32;  
(c) Total International Filed: 40;  
(d) Total International Granted: 20

**National and International Awards and Recognitions : (Over 125)**

- Padmashri (Govt. of India, 2016),
- D.M. Trivedi Life Time Achievement Award by Indian Chemical Council,
- Dr B.P. Godrej Life Time Achievement Award by Indian Institute of Chemical Engineers,
- Professional Award (100 Rotary Clubs),
- Founding Chair, ACS India International Chapter
- President Indian Chemical Society
- President, Maharashtra Academy of Sciences
- Former President, Catalysis Society of India
- Former President, Indian Institute of Chemical Engineers
- Council Member, Indian National Science Academy (2019-)
- Independent Director: Godrej Industries Ltd, Aarti Industries Ltd, Meghmani Organics Ltd, Bhageria Chemicals Ltd, Clean Science & Technology Pvt Ltd.

## ADJUNCT PROFESSORS



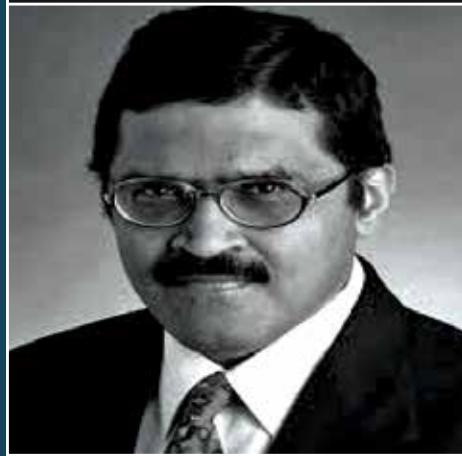
**PROF. SURESH K. BHARGAVA**  
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**Dr. ASHWINI NANGIA**  
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## ADJUNCT PROFESSORS



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and Jack Parker Chaired Professor  
3004 and Assistant Professor,  
Chemical and Biological  
Engineering  
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Tel: 518-276-6298  
Email: [gardes@rpi.edu](mailto:gardes@rpi.edu)



**PROF. KESHAVAN NIRANJAN**  
Professor of Food Bioprocessing  
Editor, Journal of Food Engineering  
Department of Food and  
Nutritional Sciences  
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Tel: +44 (0) 118 378 8388



**Dr. MUKUND S. CHORGHADE**  
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**Dr. U. KAMACHI MUDALI**  
Chairman and Chief Executive  
Heavy Water Board, Department  
of Atomic Energy, Government of  
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Anushaktinagar, Mumbai – 400 094.  
Tel : 25560870  
Email : [ce@mum.hwb.gov.in](mailto:ce@mum.hwb.gov.in);  
[kamachi@mum.hwb.gov.in](mailto:kamachi@mum.hwb.gov.in)



**PROF. M.A. SHENOY**  
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**Dr. AJAYAN VINU**  
New Castle University, Australia  
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Email: [ajayan.vinu@newcastle.edu.au](mailto:ajayan.vinu@newcastle.edu.au)

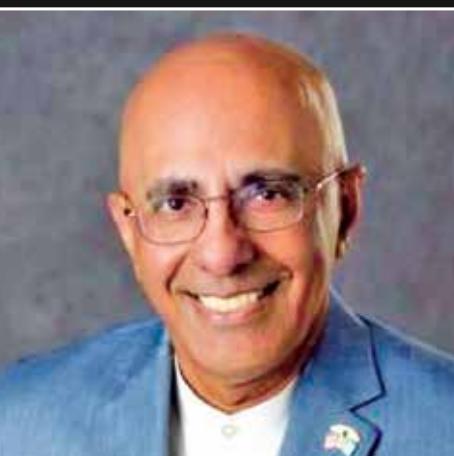
## ADJUNCT PROFESSORS



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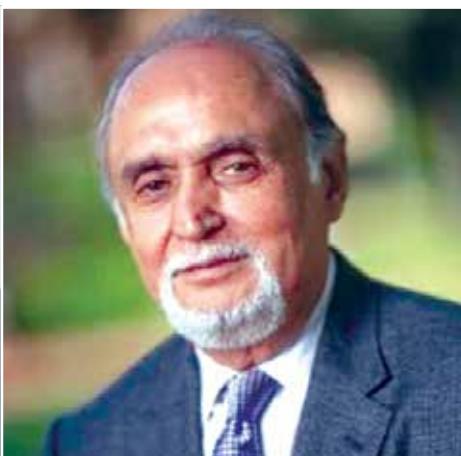
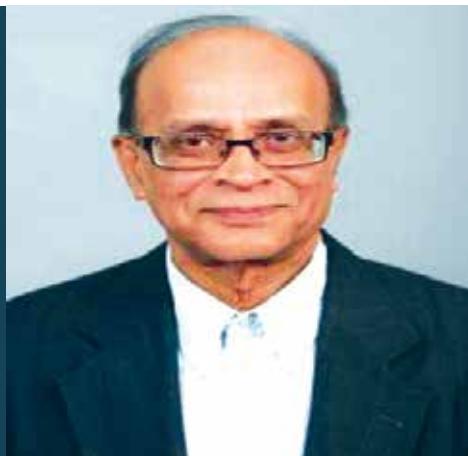


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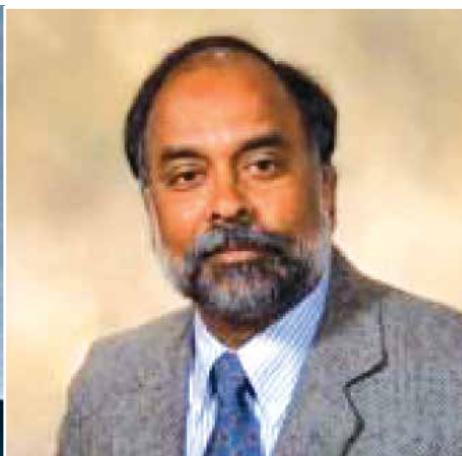
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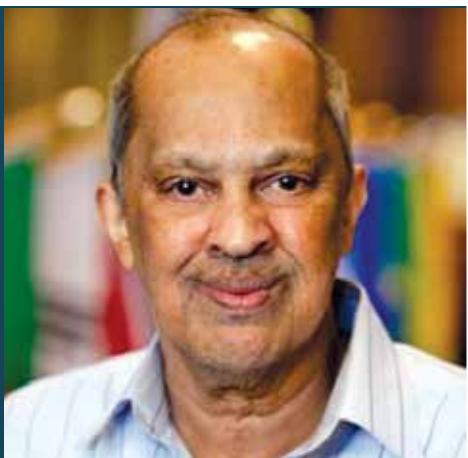


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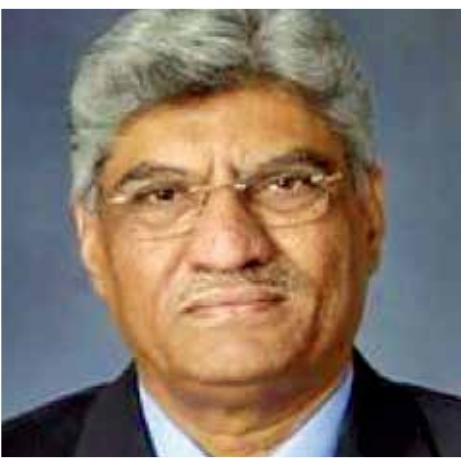


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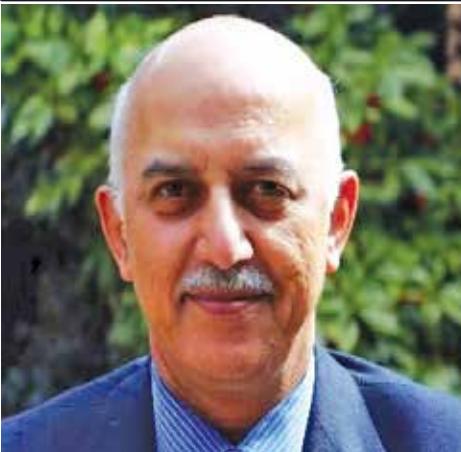
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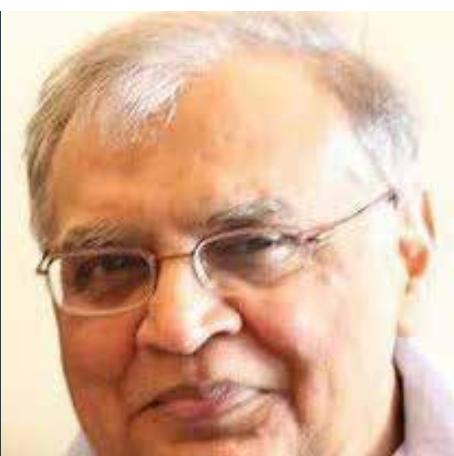


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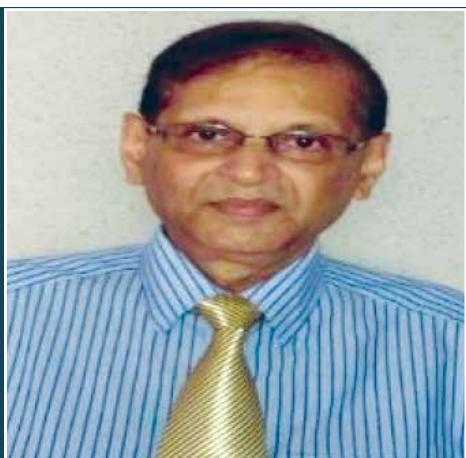
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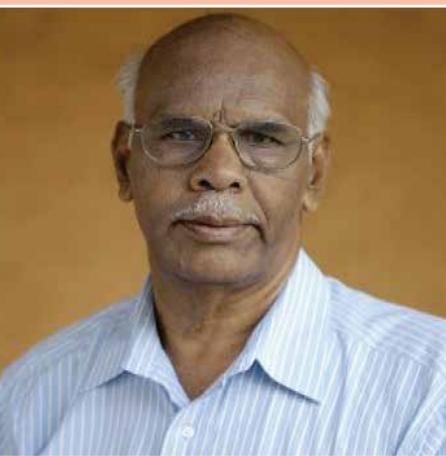
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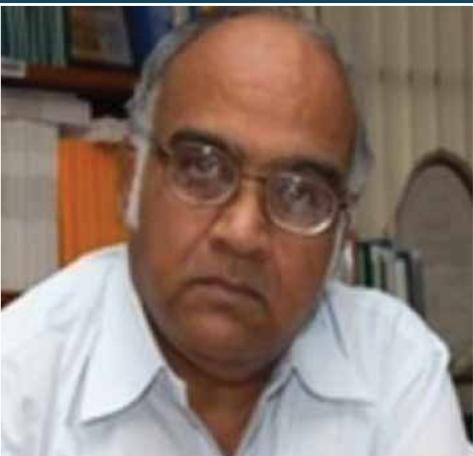


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Third Convocation, March 8, 2014



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Linus Pauling Research Professor  
& Honorary President Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore

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**PADMAVIBHUSHAN**  
**Professor M.M. Sharma**  
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Fourth Convocation, February 16, 2015



**Professor George Whitesides**  
Harvard University, USA  
<http://gmwgroup.harvard.edu>



**Shri Mukesh D. Ambani**  
Chairman and Managing Director  
Reliance Industries Ltd.

Sixth Convocation, February 8, 2017



**Nobel Laureate Professor Jean-Marie Lehn**  
Professor at Collège de France in Paris  
<https://isis.unistra.fr/laboratory-of-supramolecular-chemistry-jean-marie-lehn/>



**Nobel Laureate Professor Robert H. Grubbs**  
Victor and Elizabeth Atkins Professor of Chemistry  
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Seventh Convocation, February 23, 2018



**Nobel Laureate Professor Ryoji Noyori**  
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Director of Science Museum, Japan Science Foundation,  
RIKEN Fellow, RIKEN University Professor, Nagoya University, Japan  
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ENGINEERING** ]



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**Head of the Department**

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**RESEARCH INTERESTS:**

Computational Fluid Dynamics, Transport Phenomena, Membrane Separation Processes, Liquid Extraction

**Recognized Research Guide for**

Ph. D. (Tech.) as well as Ph. D. (Sci.)

**Guided students:** Ph.D.23, Masters: 51

**Total Research Publications - International:** 122

Total Citations = 1900; H-Index = 21

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow, Maharashtra Academy of Sciences 2012; Herdillia Award of I. I. Ch. E. for excellence in Basic Research 2013. Prof. M. M. Sharma Science and Technology Award 2016, Fellow, Indian National Academy of Engineering, 2019.

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**Co-ordinator - PGDCTM, Centre of Excellence- Process Intensification, Dean IQAC**

**SUBJECTS TAUGHT :**

Chemical Engineering Thermodynamics I, Chemical Engineering Thermodynamics II, Interfacial Science and Engineering.

**RESEARCH INTERESTS :**

Interfacial Science and Engineering, Microemulsions, Energy and Exergy Engineering, Absorption Cycles, Utilization of lowgrade energy, applications of artificial neural networks

**Recognized Research guide for**

Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology,

Ph.D. (Science) in Chemistry

**Guided students:** Ph.D. 39, Masters: 80;

**Total Research Publications:**

National: 03, International: 76

Patents: 11, H-Index: 12, Citations: 510

**NATIONAL AND INTERNATIONAL AWARDS:**

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INSA Best teacher award, 2016

UDCT Alumni Association Distinguished Alumnus Award 2019



**Dr. V. H. DALVI**

*B.Chem. Eng., M.S., P.D.ENG. (Enschede, The Netherlands),  
Ph.D. (Austin, USA)*

**R.A. Mashelkar Assistant Professor,  
Co-coordinator, DBT-ICT Center for Energy  
Biosciences**

**SUBJECTS TAUGHT:**

Mathematical methods in Chemical Engineering, Chemical Engineering Laboratory, Advanced Mass Transfer, Chemical Process Control, Industrial Engineering and Chemistry, Simulation Laboratory, Data Analysis

**RESEARCH INTERESTS :**

Molecular Simulations, Process Simulations, Solar Thermal Systems, Statistical Thermodynamics, Anaerobic Digestion, Energy Engineering.

**Recognized Research guide for**

Ph.D. (Tech) in Chemical Engineering

**Guided students:** Ph.D. : 2(coguided) + 5 (ongoing)

Masters: 10 + 4 (ongoing)

**Total Research Publications: International:** 17

**Patents:** 2 (Granted) 3 (Under Review)

**PROF. V. G. GAIKAR, F.N.A.E.**

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

**Bharat Petroleum Distinguished Professor of  
Chemical Engineering and Former Co-ordinator DBT-  
ICT Centre for Energy Biosciences,**

**Former Vice Chancellor, Dr. Babasaheb Ambedkar  
Technological University, Lonere**

**SUBJECTS TAUGHT:**

Process Development and Engineering, BioReaction Engineering, BioSystem Engineering, Chemical Process control Advanced Separation Processes

**RESEARCH INTERESTS :**

Renewable Energy Resources, Reactive Separation Processes, Molecular Simulation for Reactive Sorption and Metal Ion Complexation, Interfacial Science and Engineering and Hydrotropy, Complex Fluid Behaviour, Synthesis of nanoparticles and development of applications.

**Recognized Research guide for** Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology, Ph.D. (Science) in Chemistry, Green Technology.

**Guided students:** Ph.D. 49, Masters: 78

**Total Research Publications:** National: 04, International: 183

Patents: 11, H-Index: 28, Citations: 2602

**NATIONAL AND INTERNATIONAL AWARDS:**

- Fellow, Maharashtra Academy of Sciences,(2004)
- Eminent Engineer, Institution of Engineers (India), and Acharya P C Ray Memorial Lecture, Institution of Engineers (India), (2019)
- UAA Distinguished Alumnus Award, ICT (2016)
- IICHE - D.O.S.T. Dr. S.K. Sharma Medal (2014)
- IICHE - CHEMCON Distinguished Speaker Award (2014)
- IICHE - Herdillia Award for Excellence in Basic Research in Chemical Engineering (2004),
- Best Teacher Award, University of Mumbai (2002)
- UGC Carrer Award, 1994,
- INSA Young Scientist, Indian National Science Academy (1992), Young Associate, Indian Academy of Sciences.(1992)



**PROF. PUSHPITO KUMAR GHOSH***Ph.D. (Chemistry), Princeton University, U.S.A.*

**K. V. Mariwala-J. B. Joshi Distinguished Professor of Chemical Engineering; Emeritus Professor, CSMCRI-AcSIR;  
Former Director, CSIR-Central Salt and Marine Chemicals Research Institute, Bhavnagar**

**SUBJECTS TAUGHT:**

Innovations in Chemical Technology (UG), Industrial and Engineering Chemistry (Inorganic Chemicals) (UG), Renewable Energy Sources (PG); Safety and Risk Management (PG)

**RESEARCH INTERESTS:**

Salt and Marine Chemicals; Membrane-based processes; Green Chemistry; Renewable Energy; Chemical Technology; Analytical Studies

**Recognized Research Guide for:**

ICT (Chem. Engg. and Green Technology); AcSIR, New Delhi

**Guided students:** Ph.D. 8, Masters: 2**Total Research Publications:**

National: 4, International: 85

Citation Index: 4701; H-Index: 35, Patents: 19

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow of Indian Academy of Science; DaimlerChrysler Environmental Leadership Award; Indian Chemical Council's Lifetime Achievement Award; Indian Desalination Association's Lifetime Achievement Award (2015); MRSI Silver Jubilee Medal (2014); 2010 VASVIK Award, Chemical Science and Technology (awarded in 2013); CIPET National Award (2012); CSIR Rural Technology Award; Chemcon Distinguished Speaker Award (2017).

**Dr. PARAG R. GOGATE**

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

**Associate Professor of Chemical Engineering**

**Course Co-ordinator Bio-process Technology Certificate course on Practice of Chemical Technology,  
Co-ordinator Information Processing Centre**

**SUBJECTS TAUGHT:**

Chemical Reaction Engineering, Cavitation for Green Processes, Process Calculations, Engineering Applications of Digital Computers

**RESEARCH INTERESTS:**

Sonochemistry, Hydrodynamic Cavitation, Process Intensification, Water and Wastewater Treatment, Enzymatic Reactions, Polymer Chemistry, Advanced Oxidation Processes

**Recognized Research Guide for:** Ph.D. (Tech.) in Chemical Engineering, Green Technology, Bioprocess Technology; Masters in Chemical Engineering, Green Technology, Bioprocess Technology

**Guided students:** Ph.D. 16, Masters: 50

**Total Research Publications:** National: 17, International: 253,

Citations as per Scopus: 14400+ H-index : 64

**NATIONAL AND INTERNATIONAL AWARDS:**

Anil Kumar Bose Medal of the Indian National Science Academy (INSA), 2011; Young Associate of Indian National Academy of Engineering, 2012; Chartered Engineer and Member, Institution of Chemical Engineers, UK, 2013; The SCEJ Award for Outstanding Asian Researcher and Engineer given by The Society of Chemical Engineers, Japan, 2013; Hindustan Lever Biennial Award for the Most Outstanding Chemical Engineer of the Year Under The Age Of 45 Years of Indian Institute of Chemical Engineers, 2013; Fellow, Maharashtra Academy of Sciences, 2014; Outstanding Professor Award given by Indian Specialty Chemicals Manufacturing Association, 2015. Maharashtra State National Award for Best Research work done by teachers of engineering colleges, Indian society for technical education, New Delhi - 2016. Prof. M M Sharma award for Science and Technology given by Marathi Vidnyan Parishad, Mumbai, 2017; Most Outstanding Faculty Research Award in the Chemical Engineering Discipline, Careers 360, 2018



**Dr. SACHIN JADHAV**  
*Ph.D. (Tech.) in Chemical Engineering*  
**Assistant Professor in Chemical Engineering**

**SUBJECTS TAUGHT:**

Chemical Engineering Laboratory

**RESEARCH INTERESTS:**

Water and Wastewater Treatment, Membrane-based Separation, Nanomaterials Synthesis and their Applications, Adsorption-based Separation, Waste Valorization, Petrochemicals, Chemical and Enzymatic Kinetics, Process Modeling and Simulation, Drying Technology, Industrial Crystallization

**Recognized Research Guide for:**

**Guided students:** Ph.D. 0, Masters: 0

**Total Research Publications-**

National: 01, International: 09

Citation : 184; H-Index: 05

**Dr. RATNESH JAIN (AVHUMBOLDT FELLOW)**

*M.Pharm, Ph.D.(Tech) Pharmaceutics*

**UGC Assistant Professor and Ramalingaswami Fellow**

**SUBJECTS TAUGHT:**

Biopharmaceutical Engineering, Introduction to Biopharmaceutical Manufacturing, Research Methodology, Biomaterials

**RESEARCH INTERESTS:**

Biosimilar/Biologics Characterization, Biopharmaceutical/Pharmaceutical Product Development using Traditional, Microfluidics and 3D Printing Technology, Nanomedicine, Cell Culture engineering

**Recognized Research Guide for Ph.D. (Tech.) in Pharmaceutics, Green Technology**

M.Tech in Bioprocess Technology, Green Technology; M Chem Engg in Chemical Engineering

**Guided students:** Ph.D. 5, Masters: 21

**Total Research Publications-**

National:2, International: 71

Citations: 965, H-Index: 18, Cumulative impact factor: 102

**Patents (granted in last 5 years)** None, Filed: 8

**NATIONAL AND INTERNATIONAL AWARDS:**

Gandhian Young Technological Innovation Award/Appreciation 2015, N. R. Kamath Book Award for book entitled 'Nanoparticulate Drug Delivery: Perspectives on the Transition from Laboratory to Market', (Woodhead Publishing Series in Biomedicine), Woodhead Publishing (Elsevier), 2014



**PROFESSOR A. M. LALI***B. Chem., M. Chem., Ph.D. (Tech.) (Chem. Eng.)***Professor of Chemical Engineering****SUBJECTS TAUGHT:**

Bioprocess Simulation Modeling and Bioreactor Design,  
 Instrumentation and Process Control, Adsorptive Separations  
 Statistical Methods.

**RESEARCH INTERESTS :**

Bioenergy, Biofuels and biomass to other chemicals, Purification of Proteins, nucleic acids and other Biomolecules, natural and synthetic APIs high value organic/inorganic chemicals, Continuous chromatography, Modeling and Adsorptive separations, Biocatalysis and Bio transformations, Bioreactor design, Mixing and dynamics of solid liquid fluidized bed, Dynamics of gas-solid circulating fluidized bed, Process integration and intensification, Process development, characterization and scale up.

Recognized Research guide for Ph.D.(Tech.) in Chem. Engg.,  
 Bioprocess Technology, Ph.D.(Sci.) in Chemistry, Biotechnology.

**Guided students:** Ph.D. Guided: 60, Masters: Guided: 75

**Total Research Publications-**

**International:** 72

**Patents (granted in last 5 years):** 26 so far

**PROF. LAKSHMI KANTAM MANNEPALLI**  
*B.Sc., M.Sc., Ph.D. (Chemistry), FNA, FNASC, FRSC*  
**Dr. B.P. Godrej Distinguished Professor of**  
**Green Chemistry and Sustainable Engineering**  
**(Former Director, CSIR-IICT Hyderabad)**

**SUBJECTS TAUGHT:**

Nanotechnology, Green chemistry

**RESEARCH INTERESTS:**

Catalysis, Materials and Process Chemistry, Nanotechnology.

Recognized Research Guide for: Chemistry and Chemical Engineering

**Guided students:** Ph.D. : 40,

**TOTAL RESEARCH PUBLICATIONS-**

National: 22, International: 332

Citations (last 5 yrs): 14672; H-Index: 65

Patents (granted in last 5 years): 52

**NATIONAL AND INTERNATIONAL AWARDS :**

2018-TWAS Fellow, 2015- Dr. Burjor P. Godrej Distinguished

Professor of Green Chemistry and Sustainability Engineering; 2015-

J.C.Bose Fellow; 2015- Eminent Scientist Award – Catalysis Society of India; 2014-Fellow of the Indian National Science Academy; India,

2013 – Fellow of The Royal Society of Chemistry, UK; 2011- Vasvik Award; 2011 - Lifetime Achievement Award, Indian Chemical Society;

2010 - Platinum Jubilee Lecture Award, ISC-2010; 2008 – Fellow

of National Academy of Sciences, India; 2006- Fellow of Andhra Pradesh Academy of Sciences, Hyderabad



**Mrs. K. V. MARATHE**  
*B E and M Tech in Metallurgical Engg*  
**Associate Professor in Metallurgical Engg.**

**SUBJECTS TAUGHT:**

Material technology, Advanced Materials, Ind. Engg. Chem.

**RESEARCH INTERESTS:**

Waste water treatment, membrane separation, ground water treatment, membrane bioreactor, electrochemical membrane bioreactor, sustainability assessment, exergy analysis.

**Recognized Research Guide for Ph.D in Chemical Engineering and Green Technology**

**Guided students:** Ph.D. 03, Masters: 32

**TOTAL RESEARCH PUBLICATIONS-**

National: 06, International: 37

H Index: 7, Total Citations: 182,

Impact factor (Scopus): 39.644

**Dr. C. S. MATHPATI**

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

**Associate Professor of Chemical Engineering,  
Nodal Officer**

**SUBJECTS TAUGHT:**

Multiphase Reactors, Process Simulation Laboratory, Bioreactor Design and Control, Advanced Flow Visualization Techniques.

**RESEARCH INTERESTS:**

Computational Fluid Dynamics, Multiphase Flow, Reactor Design, Interface Heat and Mass Transfer

**Recognized Research guide for**

Ph.D. (Tech) in Chemical Engineering

**Guided students:** Ph.D. 03; Masters: 12

**TOTAL RESEARCH PUBLICATIONS-**

International: 25



**Dr. PARAG R. NEMADE***B. Chem. Eng., M. S. and Ph.D. (University of Colorado)***UGC Assistant Professor,****Department of Chemical Engineering and Department of Oils,  
Oleochemicals and Surfactants Technology****Deputy Director, Infrastructure and Lab Development, ICT,  
Mumbai, Marathwada Campus, Jalna (on deputation)****SUBJECTS TAUGHT:**

Advanced Membrane Separations, Nanotechnology, Advanced Momentum Transfer, CE Lab

**RESEARCH INTERESTS:**

My group works on membrane separation processes, on development of new polymeric and graphene based materials for membranes, catalysts, and sensors applications. We also work on sustainability engineering, in areas such as sustainable sanitation, development of new applications for industrial wastes, etc.

**Recognized Research Guide for**

Guided students: Ph.D. 4, Masters: 28

**Total Research Publications:** International: 16, Cumulative Impact Factor: 42.236; Impact Factor per publication: 4.693; H-Index: 11; Citations: 608

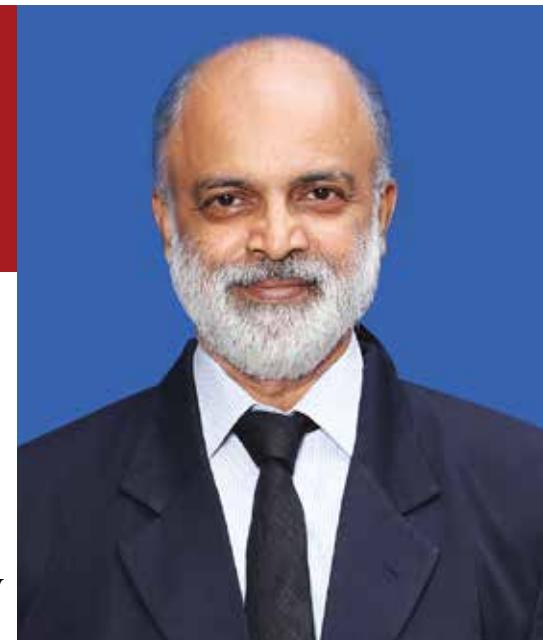
Patents (granted in last 5 years): 0, (Applied for: 3)

National and International Awards: 3

**PROF. ANIRUDDHA B. PANDIT***Ph.D.(Tech.), B. Tech. (Chem.)  
(FTWAS, FNA, FASc, FNAE, FNASC, FMASc)*

Professor, UGC Research Scientist, "C" (Professor's Grade)

J. C. Bose National Fellow (DST, Govt. of India)

**Vice Chancellor****SUBJECTS TAUGHT:**

Environmental Engineering and pollution control Chemical Project Economics, Design of Multiphase Reactors

**Research Interests:**

Physical and Chemical Processing applications of Cavitation phenomena, Sonochemistry, Ballast Water Treatment, Mixing in Mechanically agitated contactors: Experimental and CFD Investigations, Modeling of Stoves, Use of non-conventional energy sources, Synthesis of Nanomaterials Biotechnology: Protein modification, Cell disruption and Microbial fuel cell.

**Recognized Research guide for**

Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology, Green Technology, Ph.D. (Science) in Chemistry

**Guided students:** Ph.D. : 50, Masters : 68**Total Research Publications : 360**

National/International : Total Publications: 338, Citations: 10978,

H-Index: 56

**Patents (granted in last 5 years): 16****National And International Awards:**

Indian National Academy of Science (INSA), Best Teacher Award, 2012; Sir J. C. Bose Fellow of the Department of Science and Technology, Government of India, 2015; Vishwakarma Medal, Indian National Academy of Science (INSA), 2015; Fellow The World Academy of Sciences (TWAS), 2015

**PROF. ANAND VINAYAK PATWARDHAN***Ph.D. (Tech.)***Professor of Chemical Engineering****Chief, Industrial Training and Placement****SUBJECTS TAUGHT:**

Transport Phenomena, Chemical Reaction Engineering, Chemical Engineering Operations, Advanced Momentum Transfer, Green Technology, Advanced Membrane Separations

**RESEARCH INTERESTS:**

Membrane separation (separation/recovery of chemicals/metals from industrial streams; development of ceramic membranes for industrial applications), Green Technology (ionic liquids for solvent extraction/reactions; value-added chemicals from non-edible oils; greener organic chemical process development), Bioprocess Technology (synthesis of chemicals and microbial colorants / pigments), Heterogeneous reactions

**Recognized Research Guide for:** Ph.D. (Tech.)

Chemical Engineering, Ph.D. (Tech.) Bioprocess Technology, Ph.D. (Science) Chemistry

**Guided students:** Ph.D.: 13, Masters: 44

**Total Research Publications :** National: 58, International: 64  
H-Index: 19; Citations: 1454

**PROF. V. K. RATHOD***B. Tech., M. Tech., Ph.D. (Tech.)***Professor of Chemical Engineering****Controller of Examination****SUBJECTS TAUGHT:**

Heat Transfer, Advance heat transfer, separation processes, Fluid flow and Heat transfer, Multiphase Reactor, Material and Energy Balance calculation, pharmaceutical Engineering, Chemical Engineering Laboratory

**RESEARCH INTERESTS :**

Separation process, Extraction of Natural ingredients, Enzyme catalyzed reactions, Waste Treatment, Nuclear reprocessing, Separation of biomolecules, Enzyme Preparation and separation

**Recognized Research guide for** Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology, Green Technology, Perfumery and Flavour Technology, Ph.D. (Science) in Chemistry

**Guided students:** Ph.D. 27, Masters: 94;**TOTAL RESEARCH PUBLICATIONS-**

National : 01 International: 140

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow, Maharashtra Academy of Sciences 2015

Hindustan Lever Biennial Award for the Most Outstanding Chemical Engineer of the Year Under The Age of 45 Years of Indian Institute of Chemical Engineers, 2018;

Outstanding Professor Award given by Indian Specialty Chemicals Manufacturing Association, 2019.

Prof. M M Sharma award for Science and Technology given by Marathi Vidnyan Parishad, Mumbai, 2019



**PROF. B. N. THORAT**

*B.Chem.Eng., M.Chem.Eng., D.H.S.T., Ph.D. (Tech.)*  
Director of ICT-Mumbai Indian Oil Odisha Campus,  
Bhubaneswar and Professor of Chemical Engineering  
(on deputation)

**SUBJECTS TAUGHT:**

Chemical Engineering Operations, Perspectives of Society, Science & Technology, Communication Skills, Separation Processes in Chemical Engineering, Foundation Course in Entrepreneurship and Advanced Entrepreneurship

**RESEARCH INTERESTS :**

Drying Technology and Particle Handling, Process Development, Multiphase Reactors, Industrial Crystallization and Filtration, Food Processing etc.

Recognized Research guide for

Ph.D. (Tech.) in Chemical Engineering, Bioprocess Technology, Ph.D. (Science) in Chemistry.

**Guided students:** Ph.D. 27, Masters: 74;

**TOTAL RESEARCH PUBLICATIONS-**

National: 03, International: 88

Patents: 15

H-Index: 22, Citations: 1719

**NATIONAL AND INTERNATIONAL AWARDS:**

- Gunther Oertel Startup Innovation Award for Microbutor Innovation, Covestro, (Former Bayer Material Science, Germany), 2017.
- Millennium Alliance Award by UKAID (DFID) and FICCI: Solar Conduction Dryer Scale-up in Nepal, 2016
- Millennium Alliance Award by UKAID (DFID) and FICCI: CassavaTech scale up in Kenya, 2016
- Lifetime Achievement Award for Outstanding Contribution to Drying and Dehydration, given by at ADC-2019.
- NOCIL AWARD for excellence in design of new equipment and process, 2015.
- The VASVIK Award for the year 2012 in the field of Chemical Sciences and Technology, 2015.
- Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) each for Innovative Cassava Dryer, and Solar Grain Dryer 2013.
- Dell Social Innovation Award of USD 60,000 (Sixty thousand US Dollar) for developing “Solar Conduction Dryer”, 2013.
- Vocational Excellence Award, for his valuable contribution to Science and Society for making Solar Conduction Dryer for the Agricultural Sector, Rotary Club of Mumbai Cuffe Parade, 2013.

**Dr. PRAKASH D. VAIDYA**

*B.E. (Chem.), M.Chem. Engg., Ph.D. (Tech.) in Chem. Engg.*  
**Rashtriya Chemicals and Fertilizers**  
**Associate Professor of Chemical Engineering,**  
**Course co-ordinator Green Technology,**  
**Co-ordinator Certificate course on Chemical Safety and**  
**Risk Management, Head Hostel Warden**

**SUBJECTS TAUGHT:**

Chemical Reaction Engineering, Industrial and Engineering Chemistry, Design and Analysis of Experiments, Fuels Engineering, Instrumentation and Process Control

**RESEARCH INTERESTS:**

Bio-energy, carbon capture and recycling, wastewater treatment

**Recognized Research Guide for:**

M.Chem. Engg., M.Tech. (Green Tech.), Ph.D. (Tech.) in Chem. Engg., Ph.D. (Tech.) in Green Tech., Ph.D. (Sci.) in Chemistry

**Guided students:** Ph.D. 24 , Masters: 40

**TOTAL RESEARCH PUBLICATIONS -**

International: 88, H-Index: 22, Citations: 2800  
 Patents (granted in last 5 years): 01

**NATIONAL AND INTERNATIONAL AWARDS:**

University of Liverpool (UK) India Fellowship Award (2015)  
 Bioenergy - Award for Cutting Edge Research (B-ACER) Fellowship (2017)

**DR. MANISH YADAV**

*B. Chem. Eng., M.Tech., Ph. D. (Tech.) in Chemical Engg*  
**Assistant Professor in Chemical Engineering**

**SUBJECTS TAUGHT:**

Transport Phenomena, Chemical Engineering Laboratory

**RESEARCH INTERESTS:**

Chemical Reaction Engineering, Nanotechnology, Crystallization

Recognized Research Guide for:

Guided students: Ph.D. 0, Masters: 0

**TOTAL RESEARCH PUBLICATIONS-**

National: 01, International: 09

Citation: 65; H-Index: 05



# Department of **DYE STUFF TECHNOLOGY**

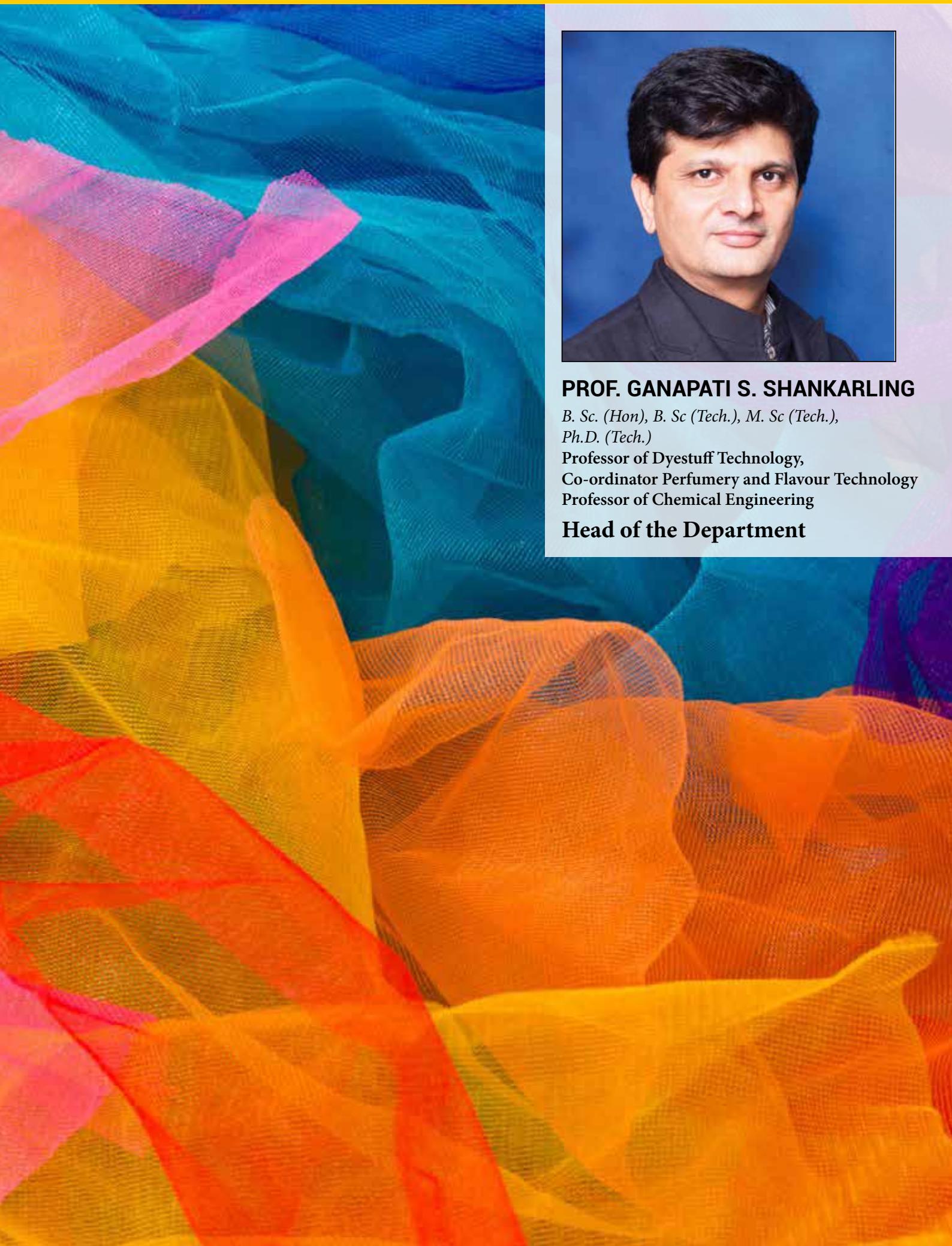


### **PROF. GANAPATI S. SHANKARLING**

*B. Sc. (Hon), B. Sc (Tech.), M. Sc (Tech.),  
Ph.D. (Tech.)*

**Professor of Dyestuff Technology,  
Co-ordinator Perfumery and Flavour Technology  
Professor of Chemical Engineering**

**Head of the Department**





**PROF. GANAPATI SUBRAY SHANKARLING**  
*B. Sc. (Hon), B. Sc. (Tech), M. Sc. (Tech), Ph.D. (Tech.)*  
**Professor of Dyestuff Technology,**  
**Co-ordinator, Perfumery and Flavor Technology.**  
**Head of the Department**

**SUBJECTS TAUGHT:**

B.Tech Course: Chemistry and technology of benzene intermediates I and II, Chemistry and technology of specialty organic intermediates and fine chemicals, Chemistry and technology of dyes and pigments, Chemistry of functional dyes, Introduction to green chemistry, Analysis of intermediates, dyes and fibres, Tinctorial chemistry lab, Experimental dying; Master of Technology: Chemistry of functional colorants, Chemistry and technology of agro chemicals, Analysis and development of green industrial processes, Chemistry of perfumes and flavors

**RESEARCH INTERESTS:**

Green Chemistry and Technology (Homogeneous catalysts, green solvents and alternative cost effective energy sources like concentrated solar radiation and cavitation technology) Oxidation Chemistry, Functional colorants: Thermo and Photochromic, Metal sensors, Chemosensor for anions, Cucurbiturils chemistry, Process developments in Intermediates, dyes and specialty chemicals.

**Recognized Research Guide for Ph.D. (Tech) in Dyestuff Technology, Green Technology, Perfumery and Flavours; Ph.D. (Sci) in Chemistry and Biotechnology**

**Guided students:** Ph.D.20, Masters: 30

**Total Research Publications:**

National: 20, International: 96

H-Index: 25, Citation : 2237

**Patents (granted in last 5 years) :** 19

**Dr. NABANITA SADHUKHAN**

*Ph.D.*

**UGC-FRP Assistant Professor**

**SUBJECTS TAUGHT:**

- Technology of Intemediates - I
- Technology of Intemediates - II
- Chemistry of Functional Dyes
- Analysis of Inorganic Raw Materials used in Dyestuff Industries
- Fluorescent Colorants
- Chromatography Techniques and Preparation of Intermediates and dyes.

**RESEARCH INTERESTS:**

Synthesis functional amphiphilics based on monodisperse polyethylene glycols and their application in biology, Biological important functional colorants, Coordination chemistry, Synthesis of organometallic molecules for functional application like OLED, Synthesis of molecular motor based fluorescent dyes for biological application namely suppression of protein aggregation and protein folding, Low molecular weight Poly Ethylene Glycols based gel for functional application and exploiting underlying supra-molecular interaction for the gelation.

**Recognized Research Guide for:** Science (Chemistry)

**Guided students:** Master : 02

**Total Research Publications :** National : 02 International: 15

H-Index: 10; Citations : 314

**NATIONAL AND INTERNATIONAL AWARDS:**

DST - Young Scientist Start-Up Research Grant, 2014.



**Dr. SATYAJIT SAHA**

*Ph.D. (Chemistry)*

**UGC-Assistant Professor**

**SUBJECTS TAUGHT:**

- Color Chemistry;
- Chemistry of Agrochemicals;
- Chemistry and technology of acid, direct and sulphur dyes;
- Preparation of dyes and intermediates;
- Analysis of intermediates, dyes and fibres;
- Chemistry and Technology of Pigments;
- Preparation, analysis of dyes, intermediates, optical brighteners and functional colorants;
- Chemistry and Technology of Benzene Intermediates-II;
- Unit Process and TLC Techniques.

**RESEARCH INTERESTS:**

Asymmetric Organocatalysis-Employing chiral organocatalysts for efficient synthetic strategies of useful chiral synthons by exploiting supramolecular interactions. Other domains are transition metal catalyzed diversity oriented synthesis of annelated N-heterocycles of biological importance and synthesis of novel functional materials and their applications as Dye Sensitized Solar Cells, Organic Light Emitting Diodes, etc,

**Recognized Research Guide for:** Science (Chemistry)

**Guided students:** Ph.D. : 1

**Total Research Publications:**

International: 13, H-Index: 11; Citations data: 670



**NATIONAL AND INTERNATIONAL AWARDS:**

FWO Visiting Postdoctoral Fellowship from Belgium, 2011



**Dr. SURAJIT SOME**

*Ph.D (IIT-Kharagpur)*

**UGC-FRP Assistant Professor**

**SUBJECTS TAUGHT:**

Chemistry of Heterocycles, Color Chemistry – An Introduction, Use of Analytical Instrument in Synthetic Organic Chemistry, Chemistry of Agrochemicals, Mechanism of Organic Reactions, Chemistry and Technology of benzene intermediate-1, Experimental Dyeing, Analysis of inorganic Raw Materials, Preparation of Intermediates, Preparation of Dyes

**RESEARCH INTERESTS:**

Synthesis of graphene derivatives and their applications: Semiconductor materials, Energy storage materials, Flame retardant, Bio-probes, Sensors, Anticancer materials, Surfactants, Advanced catalysts.

**Recognized Research Guide for** Guided students: Ph.D.: 3

Total Research Publications- International: 41

H-Index :20, Citations: 1624

**Patents (granted in last 5 years):** 8

**NATIONAL AND INTERNATIONAL AWARDS:**

SERB Young Scientist Award 2016; Research Fellow Award 2013 from National Research Foundation (NRF), South Korea; Dr. D. S. Kothari Fellowship Award 2008.



### PROF. N. SEKAR

B.Sc (Hon), B.Sc (Tech), Ph.D (Tech),  
B. A. (Music), M.A. (German). M.Music  
**Professor of Tinctorial Chemistry**

#### SUBJECTS TAUGHT:

Ph. D. / M. Tech. (Course Work): Fluorescent Colorants in Bio-imaging, Chemistry and Technology of Agrochemicals, Chemistry and Technology of High Performance Pigments Chemistry and Technology of Functional Dyes, Proton Transfer Reaction.B. Tech.: Mechanisms of Organic Reactions, Chemistry of Substrates, Color Chemistry: an Introduction, Chemistry of Heterocyclic Compounds, Chemistry and Technology of Direct, Acid, and Sulphur Dyes, Analytical Instruments in Colorant Industry.Research Interests: Computational colour chemistry (DFT and TD-DFT computations), greener synthesis of multistep heterocyclic and fused heterocyclic compounds, process development of intermediates, fluorescent colorants for bio-sensors, security applications, molecular imprinting, synthesis of perfumery and flavor compounds, laser colorants, NIR absorbing, fluorescing and reflecting colorants, tinctorially strong photostable disperse dyes, colorants for DSSCs. **Recognized Research guide for Ph.D. (Tech.)** in Dyestuff Technology, Green Technology, Ph. D. (Science) in Chemistry, Ph.D in Textile Chemistry

**Guided students:** Ph.D. 24, Masters: 23

**Total Research Publications :** National : 16 International: 191

**Cumulative impact factor:** 155, H-Index: 16, Citations: 3282

**Patents (granted in last 5 years):** 07

#### NATIONAL AND INTERNATIONAL AWARDS:

- Fellow of Society of Dyers and Colourists, (UK)
- Fellow of Association of Chemical Technologists, India
- Fellow of Indian Chemical Society
- Fellow of Society for the Advancement of Electrochemical Science and Technology
- Member of Indian Membrane Society
- Fellow of Maharashtra Academy of Sciences

**DR. SUBRAHMANYAM V. GARIMELLA**  
B. Sc., B. Tech, MS., PhD (Engineering)  
**UGC-Assistant Professor**

#### SUBJECTS TAUGHT:

Formulations in Fine Chemicals Industry (currently teaching), Materials Chemistry, Advanced Applications of Nanotechnology, Composites and Nanocomposites, Non-Ferrous Materials Technology, Introduction to Nanotechnology, Advanced Materials Technology, Materials Science, Micro and Nano Material Characterization, Engineering Materials

#### RESEARCH INTERESTS:

Matter Under Extreme Conditions of Pressure, Temperature and other fields; Synchrotron Sciences and Engineering; Materials Sciences and Chemical Technology

**Recognized Research Guide for:** Sciences & Engineering

**Guided students:** PhD (01)

**Master :** Nil

**Total Research Publications :** National : Nil International: 11

**H-Index:** 5 Citations: 117







# Department of **FIBRES & TEXTILE PROCESSING TECHNOLOGY**



**PROF. (DR.) RAVINDRA ADIVAREKAR**

*B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech.)*

**Professor in Fibres Chemistry**

**Head of the Department**



**PROF. (Dr.) RAVINDRA V. ADIVAREKAR**  
B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph.D. (Tech)  
**Professor in Fibres Chemistry and**  
**Head of the Department**

**SUBJECTS TAUGHT:**

Technology of Printing, Theory of Textile Colouration, Biotechnology in Textiles, Pretreatment of Textiles, Water and Energy Conservation in Textile Processing, Sustainable Processing of Textiles, Technology of Dyeing, Management of Textile Process House, Advanced Textile Processing.

**RESEARCH INTERESTS:**

Textile colouration, Green Processing of Textiles, Medical Textiles, Enzyme manufacturing and application, Natural dyes for textiles and cosmetics, Textile composites, Novel Processing Techniques. Microbial Colourants, Multi-functional finishing of textiles.

**Recognized Research Guide for** Ph.D (Tech.) Fibres and Textile Processing Technology, Ph.D (Sci.) Biotechnology, Ph.D (Sci.) Textile Chemistry.

**Guided students:** Ph.D. : 19, Masters : 45

**Total Research Publications:** 180

National: 54 International: 70, H-Index : 13 Citations : 553

Patents: 03

**PROF. RAVINDRA D. KALE**

Ph.D. (Tech.)

**Professor of Textiles Chemistry**

**SUBJECTS TAUGHT:**

Technology of Textile Polymers, Polymer Chemistry, Testing and Analysis of Fibres, Testing of Textile Materials, High tech and Industrial Fibres, Technology of non-wovens, Dyeing of Natural and Synthetic fibres, Lab Testing of Textiles and Garments, Fastness Lab

**RESEARCH INTERESTS:**

Effluent treatment using nanoparticles, Application of nano emulsions in Textiles, Synthesis and application of nanoparticles, Use of Polyelectrolytes Multilayers for imparting Novel Properties to Textile Polymers, Green Composites Self Reinforced Composites, Biodegradable packaging films and foams, Functional Finishes for Natural and Synthetic Fibres, Processing of Polyester fibres at room temperature, Modification of Synthetic Fibres by Melt Spinning, Hydrophilic polyester using natural biopolymers, Green Synthesis of nanoparticles, Effluent treatment using natural materials.

**Recognized Research Guide for** Ph.D (Tech.) Fibres and Textile Processing Technology, Ph.D (Sci.) Textile Chemistry.

**Guided students:** Ph.D.: 5, Masters: 29

**Total Research Publications:**

National: 08 International: 52

H-Index: 09 Citations: 224

Patents (Filled in last 5 years): 3





**Dr. KEDAR S. KULKARNI**  
B.Sc. (Chemistry), B.Sc. (Tech.),  
M. Sc. (Tech.), Ph. D. (Tech)  
**Assistant Professor (Temporary)**

**SUBJECTS TAUGHT:**

Textile wet processing machinery

**RESEARCH INTERESTS:**

Textile colouration, Finishing, Green Processing of Textiles, Natural dyes for textiles, Development of Textile wet processing machinery.

**Total Research Publications:**

National :0 International : 03



**Dr. ARANYA MALLICK**  
B.Tech., M.Tech., Ph. D. (Tech.)  
**Assistant Professor (Temporary)**

**SUBJECTS TAUGHT:**

Basics of Colouration Technology, Yarn and Fabric Formation Technology, Testing of Textile Materials, Garment Processing Technology, Textile Printing, Evaluation of Textile Chemicals

**RESEARCH INTERESTS:**

Chemical Modification of Bipolymers, Dyeing and Finishing with Natural Colourants, Sustainable Wet Processing, Waste Water Treatment

**Total Research Publications:-**

National :10 International : 04  
h-Index: 3; Citations: 16



**PROF. (Dr.) ASHOK R ATHALYE**  
B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)  
**Professor in Textile Chemistry**

**Subjects Taught:**

Theory of Textile Colouration, Wet Processing of Textiles, Laboratory Management Systems, Advanced Textile Processing, Finishing and Evaluation of Textiles

**Research interests:**

Sustainable textile processing, automotive textiles, Recycling and upcycling of textile waste material.

Total Research Publications: 81  
National: 67 International: 14



**Dr. SANDEEP MORE**  
*B.Sc., M.Sc. (Organic Chemistry), Ph.D.*  
**DST INSPIRE Faculty**

**SUBJECTS TAUGHT:**

Chemistry and Applications of Textile Auxiliaries, Smart Textile, Chemistry of Colorants and Its Applications, Environmental Aspects and Advances in Textile Processing, Chemistry of Textile Auxiliaries, Green Chemistry in Textile, Advanced Textile Characterization Techniques, Synthesis and Analysis of Dyes and Intermediates, Testing and Applications of Auxiliaries, Evaluation of Dyes and Specialty Chemicals.

**RESEARCH INTERESTS:**

Molecular Machines, Singlet Fission, Organic Electronics, Smart Textile, Novel Auxiliaries

**Recognized Research Guide for Ph.D. (Sci.) Chemistry.**

Guided students: Ph.D.: 04, Masters: 13

**Total Research Publications:**

International : 14

H-Index : 09, Citations : 340

**NATIONAL AND INTERNATIONAL AWARDS:**

DST INSPIRE Faculty Award

Early Career Research Award

**Dr. USHA SAYED**

*BSc (Hons), BSc (Tech.), MSc (Tech.) Ph.D Tech.*

**Associate Professor of Textiles Chemistry**

**SUBJECTS TAUGHT:**

Introduction to Technical Textiles, Chemistry and Application of Textile Chemicals, Technology of Dyeing and Printing, Technology of Wet Processing Machineries, Technical textile, Technology of Garment Processing, Chemistry of Textile Auxiliaries, Textile Machineries.

**RESEARCH INTERESTS:**

Textile Processing, Dyeing, printing, Bleaching, Finishing, Recycling and Reuse of Dyes and Chemicals, Surfactants, Synthesis of Specialty Chemicals, Laundry Chemicals, Enzyme technology, Polymers, Fibre science, Technical textiles, natural dyes and polymers on natural fibres, leather processing, super absorbent, processing of hosiery, garment processing, technical textile, processing of non-woven, processing of wipes, shoe technology, Nano silicon finishing.

**Recognized Research Guide for Ph.D (Tech.) Fibres and Textile Processing Technology, Ph.D (Sci.) Textile Chemistry**

Guided students: Ph.D. : 03, Masters: 42

**Total Research Publications:**

National: 26, International: 55

H-Index : 7, Citations : 117.







# Department of **FOOD ENGINEERING AND TECHNOLOGY**



**PROF. UDAY S. ANNAPURE**

*B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.)*

**Professor of Food Chemistry**

**Head of the Department**





**PROF. UDAY S. ANNAPURE**  
*B. Tech., M.Sc. (Tech.), Ph.D. (Tech.)*  
**Professor of Food Chemistry**  
**Head of the Department**

**SUBJECTS TAUGHT:**

Food Chemistry, Technology of Fruits, Vegetables and Tubers, Principles of Food Preservation.

**RESEARCH INTERESTS:**

Extrusion Processing, Non-thermal processing of food-Cold Plasma Processing, Carbohydrate Chemistry and Technology - Plant Gums, Traditional Foods, Nutraceuticals, Fermentative production and downstream processing of industrially important secondary metabolites.

**Recognized Research Guide for:** Ph.D. (Tech.) in Food Engineering and Technology, Food

Biotechnology, Bioprocess Technology, Ph.D. (Sci.) in Food Science, Biotechnology

**Guided students:** Ph.D: 15, Masters: 69

**Total Research Publications:**

National: 07, International: 81

H-Index: 24, Citations: 1308

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow of Maharashtra Academy of Science (2017)

BOYSCAST Fellow (DST Govt. of India) – 2010

Recipient of the Best Teacher Award (Professor D.V. Rege-AFST Mumbai Chapter–2011 Endowment) 2014 and 2016.

**PROF. LAXMI ANANTHANARAYAN**

*B.Sc., B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.)*

**Professor of Applied Biochemistry and  
Co-ordinator in Food Biotechnology**

**SUBJECTS TAUGHT :**

Chemistry of Food Constituents; Nutrition; Food Packaging; Current Topics in Food Science and Technology; Basics of Human Nutrition, Advances in Nutrition; Enzymes in the Food Industry.

**RESEARCH INTERESTS :**

'Fermented Foods, Traditional Foods, Nutritional Food Product Development, Extruded Foods, Food Allergens, Bioactive Peptides, Novel Food Preservation Techniques, Problems of Small Scale Food Industries, Plant Biochemistry and Fruit Ripening, Natural Pigments, Protein Purification, Enzyme Production and Downstream Processing, Protein Hydrolysates, Detection of Adulteration/ Contamination, Food Safety, Nutritional Biochemistry'

Recognized Research guide for Ph.D. (Tech.) in Food Engineering and Technology, Food Biotechnology, Bioprocess Technology, Ph.D. (Sci) in Food Science, Biochemistry, Biotechnology

**Guided students:** Ph.D. 13 (awarded), 4 (ongoing), Masters: 81 (completed) 7 (ongoing)

**Total Research Publications:**

National: 08, International: 51

**NATIONAL AND INTERNATIONAL AWARDS:**

"Dupont NutriSchorls Award" Most Nutritious Food Idea 2017





**DR. SHALINI S. ARYA**

B.Tech. (Marathwada, 2002), M.Tech. (Mumbai, 2004),  
Ph.D. (Tech) (Mumbai, 2008)

**Assistant Professor of Food Technology**

**SUBJECTS TAUGHT :**

Food Microbiology, Chemistry of Food Constituents, Technology of Cereals, Legume and Pulses, Technology of Plantation Crops, Basics of Food Science and Technology, Technical Analysis I and II(P) , Food Microbiology (P), Food Chemistry (P), Food Analysis (P), Food Processing I (P)

**RESEARCH INTERESTS :**

Indian Traditional Foods, Chemistry and Preservation of Foods, Product Development and Processing, Staling Studies in Cereal and Cereal products, Starch Chemistry and Technology, Preservation of Foods, application of newer technologies in preservation of traditional foods, Food Biotechnology, production and Downstream Processing of Biomolecules, Fermented Foods, Diabetic Foods, Functional Foods, Nutraceuticals, Fruit and Vegetable Preservation and Processing, Indian Flat Breads.

**Recognized Research guide for Ph.D. (Tech.) in Food Engineering and Technology, Food Biotechnology, Bioprocess Technology, Ph.D. (Sci.) in Food Science**

**Guided Students:** Ph.D. 4 (awarded) 4 (ongoing), Masters: 40

**Total Research Publications:** National: 15, International: 62  
H-Index 17, Citations: 1024

**NATIONAL AND INTERNATIONAL AWARDS:**

CNPq-TWAS post Doctoral Fellowship (2019), Global Young Academy (GYA), Halle, Germany member award (2018), Young Scientist award, AFST, India (2017), best paper award, Elsevier, Florida (2017), Malaspina international scholar award, ILSI, USA (2016), Innovative Research Idea award, CAS TWAS, China (2014).

**DR. SNEHASIS CHAKRABORTY**

B. Sc., B. Tech., M. Tech., Ph.D.

**Assistant Professor of Food Technology**

**SUBJECTS TAUGHT:**

Introduction to Food Systems, Principles of Food Preservation, Food Engineering, Food Process Engineering, Advances in Food Technology, Advances in Food Engineering, Experimental Design and Optimization in Food Processing

**RESEARCH INTERESTS:**

Food Process Engineering, Non-thermal processing of food, Kinetics modeling, Shelf-life extension, Sensory analysis, Process optimization and Product development

**Recognized Research Guide for:** Ph.D (Tech) and M. Tech in Food Engineering and Technology, Food Biotechnology.

**Guided students:** Ph.D: 6 (ongoing), Masters: 6

**Total Research Publications:** National: 01, International: 25  
H-Index: 09, Citations: 372

**NATIONAL AND INTERNATIONAL AWARDS:**

Best PhD thesis in Agricultural Engineering by ICAR, 2017,  
DAAD Fellowship under Re-invitation program of former  
DAAD scholarship holders 2018





**Dr. JYOTI SONTAKKE-GOKHALE**

*Ph.D. in Bioprocess Technology*

**Assistant Professor**

**SUBJECTS TAUGHT:**

Food Biotechnology; Waste Management in Food Processing; Design and Analysis of Experiments; Biotechnology of Fermented Foods; Fermentation Technology; Nutraceuticals and Functional Foods; Technical Analysis Lab; Biochemistry lab; Microbiology Lab

**RESEARCH INTERESTS:**

Biocatalysis; Chiral Technology; Waste management; Fermentation Technology; Biofuels; Thermal and Non-thermal processing of Foods; Green Technology; Nutraceuticals

**Recognized Research Guide for Ph.D. (Tech.) in Bioprocess Technology and Food Biotechnology**

**Guided students:** Ph.D.: 2 (ongoing), Masters: 7

**Total Research Publications:**

International: 7 Book chapters 4

H-Index: 4; Citations: 77

**PROF. S. S. LELE**

*B.Chem.Engg. M.Chem.Engg., Ph.D. (Tech.)*

*Fellow, Maharashtra Academy of Sciences*

*Fellow, Biotech Research Society of India (BRSI) ,*

*Fellow, Asso. of Food Sc. and Tech. (AFST)*

**Professor of Biochemical Engineering**

**Director of ICT-Marathwada Campus Jalna (on deputation)**

**SUBJECTS TAUGHT:**

Introduction to Food System, Food Engineering, Food Process Engineering, Fundamentals of Food Process Engineering, Bioprocess Engineering and Technology, Advances in Food Engineering.

**RESEARCH INTERESTS:**

Food product/process development, fruit and vegetable processing to reduce post-harvest losses, fruit wines, holistic utilization of fruit and vegetable wastes, food allergy

**Recognized Research Guide for Ph.D. (Tech.) in Food Engineering and Technology, Food Biotechnology, Bioprocess Technology, Ph.D. (Sci) in Food Science, Biotechnology**

Guided students: Ph.D. : 32 (awarded), 6 (ongoing), Masters: 71

**Total Research Publications:**

National: 11, International: 131

H-Index: 29, Citations: 3791

Patents Granted: 03

**NATIONAL AND INTERNATIONAL AWARDS :**

VASVIK award (2018), "Uncha Maza Zoka" Zee Marathi, (2016), Distinguished Alumnus Award of UAA under Academics (2015).





**PROF. REKHA S. SINGHAL**  
*Ph.D (Tech) (Food Technology)*  
**Professor of Food Technology and**  
**Dean (Research, Consultancy and Resource Mobilization)**

**SUBJECTS TAUGHT:**

Food Additives and Ingredients, Principles of Food Analysis, Technology of Dairy, Animal and Plantation Products, Advances in Food Technology, Comprehensive Techniques in Food Analysis, Food Safety and Toxicology

**RESEARCH INTERESTS:**

Food Science and Technology, Carbohydrate Chemistry and Technology, Fermentative Production and Downstream Processing of Biomolecules, Supercritical carbon dioxide Extraction of Biomolecules, Food Biotechnology

Recognized Research Guide for Ph.D (Tech) (Food Engineering and Technology), Ph.D (Tech) (Food Biotechnology), Ph.D (Tech) (Bioprocess Technology),

Ph.D (Biotechnology), Ph.D (Food Science)

Guided students: Ph.D. 37, Masters: 99

**Total Research Publications:**

National: 44, International: 375

H-index as per scopus/google scholar: 49/64;

Citations as per scopus: 10713/16914

Patents (granted in last 5 years) 01

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellowship, Biotech Research Society of India, for the year 2011; Malaviya Memorial Award (senior faculty), Biotech Research Society of India, for the year 2011; C. G. Memorial Award, XVIII Carbo Conference, Forest Research Institute, Dehradun, December 20, 2014; ISCMA Award for the year 2013-2014 instituted for 'Outstanding Professor', September 2, 2014; Prof. Man Mohan Sharma Award for the year 2015, 2016. Fellow (FIBA) award of the International Bioprocessing Association- An International Forum on Industrial Bioprocesses, for the block years 2017-2018, conferred on May 2, 2019.



# Department of OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY



### **PROF. A. P. PRATAP**

*B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.)*

**Professor of Oils, Fats and Waxes  
Technology**

**Head of the Department**





**PROF. A. P. PRATAP**

*B.Sc. (Tech), M.Sc. (Tech), Ph.D. (Tech.)*

**Professor of Oils, Fats and Waxes Technology**

**Head of the Department**

**SUBJECTS TAUGHT :**

Technology of Oil and Fat Production, Processing of Oil Bearing Materials, Processing of Oils, Fats and Waxes, Fat Based Products, Cosmetics and Perfumery, Processing of Oleochemicals and Cosmetics, Processing of Soaps, Detergents, Oleochemicals and glycerine, Triboapplication Laboratory, Waxes, Lubricants and Greases, Technology of Fat Based Products, Analysis of Oils, Fats and Waxes

**RESEARCH INTERESTS :**

Tribo applications of oils and fats, structural modifications of oils, fats and fatty acids, Petroleum products, lubricants, Additives and specialty products, microbial Bio surfactants etc.

**Recognized Research guide for Ph.D. (Tech.) in Oils, Oleochemicals and Surfactants Technology, Ph. D. Tech. in Green Technology, Ph. D. (Sci.) in Chemistry, Ph. D. Tech. in Bioprocess Technology, Ph. D. (Science) in Biotechnology**

**Guided students:** Ph.D. 13, Masters: 60;

**Total Research Publications:**

National: 11; International: 46, H-Index: 10, Citations: 510

**PROF. R. D. KULKARNI**

*B.Sc.(Tech), M.Tech., Ph.D. (Tech.)*

**Professor of Oil Technology**

**Pro-Vice Chancellor, Mumbai University**

**(on deputation)**

**SUBJECTS TAUGHT:**

Surface Active Agents, Production and Applications of Surfactants, Soaps and Detergents, Chemistry of Oleochemicals and Surfactants, Chemistry of Oils and Fatty Acids

**RESEARCH INTERESTS:**

Green Surfactants, Surfactant mediated synthesis and Microheterogeneous Systems, Chemical Modification of Lipids, Biolubricants, Lipid Excipients, Utilisation of Vegetable Oil Refinery Byproducts, Nanopigments and Polymer Naocomposites, UV cure Multifunctional Monomers and Polymers, High Performance and Functional Coating Systems, Reaction Engineering and Nanocatalysis

**Recognized Research Guide for Ph.D. (Tech.) in Oils, Oleochemicals and Surfactants Tech., Ph. D. (Sci.) in Chemistry**

**Guided students:** Ph.D. : 12, Masters: 44

**TOTAL RESEARCH PUBLICATIONS :**

National: 18, International: 45

(H-Index 15, Citations : 544,

Patents (granted): 2





**Dr. PINTU K. KUNDU**  
B.Sc. (Science), M.Sc. (Science), Ph.D. (Science)  
UGC Assistant Professor

**SUBJECTS TAUGHT:**

Supramolecular Chemistry of Nanomaterials; Structural Elucidations by Advanced Spectroscopy; Chemistry of Oils and Fatty Acids; Technology of Perfumery Chemicals; Organic Reactions; Principles of Environmental Science.

**RESEARCH INTERESTS:**

Azobenzene- and spiropyran-based functional molecules, materials and gels: Organic molecular switches; Organic photochromism and acidochromism; Photoswitchable catalysis; Synthetic organic chemistry; Nano-structured materials; Dynamic materials, etc.

**Recognized Research Guide for:** Ph.D. (Science, Chemistry) in Oils, Oleochemicals and Surfactants Technology

**Guided students:** Ph. D: 2 (ongoing),  
Masters: 1, B. Tech: 2 (ongoing)

**Total Research Publications:**

International: 16, H-Index: 10; Citations: 514

Research Projects (Govt. and Private Industry Sponsored) and Awards:  
Early Career Research Award (ECRA) by Science and Engineering Research Board (SERB) (status - ongoing)

Personal Website: <https://sites.google.com/site/kundupintu09122014/home>

**Dr. CHANDU S. MADANKAR**

M. Tech, Ph.D.

**J.G. Kane Assistant Professor in Oils,  
Oleochemicals and Surfactants Technology**

**SUBJECTS TAUGHT:**

Chemistry and Technology of Castor and Nonconventional oils; Cosmetics Science II; Technology of Oleochemicals; Chemistry of Oils and Lipids; Essential Oils Natural products and their Applications; Chemistry of oils, lipids, essential oils and their applications; Cosmetics Science, Microbiology and biochemistry lab I; Microbiology and biochemistry lab II.

**RESEARCH INTERESTS:**

Biolubricants, Supercritical fluids

**Recognized Research Guide for:** Oils, Oleochemicals and Surfactants Technology

**Guided students:** Masters: 04

**Total Research Publications:**

National: 03, International: 05

Citations-154, H Index- 4

**NATIONAL AND INTERNATIONAL AWARDS :**

S.R. Bhatnagar Memorial Research award, 2013 by the Oil Technologist Association of India

Canadian Commonwealth Scholarship by the Canadian Bureau for International Education (CBIE) on behalf of Foreign Affairs and International Trade Canada (DFAIT) in Department of Chemical Engineering, University of Saskatchewan, 2011-12.





**Dr. PARAG R. NEMADE**

*B. Chem. Eng., M. S. and Ph.D. (University of Colorado)*

**UGC Assistant Professor,**

**Deputy Director, Infrastructure and Lab Development, ICT,  
Mumbai, Marathwada Campus, Jalna (on deputation)**

**SUBJECTS TAUGHT:**

Advanced Membrane Separations, Nanotechnology, Advanced Momentum Transfer, CE Lab, Introduction to Chemical Engineering, Materials and Energy Balance Calculations, Chemical Engineering Thermodynamics I

**RESEARCH INTERESTS:**

My group works on membrane separation processes, on development of new polymeric and graphene based materials for membranes, catalysts, and sensors applications. We also work on sustainability engineering, in areas such as sustainable sanitation, development of new applications for industrial wastes, etc.

**Recognized Research Guide for** Guided students: Ph.D. 4, Masters: 28

**Total Research Publications:**

International: 15, H-Index: 11; Citations: 608

**NATIONAL AND INTERNATIONAL AWARDS:**

3. DAE Young Scientist Award, 2013, Reinvent the Toilet Challenge 2013 (Bill and Melinda Gates Foundation)  
Chevening Rolls - Royce science, Innovation and Leadership Fellowship 2016, Newton-Bhabha Fellowship 2017.

**Dr. J. T. WAGHMARE**

*B.Sc. (Tech), M.Sc.(Tech), Ph. D.*

**Associate Professor of Oils, Fats, and Waxes Technology**

**SUBJECTS TAUGHT :**

Analysis of oleochemicals and surfactants, Analysis of oils, fats and waxes, Technology of edible fat production, Evaluation and testing of soaps and detergents, Analysis of raw materials of Oils, Science and Technology of essential Oils, Advances in Technology of Oils and Fats Production, Nutraceuticals.

**RESEARCH INTERESTS :**

Nutraceuticals, oxidation studies, structural lipids, designer lipids. application of surfactant, Cosmetics, perfume, flavor and fragrances, enzymology.

**Recognized Research guide for** Ph.D. (Tech.) in Oils, Oleochemicals and Surfactants Technology

Guided students: Ph.D 4 (completed) 2 (ongoing), Masters: 30

**TOTAL RESEARCH PUBLICATIONS-**

National: 05, International: 55





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# Department of **PHARMACEUTICAL SCIENCES AND TECHNOLOGY**



**PROF. SHREERANG V. JOSHI**

*B.Sc., B.Sc. (Tech.), Ph.D., D.I.M.*

**Professor of Pharmaceutical Chemistry**

**Head of the Department**



**PROF. SHREERANG V. JOSHI**  
*B.Sc., B.Sc. (Tech.), Ph.D., D.I.M.*  
**Professor of Pharmaceutical Chemistry**  
**Head of the Department**

**SUBJECTS TAUGHT:**

Pharmaceutical Organic Chemistry, Spectroscopy, Chemistry of Natural Products, Retrosynthesis, Catalysis and Catalytic processes

**RESEARCH INTEREST:**

Synthesis of Natural Products of Biological Importance, Process Development of Drugs, New Methodologies in Organic Synthesis, Synthesis of Drug-Polymers Conjugates  
Guided Students: Masters: 04,  
Recognized Research Guide for: M.Tech., M. Pharma, Ph.D (Sci.), Ph.D (Tech).

**Total Research Publications:**

International : 06

Patents: 31

H-Index : 4 Citations: 42

**PROF. P. D. AMIN**

*B. Pharm. (Mumbai, 1982), M. Pharm. (Mumbai, 1984), Ph.D. (Tech.) (Mumbai, 1988)*

**Professor of Pharmacy**

**Dean Vice President Technological Association & Dean Student Affair**

**SUBJECTS TAUGHT :**

Pharmaceutics, Pharmaceutical Technology, Dispensing Pharmacy, Hospital Pharmacy.

**RESEARCH INTERESTS :**

Exploration of Hot Melt Extrusion Technology in Innovative Drug Delivery system, Development and evaluation of Fixed Dose Combinations, Improvisation Techniques for Manufacture and Evaluation of Solid Dosage Forms, Release modification designs for drug delivery system Design and Fabrication of Pharma machinery (Rand D Models), Development of Added Functionality Excipients, ophthalmic drug delivery systems, modification in excipients, exploring the use of excipients.

Recognized Research guide for Ph.D.(Tech) in Pharmaceutics, Pharmaceutical Technology, Bioprocess Technology

**Recognized Research Guide for**

Guided students: Ph.D. 27; Masters: 64;

Patents : Granted - 4

**Total Research Publications:**

National: 5, International: 51

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow of Maharashtra Academy of Sciences

H-Index :13, Citations : 502.





**PROF. GANESH U CHATURBUJH**  
*M. Pharm. Sc., Ph.D. (Pharmaceutical Chemistry)*  
**Professor of Pharmacy**

**SUBJECTS TAUGHT:**

Pharmaceutical Analysis

**RESEARCH INTERESTS:**

Design, Synthesis and evaluation of the new chemical entities as Anti-inflammatory, Anti-diabetic and anti-cancer agent through rational drug design. Development of various bronsted and Lewis solid acid catalyst for chemical reactions. Development of synthetic route for the API, Agrochemicals and fine chemicals and intermediates thereof. Synthesis and spectral characterization of impurities of the API, Agrochemicals and fine chemicals.

**Recognized Research Guide for** M. Pharm., M. Tech. (Pharma), M. Tech. (Bioprocess Technology, Ph.D. (Pharmaceutical Chemistry) Ph.D. (Sci.)

Guided students: Ph.D. : 02, Masters: 07

**TOTAL RESEARCH PUBLICATIONS-**

International: 21, Citations : 404, H-Index: 13.

**NATIONAL AND INTERNATIONAL AWARDS:**

Awarded with UGC Indo-Us Raman Post-Doctoral Fellowship to visit Northeastern University, Boston, MA, USA for 2013-2014.

**Dr. HEMCHANDRA KESHAV CHAUDHARI**  
*M. Pharm. (Medicinal Chemistry), Ph. D. (Tech.) (Pharmaceutical Chemistry)*  
**Assistant Professor in Pharmacy**

**SUBJECTS TAUGHT:**

Pharmaceutical Chemistry, Medicinal Chemistry

**RESEARCH INTERESTS:**

Design of bioactive novel molecules using Computer Aided Drug Design. Synthesis of designed novel molecules by conventional or novel routes and evaluation of synthesized molecules.

**Recognized Research Guide for:** Pharmaceutical Chemistry

Guided students: Ph.D. : 01, Masters: 03

**TOTAL RESEARCH PUBLICATIONS-**

International: 07

Citations : 74, H-Index- 4





**PROF. MARIAM S. DEGANI**  
*B.Pharm, M.Pharm, Ph.D. (Tech)*  
**Professor of Pharmaceutical Chemistry**

**SUBJECTS TAUGHT:**

**RESEARCH INTERESTS:**

Drug design including ligand, structure and fragment based drug design. Synthesis of focused libraries of potential bioactive molecules for infectious and Alzheimer's diseases, based on rational drug design, using modern techniques including parallel synthesis and microwave assisted synthesis. Exploration of natural products as therapeutic leads. Fluorine chemistry, process development of drug and drug intermediates, green chemistry using ionic liquids and newer catalytic system development.

**Recognized Research Guide for Ph.D. (Tech), Ph.D. (Science)**

Guided students: Ph.D. : 17, Masters: 47

**TOTAL RESEARCH PUBLICATIONS-**

National: 1, International: 71

H-Index: 16; Citations: 839;

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow of Maharashtra Academy of Sciences, Best Teacher Award 2013, 2015.

**PROF. PADMA V. DEVARAJAN**  
*Ph. D (Tech) (Pharmaceutics)*

**Professor of Pharmacy and TEQIP Coordinator,  
Coordinator : M.Tech Pharmaceutical  
Biotechnology**

**SUBJECTS TAUGHT:**

Pharmaceutics, Technology of Solid Dosage Forms, Technology of Sterile Dosage Forms, Drug Delivery Systems, and Targeted Drug Delivery Systems (DDS).

**RESEARCH INTERESTS:**

Nano drug delivery systems(DDS) : Veterinary Drug Delivery Systems (DDS), Nano drug delivery systems (DDS), Targeted delivery in cancer and infectious diseases (tuberculosis, malaria, veterinary infections), New targeting ligands; Engineering nanoparticle shape, Innovative manufacturing approaches for nano system–bypassing scale up challenges, Transmucosal DDS: Nasal and Sublingual DDS for non-invasive delivery of peptide/protein/biotech molecules; Controlled release and Bio-enhanced DDS: NDA and ANDA.

Recognized Research Guide for M.Tech Pharmaceutical Biotechnology, Ph.D

Guided students: Ph.D.: 41, Masters: 69

**Total Research Publications :**

National: 5, International: 72

Citations : 1335, H-Index- 20

**NATIONAL AND INTERNATIONAL AWARDS:**

- Awarded IPA ACG INNOVATIVE SOLID DOSAGE FORM Award 2017 at 4<sup>th</sup> IPA ACG – SciTech Innovation Awards for “N’hance-SDF Bioenhanced Solid deispersion film based technology” by Indian Pharmaceutical Association at Chandigarh on 23<sup>rd</sup> Dec 2017.
- Awarded BENGALURUNANO INDIA INNOVATION AWARD 2017 for BU’ANTRAP In situ solid lipid nanoparticles for veterinary infection at the 9th Bengaluru India Nano, organized by Karnataka Science and Technology Promotion Society



(KSTePS), DST-Nano Mission in association with Jawaharlal Nehru Centre for Advanced Scientific Research Centre (JNCASR) Bangalore, on 8th December 2017, at The Lalit Ashok, Bangalore, India.

- Won the EUDRAGIT AWARD 2015 for the research publication under the category of “best paper” title “Controlled release floating multiparticulates of metoprolol succinate by hot melt extrusion” published in International Journal of Pharmaceutics 2015;491(1):345-51 from Evonik India Pvt. Ltd. 21<sup>st</sup> September,2016.
- PROF. N. R. KAMATH BOOK AWARD AS EDITOR of Book titled “Targeted Drug Delivery Concepts and Design” Edited by Padma V. Devarajan, Sanyog Jain, Published by Springer Publication on 5th April 2016 ICT Annual Day, at Institute of Chemical Technology, Mumbai.
- PROFC.J. SHISHOO AWARD for Research in Pharmaceutical Sciences, conferred by the Association of Pharmaceutical Teachers of India(APTI), 2013.



**Dr. PRAJAKTA DANDEKAR JAIN**

B. Pharm. (Mumbai, 2003), M. Tech. (Mumbai, 2006), Ph.D. (Tech.) (Mumbai, 2009)

**UGC FRP Assistant Professor of Engineering Sciences**

**SUBJECTS TAUGHT:**

Pharmaceutical Biotechnology

**RESEARCH INTERESTS:**

Development of 2 D and 3 D cellular models for evaluating drugs and delivery systems, Development of biopolymer scaffolds for tissue engineering, Microbioreactors for development of artificial organs, development of polymer and metal nanoparticles for application in biomedical and allied areas

**Recognized Research Guide for Ph.D. (Tech.) in Bioprocess**

Technology and Green Technology, M.Tech in Bioprocess Technology, Green Technology, Pharmaceutical Biotechnology

**Guided Students:** Ph.D. 05, Masters: 10

**Total Research Publications:**

National: 01, International: 36

Citations: 534, H-Index: 13

**NATIONAL AND INTERNATIONAL AWARDS :**

M.V. Deshpande Young Scientist Award at the 11th Asia Pacific Chitin and Chitosan Symposium, 2016; N. R. Kamath Book Award for book entitled 'Nanoparticulate Drug Delivery: Perspectives on the Transition from Laboratory to Market' (Woodhead Publishing Series in Biomedicine), Woodhead Publishing, 2014

**PROF. ARCHANA R. JUVEKAR**

*Ph.D. (Tech)*

**Professor of Pharmacology and Physiology**

**SUBJECTS TAUGHT:**

Topic in pharmacology, Models for drug Delivery System, Pharmacology Toxicology and Therapeutics, Pharmacology, Clinical Pharmacy and Drug Interaction

**RESEARCH INTERESTS:**

Drug discovery and development from natural products, Elucidation of Pharmacological Potential of New Chemical Entities (NCEs) in Disease Models for Efficacy Studies, Safety Pharmacological Studies of NCEs, Regulatory Toxicity, Evaluation of Pharmacological Interventions Targeting Pathophysiological Cascades (Oxidative stress, ER stress, Inflammation, apoptosis) involved in depression, anxiety, Diabetes, Diabetic Complications, Cognitive impairment.

**Recognized Research Guide for**

Guided students: Ph.D. 21, Masters: 63

**Total Research Publications:**

National: 47, International: 64

H-Index : 19

No. of Citations : 1348



**NATIONAL AND INTERNATIONAL AWARDS:**

Received best Research Paper sponsored by the Al-Ameen College of Pharmacy Award for Best Paper published in IJPER 2011



### PROF. K. S. LADDHA

B. Pharm. (Mumbai, 1982), M. Pharm. (Mumbai, 1985), Ph.D. (Tech.) (Mumbai, 1994)

Professor of Pharmacognosy

#### SUBJECTS TAUGHT :

Pharmacognosy, Phytochemistry and medicinal Natural Product

#### RESEARCH INTERESTS :

Extraction, isolation and characterization of phytoconstituents, Development of large scale extraction technologies, Standardization of herbal drugs and formulations, Development of herbal drug formulations, Chemical Modification of phytoconstituents.

**Recognized Research guide for Ph.D. (Tech) in**  
Pharmacognosy, Pharmaceutical Technology,  
Bioprocess Technology, Ph.D (Sci) Chemistry  
Guided students: Ph.D. 17, Masters: 67

Patents : 1

#### TOTAL RESEARCH PUBLICATIONS-

National: 65, International: 31

Citations : 699, H-index : 14

### PROF. VANDANA. B. PATRAVALE

B. Pharm. Sci. (Mumbai, 1985), M. Pharm. Sci. (Mumbai, 1987), Ph. D. (Tech.) (Mumbai, 1992)

Professor of Pharmaceutics



#### SUBJECTS TAUGHT:

Validation and Regulatory Requirements, Nanoscience and Technology, Pharmaceutics III, Advanced Pharmaceutics, Targeted Drug Delivery, Solid dosage forms Laboratory Cosmeticology Lab, Pharmaceutics Lab I, Pharmaceutics Lab II, Pharmaceutical Formulation Technology Lab I, Pharmaceutical Technology Laboratory, Advanced Pharmaceutics Laboratory.

#### RESEARCH INTERESTS:

Novel nanocarriers for drug and gene delivery in pertinent areas of national relevance (Cancer, neurodegenerative disorders, infectious/parasitic diseases), protein and peptide delivery, vaccines and adjuvants, Tissue engineering and scaffolds, nanodiagnostics, medical devices (stents/balloons/IUDs), novel polymer and lipid conjugates, cosmeceuticals.

**Recognized Research Guide for Ph.D. (Tech.), Ph.D. (Sci.)**

Guided students: Ph.D.: 21, Masters: 56

#### Total Research Publications:

National: 11, International: 72

H-Index: 37; Citations: 5037

Patents (granted in last 5 years): 6

#### NATIONAL AND INTERNATIONAL AWARDS: 6

National and International Awards (last 5 years): UGC-BSR Mid-Career Award, 2018; Gandhiyan Young Technological Innovation (GYTI) award 2018 to two teams, 2018; OPPI Woman Scientist Award – 2015 by Organization of Pharmaceutical Producers of India,

2015; Vividhlaxi Audyogik Samshodhan Vikas Kendra (VASVIK) Apex Committee's Smt. Chandaben Mohanbai Patel Industrial Research Award for Women Scientists, 2015; Convener, Association of Pharmaceutical Teachers of India (APTI), Women forum, 2014; Dr. P. D. Patil Best Pharmaceutical Scientist of the year Award, 2014; Prof. N. R. Kamath Book Author's award, Institute of Chemical Technology, 2014; Veneto Nanotech Prize (Winner of the second edition of the Cadini Prize), NanotechItaly, Italy, 2013; Grant Awardee – 'Nanovaccine for Brucellosis using Green Technology'; Grand Challenges Explorations Grants Round 11, Bill and Melinda Gates Foundation, 2013.



**PROF. SADHANA SATHAYE**

*Ph.D (Tech)*

**Professor of Pharmacy**

**SUBJECTS TAUGHT:**

Anatomy, physiology and pathophysiology-I,  
Anatomy, physiology and pathophysiology-II, Anatomy, physiology and pathophysiology laboratory-I, Pharmacology-I

**RESEARCH INTERESTS:**

Neurological/neurodegenerative disorders like epilepsy, Parkinson's disease and Alzheimer's disease, Diabetes mellitus and diabetic complications, Isolation of phytoconstituents from herbal extracts and their investigation as a promising therapy for disorders mentioned above.

**Recognized Research Guide for:** Ph.D. (Tech)

Guided students: Ph.D.: 13, Masters: 40

**TOTAL RESEARCH PUBLICATIONS-**

National: 12, International: 55

H-Index: 13; Citations: 767

**NATIONAL AND INTERNATIONAL AWARDS:**

Fellow, Maharashtra Academy of Sciences;



**PROF. V. N. TELVEKAR**

*B. Sc. (Mumbai, 1992), B. Sc. (Tech.) (Mumbai, 1995), M. Sc. (Tech.) (Mumbai, 1997), Ph. D. (Tech.) (Mumbai, 2003)*

**Professor of Pharmaceutical Chemistry**

**SUBJECTS TAUGHT :**

Medicinal Chemistry, Pharmaceutical Chemistry, Pharmaceutical Engineering, Process Technology of Drugs and Intermediates

**RESEARCH INTERESTS :**

Invention of new reactions and reaction, Design and synthesis of novel bioactive molecules using Computer aided drug design, total sysnthesis of bioactive natural products, process development.

**Recognized Research guide for** Ph.D. (Tech) in Pharmaceutical Technology, Pharmaceutical Chemistry, Bioprocess Technology, Ph.D (Sci) in Chemistry

Guided Students: Ph.D. 10, Masters: 40

**TOTAL RESEARCH PUBLICATIONS-**

International: 59

Citations : 944, H-index : 17

**PROF. P. R. VAVIA**

*B. Pharm., M.Pharm., Ph.D. (Tech), FIPA, FMASc*

**Dean (Academic Programmes) and**

**Professor of Pharmaceutics**

**SUBJECTS TAUGHT:**

Pharmaceutics, Drug Delivery systems, Advanced Pharmaceutics, Biopharmaceutics and Pharmacokinetics

**RESEARCH INTERESTS:**

Cyclodextrin based drug delivery systems, Nanosponge based drug delivery system, Transdermal drug delivery system, Protein and Peptide drug delivery system, Lipid based colloidal formulations, Polymer synthesis for drug delivery, Modified release films, Melt extrusion technology, Oral liquid dosage forms, Oral modified release systems, Techniques in solubilization, Soft gelatin capsules, Bio-conjugates for active targeting, gene delivery.

**Recognized Research Guide for Pharmaceutics**

Guided students: Ph.D. 43, Masters: 56

**Total Research Publications (Scopus):**

National: 21, International: 116,

H-Index : 28, Citations: 2806

**Patents:** International: 3 [PCT (Granted: 1; Applied: 2)]

National: Granted: 8, Applied: 30



**NATIONAL AND INTERNATIONAL AWARDS:**

Best Teacher's Award 2018, Global RESOMER Award 2017 for developing the "Novel bilayer dissolving microneedle arrays with concentrated PLGA microparticle to targeted intradermal delivery: Proof of concept", Best Teacher's Award 2016, VASVIK Award in the category of Biological Sciences and Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015

**PROF. PRASHANT S. KHARKAR**

*B. Pharm. (Pune, 1998), M. Pharm. Sci. (Pharmaceutical Chemistry) (Mumbai, 2000), Ph. D. (Tech.) (Pharmaceutical Chemistry) (Mumbai, 2004)*

**Professor of Medicinal Chemistry**

**Department of Pharmaceutical Sciences and Technology**

**Subjects Taught:**

Medicinal Chemistry, Pharmaceutical Organic Chemistry, Pharmaceutical Analysis and Green Chemistry, Biopharmaceutics and Pharmacokinetics

**Research Interests:**

Design and Development of New Chemical Entities (NCEs) as Anticancer Agents, Cancer Stem Cell (CSC) Inhibitors; Computer-Aided Molecular Design; Synthesis of New Materials and their Biomedical Applications; Drug Repurposing

**Recognized Research guide for :** Ph. D. (Tech.) in Medicinal Chemistry, Pharmaceutical Chemistry, Biotechnology and Ph. D. (Sci.)

**Guided Students:** Ph. D.: 05; Masters: 30

**Total Research Publications:** International 60; National 02 H-Index: 15, Citations: 846

**Patents (Last five years):**

International: 02 [PCT: Published: 02 (US: 01, EP: 01)]  
National: Applied: 06

**National and International Awards Received**

- Best Research Output of the Year 2017-18 given by SVKM's NMIMS (Deemed to be University), Mumbai (August 11, 2018)
- DST Foreign Travel Grant for presenting research work at



Gordon Research Conference on Computer Aided Drug Design, West Dover, USA. (July 2017)

- Best Poster Award at International Conference on Pure and Applied Chemistry (ICPAC)-2016, Mauritius (July 2016)
- Indian National Science Academy (INSA) deputation under International Collaboration and Exchange Programme to University of Mauritius, Mauritius (2016)
- Best e-Presentation Award at the Virtual Conference on Computational Chemistry (VCCC)-2014 organized by University of Mauritius, Mauritius (August 1-31, 2014)
- Best Poster Award at International Conference on Pure and Applied Chemistry (ICPAC)-2014, Mauritius (June 2014)
- DST Foreign Travel Grant for presenting research work at Gordon Research Conference on Bioorganic Chemistry, Andover, USA. (June 2013)





# Department of **POLYMER AND SURFACE ENGINEERING**



**PROF. SHASHANK T. MHASKE**

*Ph.D. (Tech.) (Polymer Technology)*

Professor of Polymer Technology

**Head of the Department**



**PROF. SHASHANK T. MHASKE**  
*Ph.D. (Tech) (Polymer Technology)*  
**Professor of Polymer Technology**  
**Head of the Department**

**SUBJECTS TAUGHT:**

Compounding and Polymer Processing, Evaluation and characterization of polymers, , Paint Processing, Polymer Chemistry, Polymer & Processing Technology – III, Analysis & Pigment Synthesis, Synthesis & Characterization of raw materials.

**RESEARCH INTERESTS:**

Novel approaches for synthesis of Nano particles, Synthesis of resins from renewable resources for coating and adhesive applications, Recycling and recovery of polymers, Cellulose based nanoparticles and whiskers, Bio Nanocomposites, Conductive coatings, anticorrosive coatings, Rheology of polymers, Sol gel techniques, Development of Thermoplastic vulcanizates and elastomers.

**Recognized Research Guide for**

M.Tech/ Ph. D (Tech) in Polymer and Surface Engineering and Green Technology, M.Tech/Ph. D (Science) in Chemistry  
Guided Students : Ph.D. (Tech.) – 11 Ongoing - 12,  
Ph.D. (Sc) -02 Ongoing - 2, M. Tech. - 64 Ongoing - 15

**Total Research Publications:**

International: 127, National: 28, Total Citations: 1814, h-index: 20  
Patents: 04

**NATIONAL AND INTERNATIONAL AWARDS**

- Fellow Maharashtra Academy of Sciences. Govt. of Maharashtra.
- Award for Technology Innovation in “Green Polymeric Materials and Products” By Dept. of Chemicals and petrochemicals, Ministry of Chemicals and fertilizers. Govt. of India

**PROF. R. N. JAGTAP**

*B.Sc., B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. Tech.*

**Professor of Paint Technology**

**SUBJECTS TAUGHT:**

Advanced Surface Coating Technology II, High Performance Coatings, speciality plastics, High performance Coating, Paint Processing and Characterization, Technology of Printing Inks.

**RESEARCH INTERESTS:**

Living Radical Polymerization for Tailor-made Polymers i.e. ATRP, RAFT, NMP Nanomaterial's and Nano composite, Recycling of polymers and e-waste, Antimicrobial Polymer and Paints, Heat reflective coatings, Corrosion, Flame Retardant Coating , U.V Radiation Polymerization, Sustainable Polymers and Coatings, Microencapsulation, Biodegradable Polyolefins, Green Catalyst, Technical Textiles, Autodeposition coating.

**Recognized Research Guide for:**

M.Tech. , Ph.D, for Surface Coating Technology, Polymer Engineering and Technology, Green Technology, Chemistry  
Guided students: Ph.D.: 16, Masters: 70

Ongoing students: Ph.D. : 10 , Masters: 19

**TOTAL RESEARCH PUBLICATIONS-**

International: 45, National: 28

Total Citations: 412 h-index: 11

**Patents:** 01 (granted)





**PROF. PRAKASH A. MAHANWAR**  
B.Sc., B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.)  
**Professor of Polymer Technology**

**SUBJECTS TAUGHT:**

Structure Property Relationship, High Polymer Chemistry, Polymer Rheology, Polymer Processing and Technology-1, Polymer Blends and Alloys

**RESEARCH INTERESTS:**

Polymer Blend, Bio-Polymers, Polymer Composite, green additives, synthesis of Nano-materials and fibres, conducting polymers.

**Recognized Research Guide for-**

Ph. D (Tech) Polymer and Surface Engineering.

Ph. D (Science) in Chemistry

Guided students: Ph.D. : 17, Masters: 72

Ongoing students: Ph.D. : 10, Masters: 12

**TOTAL RESEARCH PUBLICATIONS-**

National: 5, International: 79

Citations : 1517; H-index : 21

Patents - 07

**NATIONAL AND INTERNATIONAL AWARDS**

- Fellow of Maharashtra Academy of Science
- Member, Technical Advisory Committee Ministry of Science and Technology, Government of India, New Delhi

**Dr. A. R. RAO**

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

**Assistant Professor of Polymer Technology**

**SUBJECT TAUGHT :**

Technology of Thermoplastics Identification and Analysis of Polymer, Polymer Processing-II, Chemistry and Technology of Plastics, Synthesis and Characterization of Polymers

**RESEARCH INTERESTS:**

Polymer Blends and Alloys, Polymer Nanocomposites, Controlled radical Polymerization, Recycling of Polymers Biodegradable Polymers

**TOTAL RESEARCH PUBLICATIONS-**

National: 02, International: 01

Research Students: M. Tech – 13 (ongoing)

Paper/poster Presented-10





**Dr. ANAGHA SHAMSUNDAR SABNIS**

B.Sc. (Tech.), M.Sc. (Tech.), Ph.D. (Tech.)

**Associate Professor in Technology of Plastics and Paints**

**SUBJECTS TAUGHT:**

Analysis and characterization of raw materials and polymers I, Pigments and additives for polymers, Paint Technology I, Processing of Paints I, Insulating and Intumescent coatings, Processing of Paints II, Analysis and Testing of Paints, Processing of Paints IV, Advance polymer science I, Additives for coatings

**RESEARCH INTERESTS:**

Coatings based on renewable resources materials, Recycling of polymer waste and coatings thereof, Advancement in anticorrosive coatings Flame retardant coatings, Non-isocyanate polyurethane coatings etc.

**Recognized Research Guide for-**

Guided students: Ph.D. : 04, Masters: 30

Ongoing students: Ph.D. : 02, Masters: 12

**TOTAL RESEARCH PUBLICATIONS-**

International: 48

Citations : 777 ; H-index : 15

Patents - 02

**NATIONAL AND INTERNATIONAL AWARDS**

- CRISP fellowship by Cherening (UK Govt.) and Rolls Royce.
- Super Achiever Award for Excellence in research in Polymers and Paint Technology, (WISE)(UNESCO)

**DR. A. P. MORE**

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

**Assistant Professor in Plastics and Paints**

**SUBJECTS TAUGHT:**

Identification of Resins and Polymers Lab, Advanced Characterization of Polymers and Composite, Synthesis, processing and characterization of colorants & Analysis and Testing of Paints.

**RESEARCH INTERESTS:**

Nanoparticles, Anticorrosive coating, Polymer recycling, Polymer composites

Recognized Research Guide for  
M. Tech/ Ph. D (Tech) in Surface Coating Technology & Polymer Engineering and Technology

Total Research Publications-

National: 0 , International: 15

National and International Awards

DST Inspire Fellowship Govt. of India.







# Department of **CHEMISTRY**



**PROF. RADHA V. JAYARAM**

*M.Sc., Ph.D*

Professor of Physical Chemistry

**Head of the Department**



**PROF. RADHA V. JAYARAM**

*M.Sc., Ph.D.*

**Professor of Physical Chemistry**

**Head of the Department**

**SUBJECTS TAUGHT:**

Chemical kinetics and phase equilibria, quantum chemistry, catalysis, surface and interfacial chemistry, solid state chemistry.

**RESEARCH INTERESTS:**

Heterogeneous catalysis, green Chemistry, multi-component reactions, structurally ordered materials, functional polymers, and adsorption techniques for removal of water pollutants, recovery of spent metals, enzyme catalysis.

**Recognized Research Guide for :** Chemistry and Green Technology

**Guided students:** Ph.D.: - 23, Masters: 42

**Total Research Publications :**

International: 104

H-Index: 30; Citations: 2717

Patent granted: 01

**NATIONAL AND INTERNATIONAL AWARDS:**

Elected Fellow of Maharashtra Academy of Sciences (F.M.A.Sc.); Member, Scientific committee, 48th International Chemistry Olympiad, July 2016 (Tbilisi, Georgia), CMP Endowment Best Teacher Award 2014-15, Best Women teacher award by the Association of Chemistry Teachers India 2015-16.

**Dr. VIJAY KUMAR A.**

*Ph.D.*

**Assistant Professor in Organic Chemistry**

**Warden Boys Hostel**

**SUBJECTS TAUGHT:**

Biochemistry (MSc), Organic Synthesis (MSc), Organic Chemistry Laboratory (MSc), Organic Chemistry (F.Y. B.Tech.), Organic Chemistry Laboratory II, (B.Chem Eng and B.Tech), Organic Chemistry (M.Sc.)

**RESEARCH INTERESTS:**

Biomimetic Synthesis, Aerobic oxidation, Surrogate Green Reagents for Organic Synthesis, Drugs and Natural products Synthesis, Catalysis for Total Synthesis, Carbon /Carbon supported catalysts for Organic Transformations, Biogenesis of Natural products.

**Recognized Research Guide for:**

Ph.D. 03 + 01 (collaborative)

**Total Research Publications :**

International: 34

Citations: 1533; H-Index: 20





**PROF. BHALCHANDRA M. BHANAGE**

*M.Sc, Ph.D.*

**Professor of Industrial and Engineering Chemistry**

**Dean (Infrastructure and Campus Development)**

**SUBJECTS TAUGHT:**

Organic Chemistry, Organometallic Chemistry, Catalysis

**RESEARCH INTERESTS:**

Catalysis, Ionic Liquids, Nanomaterials, Enzymatic Catalysis, Coupling Reactions, Amination, Reactions using CO, CO<sub>2</sub> and hydrogen.

**Recognized Research Guide for:** Chemistry, Green Chemistry and Technology, Biotech Sciences, NanoScience and Nanotechnology.

Guided students: Ph.D. 44, Masters: M.Sc. 23; M.Tech. 19

**Total Research Publications:**

National: 02, International: 421 + 22 Book chapters

Citations: 14200 H-Index : 56

**Patents :** Granted: 24; Filed: 12

**NATIONAL AND INTERNATIONAL AWARDS:**

Elected Fellow of Maharashtra Academy of Sciences (F.M.A.Sc.); Fellow of the Royal Society of Chemistry, UK (FRSC); RSC-PTG best paper award by Royal Society of Chemistry 2011; Bronze Medal for Contributions in Research by Chemical Research Society of India, 2012; ISCMA Outstanding Professor Award by Indian Specialty Chemical Manufacturers Association for excellence in academic field for the year 2012 and in 2015; Prof. M.M. Sharma Science and Technology Award for contributions in research by Marathi Vidyan Parishad, 2014.

**Dr. SANGHAMITRA CHATTERJEE**

*M.Sc., Ph.D.*

**DST INSPIRE Faculty**

**SUBJECTS TAUGHT:**

Advanced Spectroscopy, Pericyclic Reactions, Analytical Chemistry, Physical/Analytical Chemistry Laboratory, Inorganic Chemistry Laboratory, Analytical Chemistry Laboratory, Organic Chemistry Laboratory and Organic Chemistry.

**RESEARCH INTERESTS:**

Organic Electrochemistry, Biomedical applications of nanomaterial modified sensors, Materials science and Nanotechnology, Electrochemical sensing techniques for clinical diagnostics and environmental monitoring, Development of sensors for biomolecules, drugs and doping agents, Electrochemical catalysis, Biosensors and arrays.

**Recognized Research Guide for Ph.D. Chemistry**

**Guided students Masters:** 07

**TOTAL RESEARCH PUBLICATIONS :**

National: 01, International: 30

H-Index: 17; Citations: 2021

**NATIONAL AND INTERNATIONAL AWARDS:**

DST-Inspire Faculty Scheme Award, Piscopia Marie Curie Fellowship Programme for Postdoctoral Research, Post-Doctoral Fellowship for Women by University Grants Commission, Emerging Scientist Award in the 7th Annual Research and Innovation Week, Ontario, Canada, Post-Doctoral Fellowship from Natural Sciences and Engineering Research Council (NSERC) Discovery Grant.



**Dr. S. G. DAWANDE**

M. Sc., Ph. D.

**Assistant Professor of Organic Chemistry****SUBJECTS TAUGHT:**

Organic Chemistry (B. Pharm), Organic Chemistry (Chem. Eng.), Free Radicals and Photochemistry (M. Sc. Chem.), Organic Chemistry Laboratory (B. Pharm), Organic Chemistry Laboratory (Chem. Eng.), Organic Chemistry Laboratory (B. Tech.), Organic Chemistry Laboratory (M. Sc. Chemistry).

**RESEARCH INTERESTS:**

Mainly focused on Organic synthesis, Catalysis and Medicinal Chemistry through; Transition Metal Catalysis, Organocatalysis, Asymmetric Synthesis, Natural Product Synthesis, Green Chemistry

**Recognized Research Guide for:** Ph.D. Chemistry,

**Guided students:** Ph.D.: 0; Masters: 08

**Total Research Publications:**

International: 07

Citations: 111, H-Index: 4

**NATIONAL AND INTERNATIONAL AWARDS:**

DST-SERB Young Scientist Award

**Dr. ANANT R. KAPDI (MRSC, AVH FELLOW)**

M.Sc., M.Sc. By Research (University of York, U.K.),  
Ph.D. (University of York, U.K),  
Alexander von Humboldt Fellow

**UGC-FRP Assistant Professor**

**Former Deputy Director, ICT-Mumbai IndianOil Campus, Bhubaneswar**

**SUBJECTS TAUGHT:**

Organic Chemistry Natural Product Heterocyclic Chemistry  
Organic Chemistry Practicals and Analytical Chemistry

**RESEARCH INTERESTS:**

Palladium catalysis, Nucleoside modification, Heteroarene modification, Commercial scale process optimization, Drugs synthesis, New product development

**Recognized Research Guide for** Ph.D. Organic Chemistry

Guided students: Ph.D. 7, Masters: 28

**TOTAL RESEARCH PUBLICATIONS-**

National: 2, International: 81 + 10 book chapters

H-Index: 27, Citations: 5200

**NATIONAL AWARDS :**

Alexander von Humboldt Fellowship 2008, Alexander von Humboldt Return Fellowship 2013, DAAD Fellowship for Scientists 2014, Young Associate of Maharashtra Academy of Sciences. Fellow Maharashtra Academy of Sciences 2016, Associate Editor of Royal Society of Chemistry Journal RSC Advances 2015-17. Prof. N. R. Kamath book award 2018, C. B. Murarka Best Assistant Professor award 2019

**Dr. P. M. MORE**

M.Sc., Ph.D.

**Assistant Professor of Analytical Chemistry****SUBJECTS TAUGHT:**

Analytical Chemistry, Analytical and Physical Chemistry Lab, Physical Pharmacy Lab., Instrumental methods Lab. Physical Chemistry Lab.

**RESEARCH INTERESTS:**

Heterogeneous Catalysis, Synthesis of various mixed metals based catalysts using different methods for selective oxidations and environmental application. Total oxidation of volatile organic compound using non-noble metal based catalyst. Development of non-noble metal based diesel exhaust oxidation catalyst.

**Guided students :** Ph.D.: - 0, Masters: 03,

**Total Research Publications :** National: 01, International: 12,

H-index : 05, Citation : 122, **Patents :** 01

**PROF. (Mrs.) JAYASHREE M. NAGARKAR**

M.Sc. Ph.D.

**Professor of Physico-Inorganic Chemistry****SUBJECTS TAUGHT:**

Physical Chemistry, Analytical chemistry

**RESEARCH INTERESTS:**

Surface and Interfacial Chemistry, Electrochemistry, Homogeneous and Heterogeneous Catalysis, ultrasound assisted organic reactions and catalysis, C-C, C-N coupling reaction for organic synthesis, Preparation and Application of DES for organic synthesis, , Synthesis of Nanomaterials. Exploration of Nanomaterials synthesized as catalysts for organic synthesis, Green chemistry, development of environmentally begin synthetic procedures for organic synthesis, Degradation of organic pollutants, Emulsifications of Vegetable oils.

**Recognized Research Guide for -** Ph.D. (Chemistry)

Guided students: Ph.D.- 12 (Completed), Masters: 20 (Completed)

**Total Research Publications-** National: 2, International: 61

H-Index : 18; Citations : 1027

**NATIONAL AND INTERNATIONAL AWARDS:**

- Received “Expert Featured Research Article Honorarium” of \$ 500 for an article entitled “Properties of Vegetal Oil Based creams in skin care” the article was published in Cosmetics and Toiletries;
- Fellow of Maharashtra academy of Sciences.

**Dr. SHRAEEDHA TIWARI**

Ph.D.

**Assistant Professor of Inorganic and Physical Chemistry****SUBJECTS TAUGHT:**

Physical Chemistry, Physical Pharmacy, Analytical Chemistry, Instrumental Analysis, Surface and Interfacial Chemistry

**RESEARCH INTERESTS:**

Kinetic and mechanistic investigation of organic reactions, interfacial reactions, “on water” chemistry, reactions in confined media, physical and chemical properties of ionic liquids, space- and time-resolved spectroscopic techniques, asymmetric amplification, transport phenomena in reactions

**Recognized Research Guide for** Ph.D. Science

Guided students: Ph.D. 2, Masters: 04

**Total Research Publications:** International: 17, Total citations: 267, H-Index: 7





# Department of **GENERAL ENGINEERING**



**PROF. DILIP D. SARODE**

*B.E. (Civil) , M.E. (Structural),  
Ph. D. (Tech.), P. G. D. (Const.  
Management), D.C.S.T.*

**Professor of Civil Engineering  
Head of the Department**

**PROF. DILIP D. SARODE**

B.E. (Civil) , M.E. (Structural), Ph.D. (Tech.)

P. G. D. (Const. Management), D.C.S.T.

Professor of Civil Engineering

**Head of the Department**

**SUBJECTS TAUGHT:**

Engineering Mechanics and Strength of Materials,  
Structural Mechanics and Process Equipment Design I,  
Advance strength of Materials.

**RESEARCH INTERESTS:**

Concrete Technology – Construction Chemicals - Risk Analysis and its mitigation. Recycling of wastes. Recycling of agricultural waste and improving soil fertility.

**Recognized Research guide for M.E. (Plastic),**

Ph. D. (Tech) in Civil Engineering and Plastic Engineering.

Guided students: Ph.D.: 01, Masters: 10

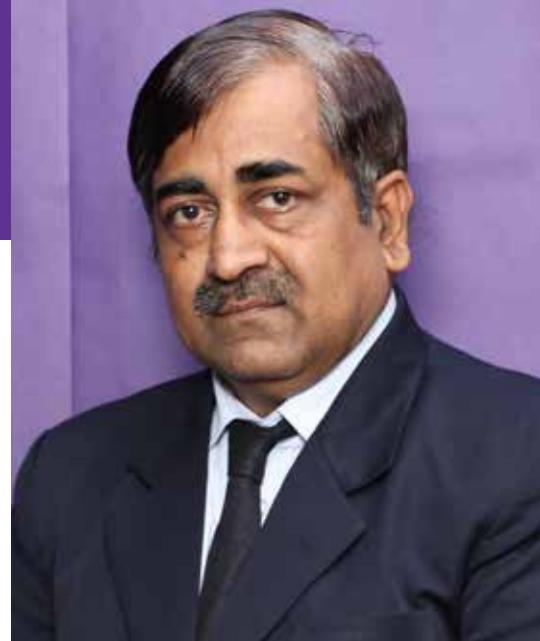
**Total Research Publications:**

National: 14, International: 10

H Index 4, i10 Index: 2, citations 201

**Patent Information:**

National: 01 (granted), International: 01 (applied)



**PROF . VIVEK R. GAVAL**

B.E(Production)(Mumbai,1987), M.E (Plastic Engg) (Mumbai,1991), Ph.D(Tech)( Mumbai,2012)

**Professor and Associate Dean (Academic Programme)**

**SUBJECTS TAUGHT:**

Energy Engineering, Equipment Design and Drawing, Engineering Graphics, Design and fabrication of moulds, Finite Element Analysis, Processing of plastics laboratory.

**RESEARCH INTERESTS:**

Particulate filled polymer composites, conversion of Metal parts into plastic using design softwares, Tribology, Moldflow analysis of injection moulded plastic parts.

**Recognized Research Guide for :** Ph.D. (Tech) in

Mechanical Engineering and Plastic Engineering.

Guided students: Ph.D.: 01, Masters: 25

**Total Research Publications:**

International: 09, H Index 1, i10 Index\_, citations 11

Patent information: National: 01 (applied)

**PROF. S. P. DESHMUKH**

*D.M.E. (Ratnagiri, 1983), B.E. (Prod.) (Mumbai, 1986),  
M.E. (Prod.) (Mumbai, 1992), Ph.D. (Mumbai 2009)*

**Professor - cum -Workshop Superintendent and  
Associate Dean of Infrastructure and Campus  
Development**

**SUBJECTS TAUGHT :**

Equipment Design and Drawing I, Engineering Graphics, CAD/CAM/CAE.

**RESEARCH INTERESTS :**

Polymeric Composites, Engineering Materials, Plastic Processing, Design of Molds, Analysis of Plastic component using CAD, CAE tools. Solar Hybrid Energy, Refrigeration Air Conditioning, Heat Transfer through microchannel.

**Recognized Research guide for Ph.D. (Tech.)**  
in Mechanical Engineering, Plastic Engineering,  
Electrical Engineering, Electronic Engineering  
Guided students: Ph.D.: 05, Masters: 17

Total Research Publications:  
National: 07, International: 32  
H Index 9, i10 Index 8, citations 229



**Shri. M. A. K. KERAWALLA**

*B.E. (Elect.) (Mumbai, 1981), M.E. (Elect.)  
(Mumbai, 1984)*

**Associate Professor of Electrical Engineering**

**SUBJECT TAUGHT :**

Electrical Engineering and Electronics

**RESEARCH INTEREST :**

Power Systems

**TOTAL RESEARCH PUBLICATIONS**

National: 6, International: 12



**Dr . PRERNA GOSWAMI**

*B.E. (Electrical), M.E. (Instrumentation and Control), Ph. D(Tech) (Electrical Engg.)(ICT Mumbai,2018)*

**Associate Professor in General Engineering  
(Electrical)**

**SUBJECTS TAUGHT:**

Electrical Engineering and Electronics

**RESEARCH INTERESTS:**

Sustainable Energy and MATLAB simulations

**Recognized Research guide for Ph.D. (Tech.) in Electrical Engineering, Electronics Engineering**

Total Research Publications:

National: 10, International: 17

H index 5, i10 index 1, citations 39



**Dr. R. S. N. SAHAI**

*B.E. (Mechanical Engg.), M.E. (Plastic Engg.), Ph.D (Tech.)(Mechanical Engg.) (ICT Mumbai,2018)*

**Associate Professor in Mechanical Engineering**

**SUBJECTS TAUGHT:**

Engineering Graphics I, II, Energy Engineering, Processing of Plastics, Principle of Plastic Machinery Design

**RESEARCH INTERESTS:**

Polymer Composites, Mould Design

**Recognized Research Guide for M.E (Plastic Engineering), Ph.D. (Plastic Engineering)**

Guided Students Masters: 09

**Total Research Publications :**

International: 08, H index 2, citations 19





$$H = \frac{P^2}{2m} + \frac{1}{2} m\omega^2 x^2 \quad \langle \varphi_n | a^\dagger | \varphi_n \rangle = \sqrt{n+1} \delta_{n,n+1} \quad \int_{-\infty}^{\infty} dt e^{-iEt/\hbar} \langle \varphi_n | \psi(t) \rangle = E \langle \varphi_n | \psi \rangle$$

$$H|\varphi\rangle = E|\varphi\rangle \quad \langle \varphi_n | X | \varphi_n \rangle = \sqrt{\frac{\hbar}{2m\omega}} [\sqrt{n+1} \delta_{n,n+1} + \sqrt{n} \delta_{n,n-1}] \quad E = \frac{1}{2} mc^2$$

$$\left[ -\frac{\hbar^2}{2m} \frac{d^2}{dx^2} + \frac{1}{2} m\omega^2 x^2 \right] \varphi(x) = E \varphi(x) \quad \langle \varphi_n | P | \varphi_n \rangle = i\sqrt{\frac{\hbar}{2m\omega}} [\sqrt{n+1} \delta_{n,n+1} - \sqrt{n} \delta_{n,n-1}]$$

$$\hat{X} = \sqrt{\frac{m\omega}{n}} X \quad , \quad \hat{P} = \frac{1}{\sqrt{m\hbar\omega}} P$$

$$[\hat{X}, \hat{P}] = i \quad H = \hbar\omega \hat{A}$$

$$\hat{H} = \frac{1}{2} (\hat{X}^2 + \hat{P}^2)$$

$$\hat{H}|\varphi_v\rangle = \epsilon_v |\varphi_v\rangle$$

$$a = \frac{1}{\sqrt{2}} (X_+ - i\hat{P})$$

$$a^\dagger = \frac{1}{\sqrt{2}} (X_- + i\hat{P})$$

$$a^\dagger a = \frac{1}{2} (X^2 - \hat{P}^2)$$

$$\hat{H} = a a^\dagger - \frac{1}{2}$$

$$\hat{H} = a a^\dagger - \frac{1}{2} \quad E = mc^2$$

$$a^\dagger |\varphi_n\rangle = \sqrt{n+1} |\varphi_{n+1}\rangle$$

$$a |\varphi_n\rangle = \sqrt{n} |\varphi_{n-1}\rangle$$

$$a |\varphi_n\rangle = \frac{1}{2} a a^\dagger |\varphi_{n-1}\rangle = \frac{1}{\sqrt{n}} (a^\dagger a + 1) |\varphi_{n-1}\rangle \\ = \sqrt{n} |\varphi_{n-1}\rangle$$

$$X |\varphi_n\rangle = \sqrt{\frac{\hbar}{m\omega}} \frac{1}{\sqrt{2}} (a^\dagger + a) |\varphi_n\rangle$$

$$= \sqrt{\frac{\hbar}{2m\omega}} [\sqrt{n+1} |\varphi_{n+1}\rangle + \sqrt{n} |\varphi_{n-1}\rangle]$$

$$D(\psi) = \sqrt{\int_{-\infty}^{\infty} dx (a^\dagger - a)^2 |\varphi_n\rangle}$$



$$\begin{bmatrix} 0 & \sqrt{1} & 0 & 0 & \dots & \dots \\ 0 & 0 & \sqrt{2} & 0 & \dots & \dots \\ 0 & 0 & 0 & \sqrt{3} & \dots & \dots \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & 0 & 0 & \ddots & \vdots \end{bmatrix}$$

$$(a^\dagger) = \begin{bmatrix} 0 & 0 & 0 & 0 & \dots & \dots \\ \sqrt{1} & 0 & 0 & 0 & \dots & \dots \\ 0 & \sqrt{2} & 0 & 0 & \dots & \dots \\ 0 & 0 & \sqrt{3} & 0 & \dots & \dots \\ 0 & 0 & 0 & 0 & \ddots & \vdots \\ 0 & 0 & 0 & 0 & \ddots & \vdots \end{bmatrix}$$

$$\varphi_0(x) = \langle x | \varphi_0 \rangle = \left( \frac{m\omega}{\pi\hbar} \right)^{1/4} e^{-\frac{i}{2} \frac{m\omega}{\hbar} x^2}$$

$$\varphi_n(x) = \left[ \frac{1}{\sqrt{n!}} \left( \frac{\hbar}{m\omega} \right)^{1/4} \left( \frac{m\omega}{\pi\hbar} \right)^{1/2} \frac{e^{i\sqrt{n+1}/2}}{k_0} \left( \frac{\hbar}{m\omega} \right)^{1/4} \right] \varphi_0(x)$$

$$\langle P^2 \rangle = -\frac{\hbar^2}{2m} \int_{-\infty}^{\infty} \varphi_n(x) \frac{d^2}{dx^2} \varphi_n(x)$$



$$i\hbar \frac{\partial}{\partial t} \psi(\vec{r}, t) = -\frac{\hbar^2}{2m} \Delta \psi(t) \\ \Delta = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2} + \frac{\partial^2}{\partial z^2}$$

$$\lambda_1 |\varphi_1\rangle + \lambda_2 |\varphi_2\rangle \Rightarrow \lambda_1^* \langle \varphi_1 | + \lambda_2^* \langle \varphi_2 |$$

$$\xi_{x_0}^{(\ell)}(x) \Leftrightarrow |\xi_{x_0}^{(\ell)}\rangle \quad E = \langle K \rangle$$

$$\varepsilon \neq 0 \Rightarrow |\xi_{x_0}^{(\ell)}\rangle \in \xi_x \quad \langle \xi_{x_0}^{(\ell)} | \psi \rangle = (\xi_{x_0}^{(\ell)}, \psi) = \int_{-\infty}^{\infty} dx \xi_{x_0}^{(\ell)} \psi(x)$$

$$g \angle \theta_0^2, \theta_0 = \frac{cE}{MgL}$$

$$\frac{d\theta}{dt} \left( \frac{g}{L} \right)^{1/2} \left( \theta_0^2 - \theta^2 \right)^{1/2}$$

$$\frac{d^2 r}{dt^2} = \frac{d^2 r}{d\phi^2} \cdot \left( \frac{g}{L} \right)^{1/2}$$

$$\left( \frac{d\theta}{dt} \right)^2 = \left( \frac{g}{L} \right)^{1/2} dt$$

$$\int_{\theta_0}^{\theta} \frac{d\theta}{(\theta_0^2 - \theta^2)^{1/2}} = \left( \frac{g}{L} \right)^{1/2} \int_0^t dt$$

$$\int_{\theta_0}^{\theta} \frac{d\theta}{(\theta_0^2 - \theta^2)^{1/2}} = \left[ A \arcsin \left( \frac{\theta}{\theta_0} \right) \right]_{\theta_0}^{\theta} = A \theta \sin \left( \frac{\theta}{\theta_0} \right) - A \theta_0 \sin(0)$$

$$= \left( \frac{g}{L} \right)^{1/2} t$$



DR. AJIT KUMAR

B.Sc., M.Sc., Ph.D.

Associate Professor of Mathematics

Head of the Department

$$f_0 = \frac{\omega_0}{2\pi} = \left( \frac{g}{L} \right)^{1/2}$$

$$N_a = (\vec{r} \times \vec{F})_a = Mg \sin \theta$$

$$S_a = (\vec{r} \times \vec{P})_a = -ML^2 \dot{\theta}$$

$$ML^2 \ddot{\theta} = -Mg \sin \theta$$

$$x^2 + y^2 + z^2 = c^2 t^2$$

$$x' = \frac{x - vt}{(1 - v^2/c^2)^{1/2}}$$

$$\ddot{x} + \frac{\partial}{\partial t} \sin \theta = 0$$

$$F_x = -C_x$$

$$M_x = -C_x$$

$$\ddot{x} + \frac{C}{M} x = 0$$

$$x = A \sin(\omega_0 t + \varphi)$$

$$\dot{x} = \omega_0 A \cos(\omega_0 t + \varphi)$$

$$\ddot{x} = -\omega_0^2 A \sin(\omega_0 t + \varphi)$$

$$v_x = \omega_0 A \cos \varphi$$

$$E = \frac{Mc^2}{(1 - v^2/c^2)^{1/2}}$$

$$n = A \sin(\omega_0 t + \frac{1}{2}\pi) = A \cos(\omega_0 t)$$

$$E^2 = p^2 c^2 + M^2 c^2$$

$$K = \frac{1}{2} M \dot{x}^2 = \frac{1}{2} M \left[ \omega_0 A \cos(\omega_0 t + \varphi) \right]^2$$

$$= M c^2 \left[ 1 + \left( \frac{p^2}{M^2 c^2} \right) \right]$$

$$\langle K \rangle = \frac{\int_0^T K dt}{T} = \frac{1}{2} M \omega_0^2 A^2$$

$$\Delta t' = \Delta \tau = \left( 1 - \frac{v^2}{c^2} \right)^{1/2}$$

$$= \langle U \rangle = \frac{1}{2} M \omega_0^2 A^2$$

$$V_L = -L \frac{dI}{dt}$$

$$V_C = \frac{Q}{C} = \frac{1}{C} \int dt$$

$$\frac{\Delta P_{RL}}{\Delta t} = \left( 1 - \frac{v^2}{c^2} \right)^{1/2} \frac{\Delta P_R}{\Delta t} = \left( 1 - \frac{v^2}{c^2} \right)^{1/2} \frac{\Delta P_R}{\Delta \tau}$$

$$dP_R = \left( 1 - \frac{v^2}{c^2} \right)^{1/2} \frac{dP_R}{d\tau}, \quad \frac{dP_R}{d\tau} = \left( 1 - \frac{v^2}{c^2} \right)^{1/2} \frac{dP_R}{d\tau}$$



**Dr. AJIT KUMAR**

B. Sc. Hon. (*Patna University, 1995*), M. Sc. (*Mumbai University, 1997*)  
Ph. D. (*Mumbai University, 2002*)

**Associate Professor of Mathematics**  
**Head of the Department**

**SUBJECTS TAUGHT:**

UG: Applied Mathematics I, II and IV, Computer Programming

PG: Applied Linear Algebra, Advance Calculus, Numerical Methods, Computer Programming, Software Lab – I and II Optimization Techniques, Software Lab – II

**RESEARCH INTERESTS:**

Optimization Techniques, Statistical Analysis, Mathematical Pedagogy

**Recognized Research guide for Ph.D. (Sci.) in Mathematics**  
Ph. D. Guided: 01

On Going Ph.D. students: 02

Masters Projects Guided: 15

**Total Research Publications:**

National: 02, International: 08

Books Published: 04

Book Chapters: 06

**Dr. AMIYA R. BHOWMICK**

B.Sc. (*University of Calcutta, 2006*), M.Sc. (*IIT Bombay, 2008*)

Ph.D. (*University of Calcutta, 2015*)

**Assistant Professor of Mathematics**

**SUBJECTS TAUGHT:**

UG: Applied Mathematics I, Applied Mathematics II, Engineering Application of Computer

PG: Advanced Real Analysis, Applied Statistics

I, Applied Statistics II, Applied Statistics III, Mathematical Biology, Software Lab.

**RESEARCH INTERESTS:**

Statistical Inference on Growth Curve Models, Species Distribution Modelling, Stochastic Population Dynamics

**Recognized Research Guide for Ph.D. (Sci.) in Mathematics**

Guided students: On Going Ph.D. students: 01

Guided students: Masters: 11

**Total Research Publications:**

National: 3, International: 21

Citations: 204; H-Index: 9



**Dr. STUTI BORGOHAIN**

*B.Sc. (Cotton College, Assam, 2001), M.Sc. (Tezpur Central University, Assam, 2004), Ph.D. (Institute of Advanced Study in Science and Technology, Assam, 2012), PDF (IIT Bombay, NBHM(DAE, GOI), 2012-15)*

**Assistant Professor of Mathematics****SUBJECTS TAUGHT:**

UG: Applied Mathematics I, Applied Mathematics II, IPC Computer Course

PG: Differential Equations I, Differential Equations II, Numerical Methods I, Problem course in Mathematics

**RESEARCH INTERESTS:**

Sequence Space and Summability Theory, Fuzzy Mathematics, Measures of Compactness

**Total research publications:** International: 18, Citations: 131; H-Index: 4, **Guided students:** Masters:1

**Dr. V. DIVYA**

*B.Sc. (St. Stephen's College - University of Delhi, 2005), M. Math (Indian Statistical Institute – Bangalore, 2007), Ph.D. (University of Genoa – Italy, 2013)*

**UGC Assistant Professor****SUBJECTS TAUGHT:**

UG: Applied Mathematics I, Applied Mathematics II;

PG: Differential Equations I, Differential Equations II, Numerical Methods I, Numerical Methods II.

**RESEARCH INTERESTS:**

Fluid mechanics, Non-linear dynamics, Inverse problems and their applications

**Recognized Research Guide for Ph.D. (Sci.) in Mathematics**

**Guided students:** Masters: 05

**Total research publications:** International: 8

**Dr. AKSHAY S. RANE**

*B.Sc. (University of Mumbai, 2005), M.Sc. (University of Mumbai, 2007), Ph.D. (IIT Bombay, 2013)*

**UGC Assistant Professor****SUBJECTS TAUGHT:**

UG: Applied Mathematics – I, II and III, Engineering Application of Computer.

PG: Advanced Calculus, Applied Functional Analysis, Complex Analysis and Mathematical methods, Differential Equations, Applied Linear Algebra, Advanced Real Analysis.

**RESEARCH INTERESTS:**

Numerical Functional Analysis especially Spectral Approximation of Integral operators

**Recognized Research guide for Ph.D. (Sci.) in Mathematics**

Guided students: Masters: 6

**Total Research Publications:** 8, National: 1, International: 7  
Citations: 11; H-Index: 2



# Department of PHYSICS



**DR. MOHAN NARAYAN**  
*B.Sc., M.Sc., Ph.D.*  
Associate Professor of Physics  
**Head of the Department**



**Dr. MOHAN NARAYAN**  
*B.Sc.(Mumbai, 1988), M.Sc.(Mumbai, 1990), Ph.D.(Madras, 1999)*  
**Associate Professor of Physics**  
**Head of the Department**

**SUBJECTS TAUGHT:**

PG – Quantum Mechanics, Classical Mechanics, Molecular Quantum Mechanics and UG Lab

**RESEARCH INTERESTS:**

Theoretical High Energy Physics, Chemical Engineering Thermodynamics, Molecular dynamics

**Recognized Research Guide for Ph.D. (Sci.) in Physics**  
Guided students: Ph.D.: 01, Ongoing: 01

**Total Research Publications:**

National: 03, International: 23

H-Index: 10; Citations: 361

Impact factor-range: 1.0 to 6.11

**PROF. R. R. DESHMUKH**

*B.Sc. (Pune, 1991), M.Sc. (N. M. U. Jalgaon, 1994),  
B.Ed. (Mumbai, 1995) Ph.D. (Mumbai, 2002)*

**Registrar of ICT and Professor of Physics**

**SUBJECTS TAUGHT:**

Solid State Physics, Electricity and Magnetism, Analytical Techniques (PG).

**RESEARCH INTERESTS:**

Plasma Technology, Polymer Physics, Functionalisation of nanoparticles, Molecular tailoring of surfaces using plasma for biomedical applications, textile physics, Electro-optical properties of Polymer Dispersed Liquid Crystals, Polymer nanocomposite materials

**Recognized Research Guide for Ph.D. (Sci) in Physics,**

Chemistry

Guided students: Ph.D.: Guided : 06, Ongoing : 06

Masters: 02

**Total Research Publications:**

National: 05, International: 95

Book Chapter-08

H-Index: 30; Citations: 2552

i-10 Index: 62





**PROF. V. D. DESHPANDE**

*M.Sc. (Delhi, 1978), M.Phil. (Delhi, 1980),  
Ph.D. (Delhi, 1986)*

**Professor of Colour Physics**

**SUBJECTS TAUGHT:**

Lasers and Fibre optics, Ultrasonics, Colour Physics (UG and PG) and Colour Physics Lab

**RESEARCH INTERESTS:**

Polymer nanocomposites, Polymer blends: Crystallization kinetics, Mechanical and optical properties, study of dielectric behavior, Orientation behavior, structure-property relationship; Colour Physics: Colour assessment of dyed textiles; Assessment of the effect of the background on the colour perception; Polymer embedded nano-drug delivery; background on the colour perception; Polymer embedded nano-drug delivery;

**Recognized Research Guide for Ph.D. (Sci) in Physics**

Guided students: Ph.D. : 07

Masters: 05

**TOTAL RESEARCH PUBLICATIONS :**

National: 06, International: 27

h-Index: 06 Citations: 25

Patents (granted in last 5 years): 01

**Dr. NEETU JHA**

*B.Sc. (Calcutta Univ, 2002), M.Sc. (BHU,  
2004), Ph.D. (IIT-Madras, 2009)*

**UGC-FRP Assistant Professor**

**SUBJECTS TAUGHT:**

Nanoscience and Technology, Introduction to Nanoscience, UG Physics Lab

**RESEARCH INTERESTS:**

Carbon Nanomaterials, Supercapacitors, Fuel Cell  
Electrocatalyst, Capacitive Desalination, Photothermal materials.

Recognized Research Guide for Ph.D. (Sci.) and  
Ph.D. (Tech.): Physics and Green Technology

**Guided students:**

Ph.D. : 02, Masters: 06

**Total Research Publications :**

National : 02 International : 46

H-Index: 15; Citations: 1092

Patents (granted in last 5 years): 01

National and International Awards (last 5 years):

DST Young Scientist Award 2013; DST Inspire Faculty Award

2012; BRNS Young Scientist Research Award 2014.





**Dr. ARCHANA S. KALEKAR**  
*M.Sc. Ph.D. (Physics)*  
**Assistant Professor in Physics**

**SUBJECTS TAUGHT:**

Material Science, Material Synthesis, and Applied Physics.

**RESEARCH INTERESTS:**

Photovoltaics, Quantum Dot Sensitized Solar Cells (QDSSC), Photocatalytic Hydrogen generation, Photocatalytic dye degradation, Gas Sensors Supercapacitors, Chemical synthesis of semiconductor nanostructures.

**Recognized Research Guide for**

Ph.D. (Sci) in Physics

Guided students: Ph.D.: 2 (Ongoing)

Masters: 04

**Total Research Publications:**

National: 00, International: 34

h-Index: 14 Citations: 613

**SUBJECTS TAUGHT:**

Quantum Mechanics, Optics, Color Physics (UG) and General Physics (PG) Laboratory

**RESEARCH INTERESTS:**

Materials Physics, Quantum Magnetism, Thermal Transport, Crystal Growth

**Recognized Research Guide for Ph.D. (Sci) in Physics**

**Total Research Publications:**

National: 0 International: 10

h-Index: 4, Citations: 68

**Dr. ASHWIN MOHAN**

*B.Sc. (Mumbai, 2007),*

*M.Sc. (Mumbai, 2009),*

*Ph.D. (Germany, 2014)*

**Assistant Professor of Physics**



**Dr. PARESH H. SALAME**

*M.Sc. (Condensed Matter Physics, 2005), Ph.D. (IIT Bombay, 2014)*

**Assistant Professor in Physics**

**SUBJECTS TAUGHT:**

Introduction to Ceramics (PG), Analytical Techniques (PG), Polymer I and II (PG) , FY BTech Lab (UG), General Physics Lab (UG).

**RESEARCH INTERESTS:**

Rechargeable Secondary Batteries (Na-ion batteries), Supercapacitors, Colossal Dielectric Materials,Multiferroic Materials, Electro-ceramics,Polymer Nanocomposites

**Recognized Research Guide for Ph.D. (Sci) in Physics**

Guided students:Ph.D. :

Masters: 1 (ongoing)

**Total Research Publications:**

International: 13

h-Index: 05, Citations: 81





**INSTITUTE OF CHEMICAL TECHNOLOGY**  
( DEEMED UNIVERSITY UNDER SECTION - 3 OF UGC ACT - 1956 )

संस्कृत विद्यालय

551



# DBT-ICT CENTRE FOR ENERGY BIOSCIENCES



**DR. ANNAMMA ANIL ODANETH**

*B.Sc. (Microbiology),  
M.Sc. (Biotechnology),  
P.G. Diploma in Bioinformatics, Ph.D.  
Applied Chemistry  
Co-ordinator, DBT-ICT Center for Energy  
Biosciences*

**Associate Professor**

**Head of the Department**



**Dr. ANNAMMA ANIL ODANETH**

B.Sc. (Microbiology), M.Sc. (Biotechnology),  
P.G. Diploma in Bioinformatics, Ph.D. Applied Chemistry  
**Co-ordinator, DBT-ICT Center for Energy Biosciences**  
**Associate Professor**

**SUBJECTS TAUGHT:**

Biological Sciences, Protein and Enzyme Engineering; Biocatalysis & Enzyme Technology.

**RESEARCH INTERESTS :**

Biocatalysis & Microbial fermentation for waste to value products, secondary agriculture, mining, redesigning and implementing proteins for food, feed, fuel and functional molecule synthesis, Yeast microbiology and synthetic Engineering, byproduct process development, integration & intensification, Process development, Characterization & scale-up.

**Recognized Research guide for Ph.D. (Sci.) in Biotechnology, Ph.D. (Sci.) in Bioprocess Technology, Masters in Bioprocess Technology, Masters in Green Technology**

**Guided students:** Ph.D. 8; Masters: 15

**Total Research Publications:** National: 1, International: 34

**Dr. VISHWANATH H. DALVI**

B. Chem. Eng. (UDCT, Mumbai)  
M.S., P.D.Eng in Process Engineering (University of Twente, NL), Ph.D. in Chemical Engineering (University of Texas at Austin, USA)

Co-coordinator, DBT-ICT Center for Energy Biosciences

**R. A. Mashelkar Assistant Professor and Co-ordinator**

**SUBJECTS TAUGHT:**

Industrial Engineering Chemistry, Chemical Process Control, Advanced Mass Transfer, Process Simulation Laboratory, Chemical Engineering Laboratory, Mathematical Methods in Chemical Engineering.

**RESEARCH INTERESTS:**

Renewable Energy, Solar Thermal Technology, Anaerobic Digestion, Process Simulation, Molecular Simulations, Applied Thermodynamics, Process Scaleup

Recognized Research guide for Ph.D. (Tech.) in Chemical Engineering, Masters in Chemical Engineering

Guided students: Ph.D. 2 (coguided) (5 ongoing); Masters: 12

Total Research Publications: National: 0, International: 17

Patents (granted in last 5 years): National: 1, International: 0





**Dr. SHALINI DEB**  
*Ph.D. (Sci.) (Biotechnology)*  
**Research Scientist**

**RESEARCH INTERESTS:**

Genome engineering, synthetic biology, metabolic engineering, protein engineering, gas fermentation, high-throughput screening strategies for metabolites of interest

**Recognized Research guide for M. Tech. BPT**

Guided Students: PhD: Nil, Masters: 2 (ongoing)

**Total Research Publications-**

International: 2

Patents (granted in last 5 years): 2

**Dr. REENA PANDIT**

*B.Sc. (Zoology), M.Sc. (Marine Biology),  
 Ph.D. (Marine Biotechnology)*

**Associate Professor**

**SUBJECT TAUGHT:**

Biochemistry, Green Biotechnology

**RESEARCH INTERESTS:**

Algal growth engineering for production of biofuel and biochemicals, CO<sub>2</sub> sequestration and waste water management using micro and macroalgae, Genetic engineering of cyanobacteria for value added compounds

**Recognized Research guide for M. Tech. Bioprocess**

Technology and Green Technology

Guided students: Ph.D.: 1 (Co-Guided), 7 (Guided)

Masters: 19 (Completed), 3 (Ongoing)

**Total Research Publications:** National: 2, International: 22,

**Patents:** 1 (National)



**Dr. HITESH PAWAR**  
*M.Sc. (Organic Chemistry), Ph.D. (Science) Chemistry*  
**Assistant Professor**

**SUBJECTS TAUGHT:**

Analytical techniques in Bioprocessing, Unit Operation (M.Tech Bioprocess Technology)

**RESEARCH INTERESTS:**

Conversion of bio-based sugars to value added chemicals, Photocatalytic hydrogen production, Novel homogeneous, heterogeneous and transition metal catalysis, Synthesis of ionic liquids, deep eutectic solvents, Study of reaction kinetics and reaction mechanism, Designing and development of industrial catalyst, Process intensification and integration, Process development, characterization and scale –up, Chromatographic separation and purification of small molecules, Computational chemistry and molecular modeling Efluent treatment.

**Recognized Research guide for Ph.D. (Sci.) in Biotechnology, Ph.D. (Tech.) and M Tech. Bioprocess Technology, Ph.D. (Chemistry)**

**Guided students:** Ph. D 4 (Ongoing) Masters 3 (Ongoing)

**Total Research Publications:** International: 10, Patents: 10

**Dr. GUNJAN PRAKASH**

M.Sc. (Plant Sciences), Ph.D. (Plant Biotechnology and Fermentation),

**Associate Professor**

**SUBJECTS TAUGHT:**

Microbiology, Fermentation

**RESEARCH INTERESTS:**

Molecular Biology of algae and marine protist, Algal Biotechnology and Biofuels, Production of high value compounds from Algae and Plants, Fermentation for value added compounds

**Recognized Research Guide for:** Biotechnology (Science)

Guided students: Ph.D: 3 (Co-guide), Masters: 10 (Guide)

**Total Research Publications:** National: 2, International: 19

Patents: 3



**Dr. CRK REDDY**

Ph.D. (Marine Sciences)

**DBT Energy Biosciences Chair Professor**

**RESEARCH INTERESTS:**

Seaweed feedstock production and its biorefining

**Recognized Research guide for** Biotechnology

Guided Ph.D : 10

**Total Publication:** National 4, International: 104

**Patents (granted in last 5 years):** 1

**Dr. SHAMLAN M. S. RESHAMWALA**

B.Sc. (Microbiology and Biochemistry), M.Sc. (Biochemistry), Ph.D. (Molecular Biology)

**Assistant Professor**

**SUBJECT TAUGHT:**

Biosystems and Bioprocess Engineering, Molecular Biology and Biotechnology, Applied and Synthetic Biology, Intellectual Property Rights

**RESEARCH INTERESTS:**

Molecular and synthetic biology, recombinant protein expression in prokaryotic and eukaryotic host cells, enzyme engineering for improved catalysis and robustness, metabolic and pathway engineering to design novel biosynthetic routes for high-value chemicals, valorization of abundant feedstocks, bioprospecting to explore metabolic diversity, science communication and pedagogy, IP policy

**Total Research Publications:**

International: 10, Patents: 1





**Mr. DEEPAK SARDA**  
*M.Tech. (BPT), LLB*  
**Research Associate (IPM and TC Unit)**

**SUBJECTS TAUGHT:**

IP

**RESEARCH INTERESTS:**

Patent prosecution, Trademark, Copyright, Legal NDA/MoU.

**Total Research Publications:**

International: 1



**Dr. NITIN TRIVEDI**  
*Ph. D. (Biological Sciences)*  
**DST INSPIRE Faculty**

**SUBJECTS TAUGHT:**

Microbiology

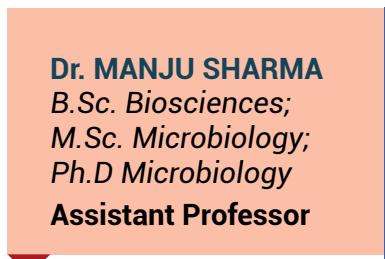
**RESEARCH INTERESTS:**

Seaweed biofuel and bio-refinery, Algal bioremediation, Algal growth engineering, Marine enzymes, Biomass to biochemicals.

**Recognized Research guide for MTech Bioprocess Technology**

**Total Research Publications:**

International: 21, Patents : 3



**Dr. MANJU SHARMA**

*B.Sc. Biosciences;*  
*M.Sc. Microbiology;*  
*Ph.D Microbiology*

**Assistant Professor**

**SUBJECTS TAUGHT:**

Microbiology

**RESEARCH INTERESTS:**

Waste Valorization, Biogas/ CBG, Anaerobic/ aerobic fermentation for biobased chemicals, Consortium design & microbiome studies, Bioprospecting of industrially important microbes, Thermophilic enzymes, Industrial Microbiology/Microbial Biotechnology

**Recognized Research guide for NA**

Ph.D: 2, Masters: 2

**Total Research Publications :**  
International: 06





# PROFESSOR M.M. SHARMA LIBRARY



**Mrs. MADHAVI WADKAR**  
B.Sc., M.L.I.Sc.  
**Senior Librarian**  
**Head of the Library**  
**Warden, Girls Hostel**

**Mr. AMOGH LOKHANDE**  
B.Sc. M.L.I.Sc.  
**Librarian**





# PROFILE OF DEPARTMENTS AND CENTRES OF EXCELLENCE

Masters  
of the  
Nano Age

## DEPARTMENT OF CHEMICAL ENGINEERING



### **VISION :**

We will strive to be a vibrant department, with continuously evolving curricula and programmes that will charter the future of chemical, biological, materials and energy industries of the nation and be on par with the very best in the world through the participation and scholarship of our faculty, and students who will be torch bearers in education and research and have great impact in solving societal needs for the benefit of mankind at large.

### **MISSION :**

We will create an atmosphere conducive to generate new knowledge at every opportunity for our students at large. Our education will enable new chemical engineering solutions to meet the need of all segments of society with regard to material and energy, while protecting the environment and conserving the natural resources. Our endeavors will enhance the public welfare. Our activities will not be limited to class-rooms but will extend to a greater multi and cross disciplinary platform to conduct research, discovery, technology development, service to industry and entrepreneurship in consonance with India's aspiration to be a welfare state. We will team chemical engineers with professionals in other disciplines to arrive at better solutions. We will provide all students with a strong foundation in chemical engineering and applied sciences to encourage them to be our ambassadors at national and international level, in whatever professional activity they undertake to serve the society. Through our vision, we will serve the chemical engineering profession and society and strive to reach the summit as a team and stake-holders and as role models to the younger generation.

### **What is Chemical Engineering?**

Chemical engineering is one of the most versatile branch of engineering that applies scientific and mathematical principles to design and develop processes by which available chemicals can be converted into a variety of useful products. Chemical Engineering is applicable to a wide range of technologies, including the production of energy, materials, electronics, and pharmaceuticals, the processing of food, and environmental protection as well as remediation. The development of high quality materials, products and large scale processes is the testimony

of an industrialized nation and every nation tries to build its foundation on the strong pillars of Chemical Engineering profession which cuts across several chartered and unchartered territories of human civilization. Thus Chemical engineering is practised from nano scale to mega scale, from food / pharma to nuclear engineering from mineral/ mining to silicon (high purity grade). The subjects of energy, environment and sustainability are very much integral part of Chemical Engineering as Chemical engineering fundamentals are used to solve problems related to pollution, hunger and sustainable living (housing and modern farming).

## **MODERN CHEMICAL ENGINEERING**

The modern discipline of chemical engineering encompasses much more than just process engineering. Chemical Engineering is highly science based discipline and is the most versatile and accommodative branch of engineering among all. Chemical Engineering work on scales from atom to atmosphere and are involved in all possible human activities which process materials and energy. Human body is the best example of applications of principles of Chemical Engineering. Kitchen uses all sorts of unit operations familiar to Chemical Engineering. All transport phenomena are unified due to Chemical Engineering. Chemical engineers are now engaged in the development and production of a diverse range of products, as well as in commodity and specialty chemicals. These products include high performance materials needed for aerospace, automotive, biomedical, electronic, environmental, and space and military applications. Examples include ultra-strong fibres, fabrics, adhesives and composites for vehicles, bio-compatible materials for implants and prosthetics, gels for medical applications, pharmaceuticals, and films with special dielectric, optical, or spectroscopic properties for opto-electronic devices. Additionally, chemical engineering is often intertwined with biology and biomedical engineering. Many chemical engineers work on biological projects such as understanding biopolymers (proteins) and mapping the human genome.

A new paradigm of “borderless chemical engineering science” is emerging. The demands from the society on ‘cleaner’ technologies rather ‘clean-up’ technologies, the emergence of ‘performance chemicals and materials’ etc., is driving the profession towards achieving a symbiotic relationship with other disciplines. It has always been dealing with pollution prevention, atom economy, recycle, as the Solvay process would suggest. The term ‘green chemical engineering’ as a mantra for sustainable development and responsible care is at the centre-stage for all activities related to

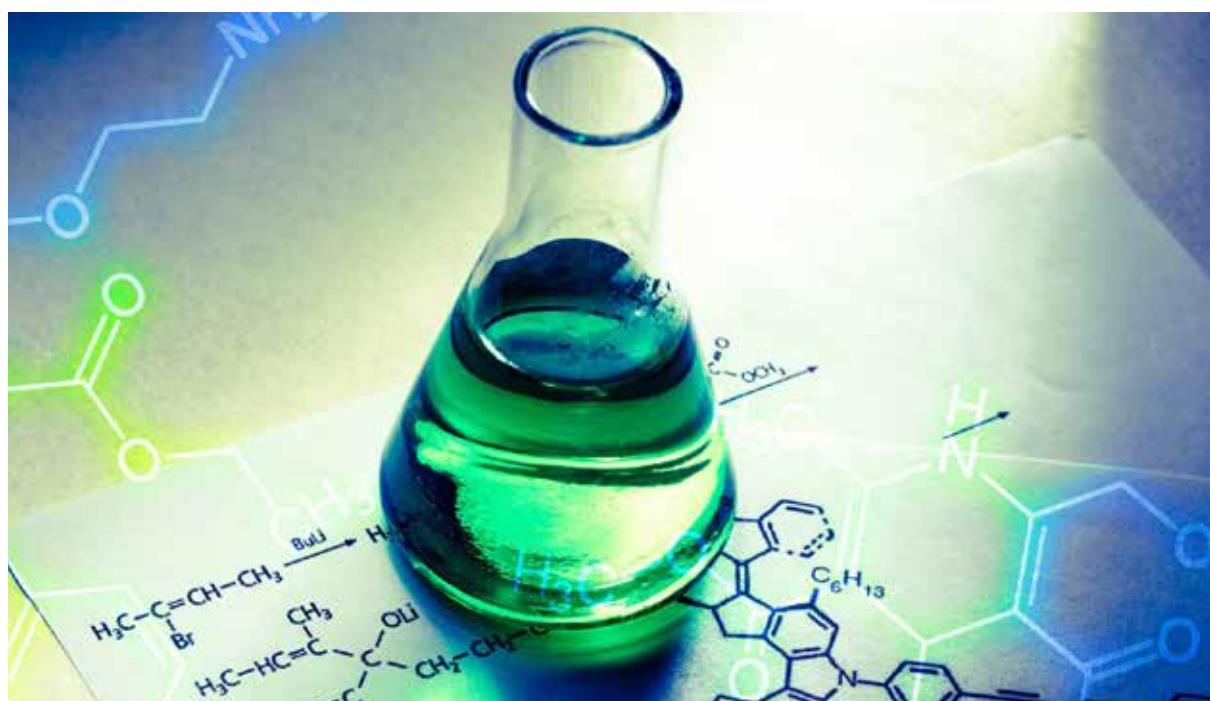


chemical engineering. Future course of an engineering discipline is reflected in current research areas within its folds. The expedition ahead for Chemical Engineering, based on the research profile of Chemical Engineering schools world over suggests that it is embracing biology, bio-engineering, tissue engineering, bio-processing, green chemistry and green engineering, and material science and nanotechnology in a big way and has been a truly working on scales from atom to atmosphere. Readily available computing power is changing the nature of research activity forever. A high level of mathematics and computational methods are intertwined with chemical engineering. The advent of new measurement techniques is reducing the length scale of investigation to nano and molecular scales irreversibly in many cases. Chemical Engineering thus appears poised for a major expansion. Chemical engineers are getting directly involved in development of new products and new technologies which improve the quality of life which requires highly interdisciplinary work, new ways of treating diseases-a domain of medical practitioners only till very recently, and development of application specific materials and fluids with complex structure at various length scales.

Chemical Engineering is not just Chemistry but a discipline itself with own characteristics. A proficiency in basic sciences such as Chemistry, Physics, Biology, Mathematics and their applications is necessary to effectively conduct the molecular transformations at scales varying from thousands of tonnes to few kilograms per day in economically attractive and environmentally safe manner. Each reaction with unique characteristics gives challenging opportunities to conduct it at profitable scale to produce increasingly purer products as per market demands with minimum energy input in shortest time without producing waste or by-products. Each combination of Reaction and Reactor is, therefore, a challenge to the Chemical engineer to make it faster, simpler and cheaper.

## **Borderless and Versatile Engineering Profession**

Over the few decades, Chemical Engineering has evolved developing interfaces with newer areas, including Biochemical Engineering, Nano Technology, and Energy Engineering taking advantage of developments in High performance computations, Electronics and Instrumentations and Information Processing. Although the basic responsibility of a Chemical engineer remains in design, testing, scale-up, operation and control of chemical plants, the interface helps the Chemical Engineers to enter into these newer areas at ease. Large Manufacturing facilities such as cements, petroleum refineries, oil and natural gas exploration and semiconductor Industries, biofuels and biotransformations, nuclear reactors, all involve Chemical engineering operations. Chemical engineers find good job opportunities in a wide spectrum of industries involving speciality chemicals, pharmaceuticals, drugs, polymers, textiles, paints, dyes, vegetable oils and foods.





Because of excellent analytical skills Chemical Engineers(CE) can work in areas from chemoinformatics to bioinformatics, drug delivery systems, molecular modelling, to handling systems from nanoscales to global scales for environmental impact and climate change. The versatility of Chemical Engineering education, therefore, makes a wide choice of career options available to the CE candidates. There is a huge scope for higher studies in Chemical Engineering because of highly science based discipline and requirement of RandD in the country. All B.Tech. courses in ICT have much wider base in Chemical Engineering including subjects like Material and Energy Balance, Separation Processes, Heat and Mass Transfer, Chemical Reaction Engineering, Thermodynamics, Process Control, Chemical Process Industries, Chemical Process Economics. Consequently, at Masters level ICT B.Tech. students from all specialisation are accepted for admissions in Western Universities and within ICT itself.

The Integrated Master of Technology with a major in Chemical Engineering and minor in other branches was thus conceived which also includes trimester system and two year's industrial/research internship. These innovative programmes will be offered at the IOC Bhubaneswar and Marathwada Campus at Jalna.

### **International Standing of Department**

The Department of Chemical Engineering is the number one Chemical Engineering Department in the Country by all the standards: teaching, research and industrial relationship, as has been rated by the international surveys conducted by Professor Jude Sommerfield of Georgia Tech., USA since 1964 for every five year period as well as every year and also during the 5-year period during 2014 which included all IITs and IISc. Besides it is among top 10 Departments in the world and in terms of productivity as measured by papers per faculty per dollar spent, it is number one in the world. The number of papers published in peer reviewed journals per faculty is also the highest in India. The FIST programme of DST has revealed that the Chemical Engineering Department is the Best Department in all engineering Departments in India.

This is again the record which has been held due to the research contributions of faculty in international journals of repute. The value and impact of our research is reflected in highest number of papers per faculty member, highest impact factor per paper, and highest number of citations for papers of Chemical Engineering Department. The Department is recognized as the UGC Centre for Advanced Studies for a record time since 1989 and as UGC Networking Resource Centre in Chemical Engineering, since 2008; only one of its kind and further supported by DST-FIST programme with state-of-the-art research facilities.

The faculty has been acting as consultants to industry and the earnings are the highest for any engineering Department in India.

## **Connectivity with Industry**

Collaborative Academic Programs have been initiated with international institutes such as Purdue University, Kansas University, University of Saskatchewan, ICGEB, and, CSIR labs. Many foreign universities have shown interest in collaborating with Chemical Engineering faculty, and the most striking is a string of Canadian Universities desirous of signing MOUs with this Department. The dual Ph.D. degree programme in Chemical Engineering with Michigan State University, USA is the highlight of this year.

## **Accolades and Awards**

The last three Vice-Chancellors / Directors of ICT have been bestowed upon with Padma awards with Prof. Yadav being awarded Padmashree in Jan' 16. Two former Directors of CSIR labs are currently Distinguished Professors in Chemical Engineering Department which is also unique. A number of awards have come to the faculty members in Chemical Engineering including Jagdish Chandra Bose National Fellowship, fellowships of Indian National Science Academy, Indian Academy of Sciences, National Academy of Sciences in India, Indian National Academy of Engineering and Indian Institute of Chemical Engineers. Not only faculty members but students also have bagged a number of awards. Even home paper or design papers of the final year students have been repeatedly rated as the best by the Indian Institute of Chemical Engineers and the Ambuja Cement and Sir P. C. Ray Awards have come several times to ICT which itself is a record. All these awards recognize excellence in the field of Chemical Engineering. The ICT has also received the award for being 'The Best Industry Related Institute in Chemical Engineering' from the confederation of Indian Industries and the All India Institute of Technical Education.

## **Employment Opportunities**

Our graduates, numbering over 30-35 per year are accepted with full fellowships in leading universities including MIT, Minnesota, UCB, Caltech, Wisconsin-Madison, Princeton, Stanford, Texas A and M, University of Texas, University of Delaware, Purdue University, and many more. All students are placed in some of the leading industries in India, with salaries ranging from Rs. 3.5 lakhs to Rs. 15.5 lakhs per annum and these are hard core industries and not the software companies. Several leading industrialists and owners of fortune-500 company owners are our graduates, including top planners and policy makers, who have been bestowed with Padma awards.

## **Research Interests of Faculty**

The Chemical Engineering faculty has been well known for their publications in peer reviewed high impact factor journals, patents and industrial consultations in a variety of research interests.

**Major Thrust of Research Areas :** Development of Novel Reactors, Reactions and Separation Processes Analysis of Multiphase Phenomena, Computational Fluid Dynamics for Multiphase Systems, Novel Catalytic Materials and Processes, Surfactant Science and Hydrotropy, Organic Chemical Processes Development, Biotechnology and Downstream Processing, Adsorptive and Chromatographic Separations, Green Chemistry, Engineering and Technology, Cavitation Phenomena, Sonochemistry, Membrane Based Separation Processes, Bio-Technology and Bio-medicines, Environmental Protection and Safety, Nanoscience and Nano-Technology, Nano Technology, Materials Technology

In the global context, the priority research areas as identified by the Chemical Engineering Department are:

Multiphase reactions, multiphase reactors and separation processes

Energy engineering with an emphasis on the renewable energy resource

## **Laboratory and Research Facilities**

All Chemical Engineering laboratories and faculty offices have been remodeled during past 5 years. The labs are equipped with state-of-the-art instruments and have gone a total face-lift. UG students are provided computational facility in the main laboratory, including latest software required for modeling and simulation. Some of the sophisticated equipment which have been

acquired and used continuously are: GC-MS, LC-MS, SEM, TEM, AFM, IC, FTIR, HP-TLC, HPLC, GC, XRD, DSC, DTA/TGA, AAS, Laser-Doppler anemometer, image analysers, pore and particle size analysers, autoclaves of different sizes and MOCs, catalyst screening bench-top autoclave assembly, supercritical fluid phase monitor and reactor, microwave reactors, computer workstations, laminar flow apparatus, fermenters, and many others. Advanced instrumental facilities have been created under industry sponsored projects as well. The new campuses will also be provided with sophisticated instrumental facilities including Ph.D. fellowships.

### Fellowships

Twenty Ph.D. fellowships under ICT-DAE Centre for Chemical Engineering Education and Research. Several projects are secured by the faculty in the areas of expertise from central agencies such as DST, DBT, CSIR, including Indian and foreign companies; this number varies from year to year. Interested candidates must appear for the entrance examination for a Ph.D. degree, whether funded government or industry. For GATE qualified students fellowships are offered at the UGC rate and others as per the provision of the funding. No student is admitted to any Ph.D. programme.

Apart from Master of Chemical Engineering programme, the department also participates in two interdisciplinary M.Tech. courses - Perfume and Flavour Technology, Green Technology and Bioprocess Technology. At least 19 Masters fellowships offered for GATE qualified students in the first round and typically this number is around 30+ when the admissions are closed. Besides, about 10-15 M. Tech. students in Bioprocess Technology (with a special reference to downstream processing), Food Biotechnology, Pharmaceutical Biotechnology, Perfumery and Flavour Technology work under the guidance of Chemical Engineering faculty.

### Interdisciplinary and Cross Disciplinary Programmes

Several faculty members guide Ph.D. students in all disciplines of Chemistry and Biotechnology, as well as in all branches of Chemical Technology on inter-disciplinary topics and several chemistry graduates have benefitted by their training in the Department of Chemical Engineering.

### Visiting Faculty Endowments

There are several endowments created to invite the best of professionals and academics to the ICT. Some eminent faculty from institutes such as MIT, Purdue, Cambridge, Monash University, University of California, Berkeley, University of California, Santa Barbara, National University of Singapore, Montreal, University of Michigan, Michigan State University, University of Alberta,



RMIT Australia, IIT-Chicago, Cambridge University, University of Manchester, IIT-Bombay, IIT-Kanpur, IIT-Madras, National Chemical Laboratory, have taught UG and PG courses in ICT under these endowments.

These lectures form part of audit courses for research students. Besides, public lectures are organized under each endowment.

## **HOMI SETHNA ICT-DAE CENTRE FOR CHEMICAL ENGINEERING EDUCATION AND RESEARCH**

### **Preamble:**

The Institute of Chemical Technology (ICT) and the Department of Atomic Energy (DAE) signed a Memorandum of Agreement (MOA) in 2006 having far reaching benefits for Indian S and T, which was based on the excellent relation between these two organizations and successful completion of projects by ICT faculty of Chemical Engineering. The MOU covers the following activities.

- (A) Instituting an interdisciplinary Ph.D. programme in Chemical Engineering.
- (B) Undertaking RandD projects in the areas of common interests and related to nuclear fuel cycle and advanced technologies.

DAE Research Institutions, namely, Bhabha Atomic Research Centre (BARC) and Indira Gandhi Centre of Atomic Research (IGCAR) are premier multidisciplinary RandD organizations engaged in research with the objective of generating knowledge and techniques for nuclear power production, advancement of science, use of radioisotopes in industry, health and agriculture as well as research in frontier areas of science and technology. BARC and IGCAR have multi-disciplinary groups of experts who have contributed to the development of processes and technologies related to thermal and fast nuclear reactors, fuel cycle and related areas. BARC and IGCAR have pursued research and development in chemical engineering in a rigorous way for many years in the areas defined by DAE's mission oriented programmes as well as projects of national interest. BARC and IGCAR support academic programmes within the DAE and also in the academic institutions and research centres in various parts of the country.

ICT is one of the foremost academic institutions in India, and has the necessary infrastructure in terms of trained manpower (including students) and a long tradition of research and development in Chemical Engineering and Chemical Technology. ICT has also had long and fruitful experience of working with BARC and other units of DAE on research projects related to Chemical Engineering and process technologies and have completed them meeting the high standards expected by DAE. On the national level, ICT is a major resource Institution in terms of technology development and fundamental research at the cutting age on the global scale. They have also entered into an MoU with Homi Bhabha National Institute (HBNI) for collaborating on academic programs especially suited to the requirements of DAE institutions.

In the Xth and XIth Five Year Plan, BARC and ICT had undertaken a joint research programme encompassing several DAE research projects in the Chemical Engineering field. Through the Virtual Centre, called, DAE-ICT Centre for Knowledge Based Engineering, BARC scientists and ICT faculty have collaborated and very successfully completed several projects. In view of the success of the collaborative programme through the Centre for Knowledge Based Engineering, BARC and IGCAR proposed to enlarge the scope of collaboration by establishing the DAE-ICT Centre for Chemical Engineering Education and Research that will synergise the strengths of both these organisations. On the one hand, ICT has proven track record in training high quality manpower and in conducting research in Chemical Engineering and technology, on the other hand BARC and IGCAR have demonstrated over decades their ability to conduct multi-disciplinary, mission oriented RandD leading to a large number of indigenous and innovative chemical engineering processes, equipment and instruments, and technologies.

DAE has to develop several innovative technologies to tackle the problems of efficient nuclear fuel utilisation in the second and third stages of nuclear power programme. This requires a pool of qualified, motivated and talented young research scientists with multidisciplinary expertise. The number of Ph.D. level chemical engineers is small in this country and the number of chemical engineers entering DAE is even less. Thus, the number of Ph.D. scholars working on energy related programmes needs to be increased. Further, these scientists need to have wider knowledge of both basic sciences and allied engineering subjects besides chemical engineering, which is essential for the development of innovative technologies. However, the present education system imparts expertise only in selected areas. To satisfy the need of greater number of Ph.D. scholars well versed in basic sciences and chemical engineering, DAE and ICT wish to take an initiative for imparting doctoral education in chemical engineering with multidisciplinary character.

### **Scope of Collaboration**

1. To provide doctoral degrees to promising candidates with talent and aptitude for carrying out advanced research and development activities in science and technology.
2. To furnish a multidisciplinary, flexible and innovative Ph.D. research programme in Chemical Engineering with special emphasis on :
  - (a) Acquisition of proficiency in research, knowledge, data generation and analysis, mathematical modeling, and management with sharpening skills in innovative experimental methods and problem-solving capabilities;
  - (b) Creation of a pool of young talented, dedicated and committed individuals with passion and involvement in pursuing research and development as a career;
  - (c) Inculcation of attitude, temper, and outlook for developing social commitment as well as high level of scientific ethics and integrity.
3. To evolve a symbiotic relationship between the ICT and DAE Institutions in such a way that it enables the Collaborative Programme to grow and develop, and in turn ensures that research projects of relevance to the objectives of DAE research institutions are integrated with creative and innovative content.
4. To select students on the basis of an all-India test and subsequent interview jointly conducted by ICT and BARC/IGCAR.
5. To promote effective linkages on a continuing basis between ICT, BARC and IGCAR and the Industry for joint research projects and training programmes and other academic activities related to these Institutes. The expertise and experience so gained shall be shared with other Universities in the country at large.
6. To disseminate the new knowledge in the form of publications, theses, seminars and conferences.

### **Ph. D. Programme in Chemical Engineering**

#### **Induction of Students**

It is proposed to introduce a Ph.D. programme with an initial intake of about 20 students per year, drawn from Chemical Engineering, Metallurgical and Mechanical Engineering disciplines at the Bachelors and Masters Levels, and also from Chemistry, Physics and Mathematics streams with Masters degree. The Masters Degree holders in Engineering will have to spend a minimum duration of 3 years, the Bachelors degree holder in Engineering 4 years and M.Sc. degree holder in science stream 5 years for earning the Ph.D. degree. The students will be selected on the basis of all India written test and interview conducted jointly by ICT and DAE.

### **Course Work, In-Plant Training and Research**

#### a) Course Work

The proposed curriculum will have a fine balance of basic and engineering sciences. The curriculum will contain adequate fundamental and core courses to equip the students adequately to make them practising chemical engineers, as enumerated below. At the same time, they will have a background for starting independent research career.

#### **Areas of teaching and research**

- |                          |                                      |
|--------------------------|--------------------------------------|
| (a) Chemical Engineering | (c) Bio-technology                   |
| (b) Process Technology   | (d) Materials Science and Technology |

#### **Typical List of courses to be taken by the Post Graduates in Science**

- (a) Material and Energy Balance Computations
- (b) Industrial and Engineering Chemistry
- (c) Generation and Transmission of Power
- (d) Electrical Engineering and Electronics
- (e) Applied Mechanics and Strength of Materials.
- (f) Momentum Transfer
- (g) Heat Transfer
- (h) Mass transfer
- (i) Unit Operations
- (j) Chemical Reaction Engineering
- (k) Engineering Graphics
- (l) Project Engineering Management and Economics
- (m) Biochemical Engineering
- (n) Advanced Separation Processes
- (o) Process simulations
- (p) Materials Processing and fabrication technology
- (q) Nuclear Reactor Theory
- (r) Nuclear Chemical Engineering
- (s) Statistical Methods of Analysis
- (t) Instrumental methods of analysis
- (u) Nuclear chemistry
- (v) Radiation chemistry
- (w) Chemical Engineering Thermodynamics
- (x) Process Hazard Analysis and Safety

#### **Typical List of courses to be taken by the Engineering Graduates/ Post Graduates**

- (a) Quantum Mechanics
- (b) Structure - Property Relationships
- (c) Materials Physics and Chemistry
- (d) Advanced Chemical Engineering Thermodynamics
- (e) Nuclear Reactor Theory
- (f) Nuclear Chemical Engineering
- (g) Process simulation and optimization
- (h) Transport phenomena
- (i) Advanced Reactor Engineering
- (j) Advanced Mass Transfer

- (k) Statistical methods of analysis
- (m) Nuclear chemistry
- (n) Radiation chemistry
- (o) Process Hazard Analysis and Safety

### **In-Plant Training**

All the students before starting Ph.D. research will undergo in plant training for a period of one to three months in the process industry. Some students will undergo training in DAE.

### **Research Projects**

The Ph.D. scholars will take up research projects primarily defined by BARC and IGCAR. However, there will be a certain degree of flexibility for selecting research projects outside the areas of relevance to DAE. To take advantage of the excellent laboratory and library facilities at the DAE institutions, the faculty and students will be provided access to conduct experiments and use of the library and computational facilities at the DAE institutions.

## **COLLABORATION WITH HOMI BHABHA NATIONAL INSTITUTE**

### **Preamble**

There was a dire need to recognize the common interests of ICT and HBNI constituent institutions (CIs) in pursuit of knowledge through doctoral and master's programmes. There is a possibility of the candidates admitted in some of the CIs of HBNI may study at the ICT and carry out the projects under the joint supervision of the faculty members from the ICT and the scientists and faculty members from the CIs of HBNI. It will be mutually beneficial to have lectures by the ICT faculty members at the HBNI, and by the HBNI faculty members and scientists at the CIs of HBNI at the ICT. For the purpose of academic programmes, the following units of DAE are the Constituent Institutions (CIs) of the HBNI are included:

1. Bhabha Atomic Research Centre (BARC), Mumbai
2. Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam
3. Raja Ramanna Centre for Advanced Technology (RRCAT), Indore
4. Variable Energy Cyclotron Centre (VECC), Kolkata
5. Saha Institute of Nuclear Physics (SINP), Kolkata
6. Institute of Plasma Research (IPR), Gandhinagar
7. Institute of Physics (IOP), Bhubaneswar
8. Harish-Chandra Research Institute (HRI), Allahabad
9. Tata Memorial Centre (TMC), Mumbai
10. Institute of Mathematical Sciences (IMSc), Chennai

The two Institutes shall recognize each other's research guides in the disciplines of common interests. The identified faculty members of each Institute may function as Honorary Professors of the other Institute and may participate in the teaching programmes of the other Institute in honorary capacity, as per the Rules of the respective institute. The Honorary professors will enjoy the library facilities of each other's institutes like regular faculty. However, a separate request must be made to avail of book-borrowing facilities. In order to share expertise, some seats may be given on priority basis to the faculty and students of the other Institute in the academic/research programmes of one Institute, which are mainly for the in-house persons and where limited access is available for persons coming from outside, such as training programmes, seminars, workshops, etc. The research facilities at one Institute should be made available to the students/scientists/faculty of the other Institute through the involvement of research supervisors or the technology advisors, as per the norms of the respective institute, as follows:

1. A student registered for a post-graduate course in one Institute shall be governed by the Rules of that Institute and will earn the credits of the course as per the prescribed norms. However, a student from one Institute will be permitted to enroll for equivalent courses in the other Institute and earn the credits by attending the courses and clearing the respective evaluation procedures, provided such courses are duly approved by the parent Institute. Thus, the two Institutes shall recognize the credits earned by the students in the institute other than the one where they are enrolled.
2. To facilitate the process of a student attending the course work in the partner Institute, the supervisor of the student in the Parent Institute shall put up a proposal (in consultation with the appropriate academic bodies of the Institute concerned) to the Dean (HBNI)/ Dean(CT), as the case may be.
3. A research guide in one Institute may select a faculty member from a partner institute as a co-guide for guiding a Master's or doctoral student working under his/her guidance; provided such a declaration is recorded at the time of registering the student, with consents from the Heads of both the Institutes. However, collaboration among faculty of each institute, without any such formal arrangement will be within the frame-work on the MOU. This may be required for joint publications.
4. A student with a co-guide should be permitted to work in the specified laboratories of the organization to which the co-guide belongs and avail the facilities there from, and the organization should have no objection to the inclusion of the outcome of the research under this programme in the thesis of the student.
5. Any liability arising out of the work done by a student in the co-guide's organization shall be the responsibility of the co-guide and the parent Institute of the student shall not be responsible for the same.
6. Any patent emerging out of the research work under such a programme shall be with the authorship of candidate, guide, co-guide, and the parent Institute and shall be filed as per the respective ordinances, regulations and rules of the Institute.
7. In case the co-guide leaves his organization, or retires the guide may accept a co-guide from the same organization, provided the new co-guide is recognized. In case such a co-guide is not available, the entire responsibility of successful completion of the programme shall lie with the guide. If the retired person remains with the institute or with other institute of HBNI, as an emeritus scientist, he/she will be permitted to continue as co-guide till the period of his/her new assignment.
8. In addition to the recognized research supervisor, a student may be advised by a Technology Advisor, who need not be recognized Ph.D. Guide, from the other Institute. The Technology Advisor shall be a person of high repute in the area of research being pursued by the student. The Technology Advisor shall be chosen by a research guide, with consent of the Director, ICT and Director of the respective constituent Institution of the HBNI.

## **DEPARTMENT OF ATOMIC ENERGY (DAE) -DGFS PROGRAMME FOR M.Tech DEGREE**

Institute of Chemical Technology (ICT) is one of the Institutes recognized by the Department of Atomic Energy for its DGFS programme. It is a Two-Year DAE Graduate Fellowship scheme for Engineering Graduates and Post-Graduates in Physics for joining M. Tech. in specified specializations

Qualifying Degrees and Disciplines:

B.E/ B. Tech. in Mechanical, Chemical, Metallurgical, Civil, Electrical, Electronics, Computers, Instrumentation and Engineering Physics.

OR

M. Sc. in Physics, Chemistry, Biosciences, Geology, and Geophysics.

A minimum of 60% (aggregate) of a CGPA of 7.01 in the qualifying degree is an essential requirement. Science candidates are further required to have secured a minimum of 60% (aggregate) in B.Sc. also. Screening and Selection of candidates is through a written test or on the basis of valid GATE score. Applications for the programme are to be submitted to DAE as per advertisement in National newspaper and Employment News. (for details visit website: <http://oces.hbni.ac.in> )

### **Qualification Criteria for Admission and Registration for Ph.D. (Tech.) in Chemical Engineering and the Course Requirements**

| Category | Basic Qualification for Admission   | Course requirement  |
|----------|---|---|
| 1        | B. E. in Chemical Engineering /B. Tech. in Chemical Engineering / B. Chem., Eng. / B. Tech. in Chemical Technology (ICT) in first class or equivalent                   | Course work for M. Chem. Engg. (credit courses) (to be completed in 2 semesters from the date of admission) and courses related to nuclear Engineering (to be completed in 3 semesters from the date of admission)<br>Nuclear and Reactor Physics Nuclear Chemical Engineering Chemistry of Radionuclides Material Science in Nuclear Engineering |
| 2        | Bachelors degree in Chemical Engineering or Chemical Technology in first class or equivalent + Course work in BARC training school                                      | 5 courses including one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 2 semesters from the date of admission)   |
| 3        | Bachelors degree in Mechanical / Mettalurgical Engineering (except Chemical Engineering / Technology) I first class or equivalent + Course work in BARC training school | 10 courses and one Seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 4 semesters from the date of admission)  |
| 4        | Masters degree in Chemical Engineering / Masters degree in Chemical Technology (ICT) in first class or equivalent   | courses related to nuclear Engineering (to be completed in 2 semesters from the date of admission)<br>Nuclear and Reactor Physics Nuclear Chemical Engineering Chemistry of Radionuclides Material Science in Nuclear Engineering   |
| 5        | M. Tech. Degree in Chemical Engineering from HBNI + Course Work in BARC training school   | Minimum number as required by UGC guidelines.   |
| 6        | M. Tech. Degree in any branch of Engineering (except Chemical Engineering / Chemical Technology) from HBNI + Course Work in BARC training school                        | 4 - 5 courses and one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC. (to be completed in 2 semesters from the date of admission)   |
| 7        | M. Sc. Degree in Physics / Chemistry /Mathematics in first class or equivalent + Course work in BARC training school  | 8 - 10 courses and one seminar in Chemical Engineering to be decided by the supervisor and approved by the coordinator followed by PGPC.(to be completed in 4 semesters from the date of admission)   |

|   |  |   |
|---|--|---|
| 8 | M.Sc. Degree in Physics / Chemistry / Mathematics in first class                               | 14 Credit courses and one seminar in Chemical Eng. courses (to be completed in 4 semesters from the date of admission) courses are listed below in category 3.3   |
| 9 | M. Sc. Degree in Physics / Chemistry /Mathematics in first class (Rank in top 3 in University) | <p>(i) Typically 20 courses comprising of: (to be completed in 4 years from the date of admission)</p> <p>B. Chem. Eng. Level courses (Credit courses)<br/>Applied Mathematics - I, II and III<br/>M. E. B. C.<br/>Momentum and Mass transfer</p>   |
|   |  | <p>Energy Engineering<br/>Chemical Engineering Operations<br/>Heat Transfer<br/>Chemical Reaction Engineering<br/>Design and Analysis of Experiments<br/>M. Chem. Eng. Level Courses (Credit courses)<br/>Advanced Momentum transfer<br/>Advanced Heat Transfer<br/>Advanced Mass Transfer<br/>Advanced Reaction Engineering<br/>Thermodynamics of Phase Equilibrium<br/>Advanced Separation Processes<br/>Advanced Reactor Engineering<br/>Nuclear Engineering Level courses (courses)<br/>Nuclear and Reactor Physics<br/>Nuclear Chemical Engineering<br/>Chemistry of Radionuclides<br/>Material Science in Nuclear Engineering</p> |

## UGC NETWORKING RESOURCE CENTRE IN CHEMICAL ENGINEERING

### **Preamble**

The spectacular and consistent performance of the Department of Chemical Engineering, having been rated as number one for past several decades, including 2009-10, which has been revealed by the international surveys, has earned it much recognition, accolades and awards. Apart from the Centre of Advanced Studies, the UGC has recognized it further by awarding the first ever Networking Resource Centre in Chemical Engineering, in October 2008, to undertake following activities:

1. Research, training and skills development of the faculty and research scholars through periodic discussion, workshop and summer/winter schools
2. Capacity building by adopting faculty and Departments for augmenting their research skills and to mentor them
3. Hosting and facilitating researcher from other institutes/universities to carry out key experiments
4. Augmentation of information resource facility of the Department to provide quality research information to other institutes/researchers
5. To enhance and build state of the art in-house research infrastructure and other research facilities in the Department.

The rapidly changing face of research in chemical engineering offers new opportunities for integrating new research areas within its fold and several workshops, courses, demonstration experiments, regular experiments and seminars have been organized by the Centre. The objective of many of these activities is to acquaint the Chemical Engineering community especially from academic institutions with the emerging face of our discipline, and the how to meet the new challenges that it poses to contribute at the leading edge. The idea is also to train the academic fraternity so that overall research and development in chemical engineering is promoted. The interactive workshops also aim at initiating a dialogue on how the new face of Chemical Engineering can be used to address problems, specific to us as a growing nation. The vacation periods, long weekends and week-long programmes are undertaken which are publicized on the homepage of the institute and also communicated to all chemical engineering Departments. Not only the ICT faculty but experts from other institutes, industries, and visiting professors from foreign universities have delivered lectures and interacted with young faculty.

### **Rules and Guidelines for Registration of Teachers from UGC and/ Or AICTE Approved Colleges for Ph. D.**

Under this programme the Centre is required to generate human resource and keep on organizing seminars, workshops, and laboratory sessions for the benefit of teachers and students. One of the primary requirements is to create qualified doctoral degree holding teachers who in turn will generate quality students. Following are the salient points of this programme proposed by the Centre.

1. Teachers who have been in the services of any Engineering and Technology Colleges approved by the UGC/AICTE are entitled for registration for Ph D with Chemical Engineering faculty of the ICT.
2. A minimum service of two years and permanent placement in the concerned college will be the basic criterion.
3. The teacher must have a consistently good academic record with minimum first class in bachelors and/or masters degree from a reputed university.
4. The college management should undertake the responsibility of releasing the person for experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Co-ordinator of the Centre. A bond in this regard should be signed and approved by the Director, ICT.
5. Teachers can work in the ICT labs during vacations and holidays and after their office hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Co-ordinator of the Centre.
6. A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who are part time but put in at least 3 months full time work in a year in the labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teacher a hands-on experience and bringing them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.
7. The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in international journals with decent impact factors. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.

8. The registered teachers as Ph D students should not register any Masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this effect to avoid degeneration of this novel concept into a Ph D by unscrupulous means.
9. If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate could be eligible for the UGC fellowship under our SAP programme.
10. Teachers with Masters Degree will be allowed to undertake benefit of this scheme. Those who have got Bachelor's Degree ought to take leave from their colleges in order that they complete the theory part of the Masters Programme for direct Ph.D.
11. All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. programme.

## **CENTRE OF EXCELLENCE FOR PROCESS INTENSIFICATION (CoE-PI)**

The Centre for Process Intensification for Process Industries (CoE-PI) under TEQIP in the Institute of Chemical Technology (ICT), Mumbai, aims to be a world leader in the field of conceptual process design, Process Integration and Process engineering. The methodologies will allow environmentally friendly process design with the most efficient use of raw materials and energy with affordable cost. The Centre shall be dedicated to the development of design methodologies in the field of process intensification and process integration. The Centre aims to change process design practice, by developing and disseminating new process design and integration methods for clean and efficient use of raw materials and energy at lower cost. The process intensification and integration will be based on interactions between elements of the chemical and physical processes that take into account during the process design the material and energy flows. The resulting integrated processes exploit synergies between the system components, leading to processes with superior performances, in terms of their raw materials consumption, energy demand, process economics, environmental impact and sustainability. The centre has identified 13 research projects which have great relevance with present industrial practice.

## **DEPARTMENT OF CHEMISTRY**

### **VISION:**

To be a nationally recognized chemistry resource centre, making noteworthy academic contribution and undertaking contemporary and relevant research.

### **MISSION:**

- To induct and retain competent and committed personnel
- To produce quality publication and proficient man power
- To collaborate with Industry and academic centres of excellence
- To undertake sponsored projects of national and social relevance
- To participate in state and national level educational programmes
- To conduct relevant and contemporary M.Sc. and Ph.D. programmes

### **PROFILE:**

Department of Chemistry was established in 1951 to cater the responsibility of teaching basic chemistry. The department shoulders the responsibility of conducting chemistry courses, theory as well as practical for undergraduate programmes of all the three branches, viz., B.Chem.engg., B. Tech. and B. Pharm. The Department also offers admission to Ph.D. (Science) Chemistry, Ph.D. (Science) Biotechnology, Ph.D.(Tech.) chemical engineering programme and the intake

of students varies based on the vacancies with the faculty members. Department has started M.Sc. (Chemistry) two years course by papers with an intake capacity of 20 from Academic Year 2010-2011. The programme is accredited by the Royal Society of Chemistry, UK in 2014.

The Department is active in teaching, research and industrial collaborative work. Considering the contributions the department has been recognised by the university Grant Commission, under special Assistance Programme (SAP), Departmental Research Support (DRS-II) and DST-FIST Programme . Through this programme the Department has 10 Ph.D. fellowships to offer. The faculty members are actively engaged in research areas of current relevance. The research work carried out in the department is funded by the research projects sponsored by funding agencies like UGC, CSIR, DAE, IGCAR and DST Some of the faculty members are carrying out research in collaboration with reputed organisation from both India and abroad. In the last five years the department has published more than 200 research publications in international journals of repute with an average impact factor of more than two. The work is also recognised well in term of large number of citations(more than 5000) The faculty member is actively involved in several extra-mural academic activities, like the Indian National Chemistry Olympiad, National Initiative for Undergraduate Sciences (NIUS).Currently the department has 45 Ph.D. and 37 M.Sc. Students. The Students who have obtained doctoral degrees from the Department get attractive placements in industries and research institution. The research students of the department assist the faculty in conducting undergraduate courses. This helps them in their personal development.

The Department is equipped with sophisticated instruments such as FTIR, UV-VIS, Spectrophotometer, GC-MS, gas chromatographs, HPLC, Zetameter, Viscometer, Microwave synthesizer, Digital polarimeter, computer workstation ,Electrochemical Workstation, Vapour pressure reactor ,supercritical carbon dioxide reactor, surface area analyser, high pressure reactors, Tensiometer, X-Ray diffraction unit The Department has several endowments through which, experts from various leading research institutes working in frontier areas in Science and Technology are invited for lectures and interaction.

## **DEPARTMENT OF GENERAL ENGINEERING**

### **VISION :**

To contribute to India through excellence in technical education and research,to serve as a valuable resource for industry and society.

### **MISSION :**

To impart basic knowledge of General Engineering subjects to students to enable them for better understanding of practical applications to various industrial problems.

To undertake collaborative projects which offer opportunities for long term interaction with academia and industry.

To provide an excellent educational experience for its students .This experience includes an emphasis on the technical communication, teamwork and life-long learning skills in which graduate engineers held to excel at the workplace and in society.

General Engineering Department of the Institute was established in the year 1954 and is involved in teaching undergraduate as well as postgraduate students of the institute. The Department is running a full time master's program M. E. in Plastics Engineering from 1972, the course is accredited by National Board of Accreditation. Students having basic qualification in Mechanical, Production, Plastic/ polymer, Electrical and chemical engineering and technology are eligible for admission to this course. The course deals with Processing of plastics, composites, Design of Molds, Design of processing tools/ machinery, CAD, CAM and CAE and testing, Polymer applications in various fields of engineering, Development of new materials for industrial as well as domestic applications. Apart from laboratories such as workshop, electrical and electronics, applied mechanics and strength of materials, the Department has provision for special facilities of processing of plastic and polymer composites, testing of plastics, and computer aided design

and drawing laboratories. These laboratories cater to the needs of the under graduate and post graduate students of the Department and institute. The Department has plastic processing equipment such as micro-processor controlled injection molding machine with molds of standard mechanical test pieces, blow molding machine, rotational molding machine, and single screw extruders well as twin screw extruder. Department is having licensed CAD and CAE software such as Mold flow, Pro-engineer and Solid Works with high end computer facilities. The department is having a facility of Plastic Testing such as impact tester, MFI tester, hardness tester etc. GATE qualified candidates of M.E.in Plastics Engineering receive AICTE fellowships. Candidates can register for Ph. D. in Plastics/ Mechanical/ Production/ Electrical/ Civil/ Engineering either full time or as the external candidates (Only for teachers/ employees from Government organizations). In recent years the enrollment for Ph D in the department is increasing. Presently number of PhD students enrolled in the department in various branches are: 29 in Mechanical Engineering, 06 in Civil Engineering, 03 in Plastic Engineering, 11 in Electrical Engineering and 04 in Electronics Engineering etc. Also 02 students had received National Doctoral Fellowship. Department is also having industry sponsored Ph D student from BASF and Master's student from TVS motors. Recently the department faculty has been awarded one **national patent on Water Resistant Phosphogypsum Composition**. Department is also involved in execution of Research project funded by DST and Rajiv Gandhi Science and Technology Commission of Govt of Maharashtra.

Department is having specialized teaching faculty from mechanical, plastics, production, civil, electrical and electronics branches. Most of the faculty are guides for the masters and doctoral programs of the institute. Besides teaching and research, departmental faculty members are holding associate dean position and member of various inhouse committees to help the management of the institute. Students can take up research in multidisciplinary areas.

Department is also responsible for Civil and Electrical maintenance of infrastructure such as institute buildings, laboratories, faculty quarters and hostels. Department is actively involved in the development of the new buildings and infrastructural facilities in the campus. Department looks after Liasoning with BEST and Municipal Corporation for all the requirements of the institute upto some extent.

## DEPARTMENT OF MATHEMATICS

### VISION:

The Department of Mathematics, Institute of Chemical Technology, Mumbai, aims to be an internationally leading mathematics department that will offer innovative educational and research programmes in mathematical sciences and their applications in science and technology

### MISSION:

In pursuit of its vision, the department wish to (i) offer courses and programs that will ensure that the student get practical knowledge in mathematics which will be relevant to the society (ii) provide a modern educational environment for instruction and research (iii) create an environment for learner to engage in solving real-world problems (iv) contribute to the understanding of complex mathematical structures and their applications.

### RESEARCH AREAS:

The Department of Mathematics has research expertise mainly in the areas of Computational Fluid Dynamics and Mathematical Modeling, Momentum, Heat and Mass Transfer in Newtonian Non-Newtonian Fluids, Singular Perturbation Theory, Optimization Techniques, Statistical Analysis, Data Analysis, Mathematical Biology, Species Distribution Modeling, Applied Functional Analysis, Differential Equations, and Mathematical Pedagogy.

### ABOUT THE DEPARTMENT:

The Department of Mathematics, ICT Mumbai was established in the year 1944. Since its inception it caters to all the courses related to mathematics, statistics and computer programming

of UG and PG programmes in ICT. The department offers a 2 year M.Sc. programme in "Engineering Mathematics". This programme was started in the academic year 2012-2013 under the UGC INNOVATIVE SCHEMES and is very unique in its nature. The department also has Ph.D. programme in Mathematics covering diverse area of research. The community of the department consists of six faculty members, with broad areas of expertise related to mathematics and statistics, and two support staffs. The department has modern and high level computational facilities, consisting of 50 All-In-One Computers, Two Servers, one workstation and a High Performance Computing (HPC) cluster. All computers are installed with software such as MATLAB, Mathematica, SPSS, R Python and Sagemath etc. The department has strong research collaborations with other renowned academic institutions and industries. Students are also provided with industrial internship and placements opportunity. The faculty members of the department are member of Board of Studies of several institutes. The department regularly arranges workshops, conferences and seminars for students and teachers of other colleges. Faculties are also engaged in various training programmes in mathematics and statistics across the country.

## **DEPARTMENT OF PHYSICS**

### **VISION :**

To evolve ourselves to understand and know the basics of science and to utilise it to develop newer technologies for the benefit of society and aptly be a part of this Esteemed Institution and to strive to infuse momentum to the Department so that this Department becomes one of the best learning centres of basic sciences and strive to make significant contributions to academia as well as to industry.

### **MISSION :**

Innovatively follow newer ways of teaching and upgrade curricula to infuse enthusiasm of knowing in students.

Work in diverse fields and multidisciplinary themes so that learning and knowledge is gained by faculty to move further to fulfil the vision.

Strive to get funds to upgrade and maintain present research facilities.

### **To create POLYMER and NANO SCIENCE CENTRES.**

Department of Physics at the ICT has the distinction of being one of the earliest Departments in the Institute. It was started as Optics Section in 1935 which was subsequently changed as Physics Section in the Second Five Year Plan and then to Department of Physics under MUIC. Department of Physics undertakes undergraduate and post graduate teaching in Physics. The Department participates in 1<sup>st</sup> year B. Tech. and B. Chem. UG teaching - theory and practical's. The Department offers electives at 2<sup>nd</sup> year B. Tech. and B.Chem. The faculty of the Department undertakes a full course of Physical Methods of Analysis for all branches of M. Tech. students in both the semesters which also serves as a credit course for majority of Ph.D. students. The Department has started M.Sc (Physics) (Material Science) course from year 2014 with emphasis on the Material Science with maximum strength as 20.

The Department is one of the participating Departments of Centre of Advanced Studies in Physio-Chemical Aspects in Textiles, Fibres, Dyes. The Department has made significant contributions in the field of Material Science (Study of Polymer/Polymer composites and nano-composites and their various properties), Solar Thermal Applications, Nano-aided Drug Delivery. The research in Colour assessment of dyed textiles and colour perception is also carried out in this Department. Currently 20 doctoral students are working on various topics. Faculty members have actively participated and attended national and international seminars / workshops and presented their papers. A good number of papers are published in peer reviewed journals. Faculty members have research projects from industry and various government funding agencies. Two patents on solar thermal system are also filed recently.

### **THRUST AREAS OF RESEARCH:**

The faculty of the department undertakes research in many aspects of materials sciences:

- Polymer Morphology/Orientation, Polymer composites / nanocomposites.
- Nano-drug delivery.
- Polymer dispersed Liquid crystals, Plasma processing of Materials.
- Statistical Mechanics applied to Chemical Engineering Thermodynamics.
- Synthesis and functionalization of CNTs, Energy storage, Super-capacitors.
- Magnetism, transport properties of quantum magnets and Low-temperature Physics.
- Computational Physics, Phase Transitions in Polymers and Gels.
- Solar Thermal applications, Solar Energy Harvesting.

### **NAME OF THE PROGRAMMES OFFERED:**

#### **M.Sc. Physics (Material Science)**

Ph. D. in Physics (thrust area being Polymer/Polymer Composites and nanocomposites, Solar thermal, Coloured assessment of dyed fabric and study of geometric attributes of Colour, Nanoparticle synthesis, Theoretical aspects of Chemical Engineering, Probing Magnetic properties of materials, Carbon nanotubes, Graphene, Fuel cell electrocatalyst, Energy storage and Electrochemical sensors)

#### **Admission Criteria for the programmes offered**

For M.Sc. Physics: Eligibility: B.Sc. in Physics with minimum 55% or Selection based on Entrance exam. For Ph.D. Physics: Eligibility: M.Sc. in Physics with minimum 55% or Selection based on Entrance exam.

#### **Courses handled:**

First and Second Year B. Chem. Engg. and B. Tech. – Applied Physics I and II, Statistical Mechanics and Colour Physics

Courses for M. Tech. and M.Sc. (Textile Chemistry)

## **DEPARTMENT OF DYESTUFF TECHNOLOGY**

#### **VISION :**

To build world class programmes of excellence in education and research in the specialized area of Dyestuff Chemistry and Technology for the benefit of society through problem solving competencies

#### **MISSION :**

The department aspires to be one of the world's top color chemistry departments by 2020. It will do so by-

Providing knowledge and skilled based training at undergraduate and postgraduate level by designing, teaching, and periodically upgrading a color chemistry and technology syllabus in line with current anticipated trends in industry and academia

Pursuing world class research in colorants and related areas-basic textile and leather coloration, functional colorants, organic process technology and specialty chemicals

Proactively developing and maintaining close interaction with national and international research laboratories, universities and chemical industries

#### **ABOUT**

Dyestuff technology department started functioning in 1944 under the stewardship of Prof. K. Venkataraman, the then director of Institute of Chemical Technology (ICT, formerly known as

UDCT), University of Mumbai and is an outstanding department, an epitome of skill, talent, hard-work and success. Highly experienced scientists and scholars such as Prof. B.D. Tilak, Prof. S. V. Sunthankar, Prof. S. Seshadri, and Prof. D.W. Rangnekar have enriched this department and led to its progress. More than 1000 undergraduate students and over 450 postgraduate students have passed out from this technology department.

### **RESEARCH FOCUS**

Late Prof. K. Venkataraman's pioneering work on synthetic dyestuff chemistry, natural colorants, structural elucidation, spectral studies and his books on "The Chemistry of Synthetic Dyes" are still popular and treated as Bible for Dyestuff Chemists and Technologists around the world and was translated in more than 14 languages.

The outstanding research work carried out in the department has created permanent global impact on dyestuffs and allied industries especially the Indian Dyestuff Industry. Publications of popular informative volumes, over 1000 publications of national and International repute, have led the progress of the department.

Presently the department is more focused on functional colorants, colorants for non textile applications and high performance pigments. These include the synthesis of laser colorants, colorants for optical information storage devices, colorants for ink-jet printing, colorants for biology, colorants for solar energy conversion and synthesis of various high performance pigments. The department is getting ready to meet the ever changing and demanding global challenges in the field of colorants and allied fields.

### **HIGHLIGHTS OF COURSE**

The dyestuff technology department is a unique centre of learning. It offers a very advanced curriculum which produces new generation of talented color technologists as well as bright researchers. The curriculum as well as on going research synchronizes with the latest industrial and academic developments. This has led to a high quality of industry-academia relations for better technology and products.

B.Tech. course in Dyestuff and Intermediates emphasizes Chemistry, Technology and Engineering of organic intermediates and colorants. We equip our student with knowledge of manufacturing processes, analytical techniques and laboratory synthesis with scaling up skills.

M.Tech. course in Dyestuff Technology mainly focusses on the latest process technology and business management. The main aim of this course is to provide better knowledge for the student and prepare him for entrepreneurship. Thos also have 4-6 months industry internship and an extensive project work.

Our curriculum envisages developing entrepreneur skill as well as research attitude. During the curriculum students are exposed to the general engineering skills like, tool design, electrical appliances, machine drawing, etc. In addition, a detailed study of basic sciences (Physics, Mathematics, and chemistry) and chemical engineering aspects are covered. Humanity related subjects like Industrial economics, Chemical Process Economics and Industrial management are also covered during the four-year course of B.Tech. Students also have the opportunity to develop the soft skills like effective communication and software programming languages.

We have a very good track record of 100 % placement for both B.Tech. and M.Tech. course. Our department have produced about 100 first generation entrepreneurs.

## **PERFUMERY AND FLAVOUR TECHNOLOGY**

### **VISION :**

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

### **MISSION :**

To educate students and professional in the area of perfumery and flavor, 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 organizations and universities.

We are using flavor and fragrances since last five millennia. The first individual chemist known to history was from the second millennium BCE in Mesopotamia. As an area of modern chemical industry, it is low profile compared with the pharmaceutical and petrochemicals. Yet it is a multi-billion dollar, global industry that impacts on everyone's life in the developed world.

Synthetic chemistry is developing new methodologies, so that materials which are important and available at high cost can be made available at an affordable price. Analytical work on examination of new exotic materials may also lead to the identification of exciting new compounds.

Currently the organizations like Givaudan, IFF, Firmenich, Symrise and Quest International have turnovers greater than \$ 16 billion. The geographical distribution of sale of flavour and fragrance materials is surprising with North America 30.6 %, Asia Pacific 27 % and Western Europe 23.2%. The key factor is the development of global economy. The market for flavour and fragrance is a mirror of the affluence of a society. With this we can hope that billions can share the living standards of the developed world which in turn shall open the market for the flavour and fragrance industry.

Perfumery and Flavor Technology is a unique course in Institute of Chemical Technology. It started in the year 1990-91. Major funding agencies for this course are FAFAI and ICEOFF and Dr. R.Y. Mantri Endowment. We are offering two fellowships of Rs. 10,000 per month for the Masters course in Perfumery and Flavours.

## **DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY**

### **VISION :**

- To be the world class centre of excellence in teaching and research in chemical processing of fibres, textiles, apparels and the key areas of technical textiles with ecological, social and ethical responsibility, meeting the crucial needs of trained man power and technological solutions of Indian textile industry.

### **MISSION :**

- To be the leader in offering top class human resources by training them from bachelors to doctorate level degrees in core competence i.e. in chemical processing of fibres, textiles and apparels.
- To train the industrial technicians as per the demands of the industry, upgrading their skill to meet international quality standards.
- To conduct industrially relevant research and provide technical guidance aimed at offering technology solutions and enhancing competitive edge to the industry.

Almost 5 years ago, in 1933, when the Indian Textile Industry was progressing in full swing in cities like Mumbai, and Ahmedabad, other industries were not even born. It was the time Sir VitthalChandavarkar was the Vice Chancellor of University of Mumbai and also the Chairman of Textile Mill Owners' Association.

Thus, the Department of Fibres and Textile Processing Technology (FTPT), formerly known as Textile Chemistry Section, has the unique distinction of being the first discipline with which this institution started. The Department conducts B.Tech. course with an intake capacity of 34, which is highest among all the B.Tech. courses of ICT. The course involves study of chemistry and manufacture of fibres, their chemical processing such as bleaching, dyeing, printing and finishing. It further encompasses the study of chemistry as well as application of various kinds of chemicals, dyes, thickeners, and finishing auxiliaries which are used in chemical processing of textile fabrics and garments. It also involves knowledge of green chemistry, biotechnology and nanotechnology with special reference to chemical processing of textiles.

The post graduate courses of M. Tech. in Fibres and Textile Processing Technology both, Regular- 2 years and Sponsored 3- Years, M.Sc. in Textile Chemistry, Ph.D. (Tech.) in Fibres and Textile Processing Technology, Ph.D. (Sci.) in Textile Chemistry and Ph.D. (Sci.) in Chemistry attract a large number of students and so far more than 2500 graduates and 500 post graduates have passed out from this Department. The faculty of the Department has good interaction with the industry. Several industries and institutions have signed MOUs for research collaboration with us. Under these MOUs we offer Ph.D. and M. Tech. courses to their scientists. A number of industries have been benefited by the technical advice given by the faculty. There have been a number of industrial and governmental research projects in which problems of mutual interest are investigated and the students as well as the Department have been benefitting by this interaction. The Department is recognized as Centre of Advanced studies in "Physicochemical aspects of Textile, Fibres, Polymers and Dyes" presently in Phase VII, since 1962. It was also recognised under the MODROB scheme of UGC. The Department is has been funded by TEQIP. In the month of December 2012, the Department got recognised as DST-FIST funded Department for the second time. The department also played an important role in evaluating TUFS under Ministry of Textiles, GOI. Also, the Department organizes guest lectures by industry experts under different endowment programmes. An international conference 'Texsummit' was organized by the Department recently, in December 2012. The faculty is engaged in high quality fundamental as well as applied research and they have got over 1000 publications in Indian and International journals as well as reputed fellowships to the credit from recognized institutions in India and abroad.

After the globalization of the markets with border-less trade, textile manufacturing activities are shifted to country like India which is fast developing economy. Textile being one of the fundamental needs of human being, it is a mother industry, next to only agriculture sector, involving over 60 million people. Today, the business is fast growing and will soon touch around US\$ 100 Billion. However, in the border-less trade many multinational brands are competing and the critical area of chemical processing of textile fabrics and garments requires tremendous amount of consolidation in terms of well trained manpower which can keep pace with latest technological operations and demand of stringent quality parameters in shortest delivery time giving competitive edge to the manufacturers. There is a huge shortage of Textile Processing graduates in the core textile industry as well as in multinational and reputed Indian manufacturers of dyes, chemical and auxiliaries. Thus the scope for graduates and postgraduates of this Department is enormous and such a demand with every passing day will only be rising given that consumption of apparels and technical textiles in India and abroad is increasing at galloping rate. The Department has a twinning programme with Ethiopia for past 4 years and is involved in helping Ethiopean extile Industires Development Institute (ETIDI).

## **DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY**

### **VISION :**

Establishing a center of excellence to provide demand driven, value-based and quality technical education to make India a developed country through socio-economic transformation

### **MISSION :**

Creating an atmosphere to deliver fundamental knowledge in Food Engineering and Technology for the students to fulfill the need of all segments of society and the environment.

Starting from the classroom teaching and simultaneously creating a multi-disciplinary platform capable of conducting research, technology development and solving industrial challenges.

Providing leadership and training personnel for the benefit of the industry and society complying with overall activity towards economic growth of the country.

This Department is the first in our country to offer specialized education in Food Technology.

The B. Tech. (Food Eng. and Tech.) course trains the students in chemical, biochemical and microbial aspects of foods. Students are also taught how high quality products can be prepared and preserved for storage and how the storage conditions might affect the quality. The course gives adequate engineering inputs for large-scale production. The training also includes development of food products, manufacturing processes, design of factory with proper quality assurance system established. Economic feasibility of marketing such products is also taught during the course. The major research interests include carbohydrate chemistry and technology with focus on Indian traditional foods; and food microbiology related to quality, safety and application of new technology. Prof. D.V. Rege Centre has been founded to cater to the needs of Food Technology Research.

The UGC has recognized the Department as Centre of Advanced Studies in Food Engineering and Technology, under which 15 SAP fellowships are awarded per year. A new course assisted by DBT in Food Biotechnology has been in place since 2009-10 with 10 M. Tech. GATE fellowships. The Department also participates in two interdisciplinary M. Tech. courses - Perfumery and Flavour Technology, and Bioprocess Technology.

## **DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY**

After WW-II, the Department for Technology of Oils, Fats and Waxes was started, which was headed by Professor J. G. Kane, whose work on non-edible oils was exceptional. The Department has been in forefront for its quality education. Several of its alumni have been industrialists and reputed educationists.

### **VISION :**

Harnessing innovative skills of its faculty and students to achieve a global leadership position in Oils, Oleochemicals and Surfactants Technology, while nurturing a culture of trust and healthy competition in order to serve the critical professional needs of industry and society.

### **MISSION :**

To pursue world class programs of excellence in education and research in specialized areas of Oils, Oleochemicals and Surfactants Technology relevant to the sustainable development of process industries that require problem solving competences in these core areas of knowledge.

### **What is this Technology?**

The lipids are a class of biochemical compounds, many of which occur naturally in plants and animals. The lipids constitute a very large class of compounds, many of which play essential roles in organisms. Among the most important lipids are fats and oils, waxes, steroids, terpenes, fat-soluble vitamins, prostaglandins, phosphoglycerides, sphingolipids, and glycolipids. Phospholipids, for example, occur in all living organisms, where they are a major component of the membranes of most cells. The main use of fats commercially is in the production of soaps and other cleaning products. Oleochemicals are chemicals derived from biological oils or fats. The hydrolysis or alcoholysis of oils or fats form the basis of the oleochemical industry. The formation of basic oleochemical substances like fatty acids, fatty acid methyl esters (FAME), fatty alcohols, fatty amines and glycerols are by various chemical and enzymatic reactions. Intermediate chemical substances produced from these basic oleochemical substances include alcohol ethoxylates, alcohol sulfates, alcohol ether sulfates, quarternary ammonium substances, monoacylglycerols (MAG), diacylglycerols (DAG), structured triacylglycerols (TAG) and sugar esters. The importance of these chemicals is thus evident.

This Department has been pioneering in the field of Oil Technology. The curriculum has been designed to provide an in-depth knowledge of chemistry and technology of oils and fats, and their industrial applications. Career opportunities exist in oils mills and refineries, oleochemicals, soap and detergent manufacturing industries, surfactants and specialty chemical manufacture producing auxiliary chemicals, Paints. Cosmetics, Perfumery and raw materials

used in the above industries. Several short and long term projects instituted by sponsoring bodies for process/product development have been supervised by the faculty as part of their routine research activity.

It also participates in M. Tech. in Perfumery and Flavour Technology, Green Technology and Bio-Process Technology.

## **DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

### **VISION :**

To be a globally recognized premier educational and research Centre with world class facilities, adopting international best practices, focused on the integration of science and technology in the areas of Drug Discovery, Drug Delivery, Organic Process Research and Herbal Healthcare Products

### **MISSION :**

To achieve the best in pedagogy and research, through creation of a dedicated team of faculty and state of art research facility, to develop skilled manpower and innovative cost effective technology to support national healthcare programmes.

This Department offers two distinct programmes - Pharmaceutical Technology and Pharmacy. The Pharmaceutical Technology course or the B. Tech. programme, earlier B.Sc. (Tech.), deals with the technology of manufacture of drugs and pharmaceuticals. It has all the ingredients for a solid foundationin basic sciences, mathematics, computation and chemical engineering. B. Tech. (Pharmaceuticals and Fine Chemicals) was started in 1943, and today the course is B.Tech. (Pharmaceutical Chemistry and Techonology). Basic science subjects like chemistry, mathematics and physics are dealt with in depth, while students are introduced to subjects of biochemistry, microbiology and pharmacology. Strong background knowledge of chemical engineering including chemical reaction engineering, unit operations, separation processes, instrumentation and process control, and stoichiometry is imparted to synergise with the major focus, which is on manufacturing process technology and chemistry of API, intermediates and fine chemicals and dosage form technology. Several distinguished alumni and many first generation renowned industrialists had their training in this Department. The aim of the B.Tech. (Pharma) course is to develop complete professional technologists/entrepreneurs for the active pharmaceutical ingredients (API) and pharmaceutical industry.

The B. Pharm. Course at ICT, started in 1958, was the first course of this kind in the state of Maharashtra. The course involves a detailed study of Pharmaceutics, Pharmaceutical and Medicinal chemistry, Pharmacology, Pharmaceutical Analysis and Pharmacognosy. The goal is to enable an understanding of the science of drugs and drug actions. The course is supported with in depth courses in basic sciences namely, organic chemistry, inorganic chemistry, physical chemistry, biochemistry, microbiology, maths and other relevant subjects like biotechnology, forensic pharmacy, management. The focus is on development of an expertise in the chemistry of drugs, drug effects, dosage regimen, drug toxicity and interactions with adequate knowledge of the synthesis of drugs, principles of drug formulation design and evaluation and regulatory requirements.

The UGC has recognized the Department as Centre of Advanced Studies in Pharmaceutical Science and Technology with supernumerary Single Girl Child Fellowships. Besides, fellowship are also accorded under various other government projects with individual faculty. The Department has also received support under the DST-FIST programme. Many industry sponsored projects, both National and International, are also currently in progress. Modern equipment, instruments and infrastructure are available for research. The faculty is highly active and has filed patents in a variety of areas including NCE's and drug delivery. The Department also participates actively in three inter disciplinary courses of ICT namely M.Tech. in Bioprocess

Technology, M.Tech. in Perfumery and flavour Technology and M.Tech. in Green Technology. M. Tech. in Pharmaceutical Biotechnology has been started since last year with 10 GATE fellowships. The programme is multi-disciplinary.

## DEPARTMENT OF POLYMER AND SURFACE ENGINEERING

### **VISION :**

Empowering skills and knowledge about latest Research in the field of Polymer and Surface Coating Technologies.

### **MISSION :**

To Pursue world class Programs on Excellence in Education and Research in the area of Polymer and Coating Technology for the sustainable development of Industries that require trouble shooting competencies in these core areas of knowledge.

The Department of Polymer and Surface Engineering has undergone changes in its nomenclature and was established in 1946. Earlier it was known as Paints, Pigments and Varnishes (PPV) Section and was steered in the beginning by none other than Professor N.R. Kamath, a famous chemical engineer, graduate of first batch of B.Sc. (Tech.), in 1936, who later migrated to IIT-Bombay as Head of Chemical Engineering and Deputy Director. The B.Sc. (Tech.) courses in plastics and paints technologies were started in 1946 and have been popular throughout the world. Several small and medium industries covering plastics, paint, printing ink, adhesive, sealers and allied industries have been founded by the graduates of the Department and maintained excellent connectivity with industry.

The Department runs two B. Tech. programmes: Polymer Engineering and Technology, and Surface Coating Technology.

### **What is Polymer Science and Engineering**

Polymers are macromolecule that contains many monomer units, typically tens of thousands to millions. While many polymers occur naturally as products of biological processes, synthetic polymers are made by chemical processes that combine many monomers, together in chains, branched chains, or more complicated geometries. Starch, cellulose, proteins, and DNA are examples of natural polymers, while polyolefins, nylon, PET, ABS, Teflon, and PEEK etc. are examples of the synthetic variety. Both classes possess a number of highly useful properties that are as much a consequence of the large size of these molecules as of their chemical composition. Although most synthetic polymers are organic, that is, they contain carbon as an essential element along their chains, other important polymers, such as silicones, are based on noncarbon elements.

The rapid pace of advances in polymers, particularly after World War II, has been remarkable and the birth of this discipline in ICT in mid-1940s was timely. Synthetic polymers are so well integrated into the fabric of society that we take little notice of our dependence on them, whether it is health, medicine, clothing, transportation, housing, defense, energy, electronics, employment, space, and trade. Without a doubt, synthetic polymers have large impacts on our lives.

Although progress in polymer science and engineering can be considered ground-breaking, opportunities are abundant for creating new polymeric materials and modifying existing polymers for new applications; depolymerization and polymer recycling; oxo and biodegradable polymers; nano-composites, and the like. Scientific understanding is now replacing empiricism, and polymeric materials can be designed on the molecular scale to meet the ever more demanding needs of advanced technology. The possible control of synthetic processes by biological systems is promising as a means of perfecting structures. New catalysts offer the opportunity to make new materials with useful properties, and the design of new specialty polymers with high-

value-added applications is an area of rapidly increasing emphasis. Theory, based in part on the availability of high-speed computing, offers new understanding and aids in the development of improved techniques for preparing polymers as well as predicting their properties. Analytical methods, including an array of new microscopic techniques particularly suited to polymers, have been developed recently and promise to work hand-in-hand with theoretical advances to provide a rational approach to developing new polymers and polymer products. The field of polymer science and engineering therefore shows no sign of diminished vigor, assuring new applications in medicine, biotechnology, electronics, and communications that will multiply the investment in research many times over in the next few decades.

The education provided to the students is the blend of practice and theory related to polymer science and engineering. The students learn to develop systems which are economically feasible and environmentally acceptable.

### **What is Surface Coating Technology?**

Coating applied on other surface of the materials for the decoration and protection. The surface coating change aesthetic properties such as color, gloss, texture and functional properties like resistance to wear, chemical attack, permeability, weathering resistance without changing the bulk properties. These materials includes coatings, adhesives, sealants, varnishes, enamels, lacquers. Initially coating were solvent based however, the volatile organic compounds are compelling to develop ecofriendly coatings like water based, high solids coatings, powder coatings and radiation curable coatings. In general, organic coatings are based on a vehicle, usually a resin, which, after being spread out in a relatively thin film, changes to a solid. This change, called drying, may be due entirely to evaporation (solvent or water), or it may be caused by a chemical reaction, such as oxidation or polymerization. The materials providing the hiding are the opaque materials called pigments, dispersed in the vehicle, contribute colour, opacity, and increased durability and resistance.

The physical, chemical and mechanical properties of a material surface determine its applicability in many technical devices. Numerous applications could not be realized without the use of surface modifications, coatings and thin film technology. Therefore, the need for efficient and effective methods of surface modification is becoming increasingly evident to allow the production of far superior products in terms of wear resistance, corrosion protection, enhanced biocompatibility, thermal insulation, improved optical and altered electronic properties. Coating technologies of particular interest include physical and chemical vapor deposition, thermal spraying, electrochemical deposition, sol-gel-syntheses, and plating. Surface modification includes directed energy techniques such as ion, electron and laser beams as well as etching procedures and thermo-chemical diffusion. Beyond that, mono-layers (e.g. SAM, Langmuir-Blodgett) have attained high significance in preparing thin films to modify biomedical surfaces. Recent novel techniques to prepare patterned surfaces (e.g. nano-imprint lithography, micro-contact printing) have proven their potential for the fabrication of integrated circuits and bioactive implants. Thus, this course offers an exciting field of study.

New trends related to surface engineering and coating technology for the synthesis of functional materials surfaces including novel fabrication methods, materials and applications, new characterization techniques as well as numerical simulation and modeling are some of the areas of research.

The Department is supported by UGC, DST, BRNS, etc.

## **DBT-ICT CENTRE FOR ENERGY BIOSCIENCES**

### **VISION:**

We aspire to be an internationally leading Centre for education to create industry ready manpower, generating new economic growth by providing solution to national and international agenda, and through world class translational research in the field of biosciences and industrial biotechnology.

**MISSION:**

To provide outcome based education, and research infrastructure to become global leader in creating industry ready manpower, and sustainable technologies based on biosciences and industrial technology for development, in joint efforts with industries, academia and business at national and international level.

The DBT-ICT Centre for Energy Biosciences (DBT-ICT-CEB) is a unique place that integrates basic and translational science capabilities for bioprocess development and scale up. Funded by the Department of Biotechnology, Ministry of Science and Technology, India, the Centre was established and formally inaugurated in May 2009. Established at a total cumulative cost equivalent to more than USD 15 million, the Centre is a part of the Institute of Chemical Technology (ICT) at Matunga, Mumbai, which is a deemed to be University under Section 3 of UGC Act 1956. The Centre was set up as a result of vision and efforts of Dr. M. K. Bhan, Secretary DBT and Dr. RenuSwarup, Advisor, DBT, and functions under the leadership of Dr. G. D. Yadav, Vice Chancellor, ICT. The projects and technical programs at the Centre are coordinated by Prof. Arvind Lali. The Centre is focused primarily at developing biotechnologies for deriving biofuels and other products from renewable resources for reducing India's rising dependence on petroleum and cut down greenhouse gas emissions. The Centre believes in building multidisciplinary capacity for development of integrated technology packages.

The Centre successfully completed its first phase of five years in 2013 and was awarded an extension of five years by the Department of Biotechnology with the extended mandate of upscaling and upgrading the platform technologies developed during the first phase. The 10 Ton/day biomass pilot plant set up by Industry has successfully validated all segments of the novel DBT-ICT Lignocellulosic Ethanol Technology in a continuous non-stop flow mode from biomass size reduction to ethanol fermentation. The technology is at present being taken to commercial scales by different oil marketing companies. The Centre has developed a highly competent working groups in the area of Synthetic biology, Fermentation technology, Green/Chemical catalysis, Algal technologies, Enzyme engineering and technology, Separation technologies. These groups have developed a range of globally competitive cutting edge technologies that are at present being translated to demonstration and commercial scale plants.

With an outstanding achievement in the first phase, the second phase progressed to develop platform technologies for conversion of all domestic, industrial and agricultural wastes to renewable products (fuel, food, feed, material, energy and chemicals) using smart combinations of chemical and biological technologies. Also during the second phase, the Centre has developed an integrated biorefinery concept through multi-product processing using chemical or biological routes that are being taken up for technology transfer or scaleup. The Centre has expanded its state-of-art facility and procured several high-end equipment's and instruments that not only leads to high level contemporary research but also an accelerated development of several more scalable technologies based on the knowledge base generated. The Centre having completed its second phase in 2018, aims to continue the work in an intensive mission mode for innovative research and translation of developed technologies.

The Centre for Energy Biosciences has attracted a large number of industrial and academic collaborations as a result of its reputation of conducting cutting edge research and delivering viable and scalable solutions to the biotech industry. The Centre is also part of several national and international academic collaborations (Indo-UK, Indo-Australia, Indo-German, Indo-US and several national projects) with grants amounting to more than 10 million USD under various RandD schemes floated by Ministry of Science and Technology, Government of India. The technologies developed at the DBT-ICT Centre have been secured through patent filings across the world. A number of technologies have been already licensed to industries for pilot and commercial scale plants.

## CENTRE OF GREEN TECHNOLOGY

### **Inception of the centre of Green Technology**

The Green Technology center at ICT was incepted in 2005 under the potential for excellence scheme of the University of Mumbai. Subsequently, ICT has become a Deemed University and an Elite Center of Excellence in 2008 . Since then the Green Technology programmes are conducted solely by Centre of Green Technology, ICT.

### **VISION :**

To become a globally recognized Green Technology Centre of excellence, through illustrious academic contributions at the national and international level.

### **MISSION :**

- To promote the objectives, principles and outcome of green processes and products.
- To transmit research outcome to industry for making processes and products environmentally benign.
- Human resource development with awareness of environment and hazard related issues.
- To undertake sponsored projects of national relevance.
- To get quality publications in peer reviewed journals, national and international forums for the benefit of scientific community and society.

### **Programmes offered by the Centre of Green Technology**

The center of Green Technology offers an interdisciplinary M. Tech. programme of both part and full time. It also conducts a Ph.D. programme. GATE and GPAT qualified candidates admitted to the M Tech. programme are eligible for fellowships.

### **Highlights of the Green Technology programmes**

Both the post graduate and Ph.D. programmes in Green Technology at ICT encompass the aspects of green and sustainable science and technology. As the programmes are interdisciplinary, the post graduate and doctoral students get ample experience and support across the Departments of ICT both in terms of research and curricular courses . This broad spectrum expertise is a unique and valuable advantage .

Areas in which research projects carried out in the Centre of Green Technology

- Development of catalysts for energy efficient and green processes
- Synthesis and application of nanomaterials
- Green Technology in pharmaceuticals and drug synthesis
- Conversion of multi-step synthesis into cascade engineered synthesis
- Synthesis of biodegradable chemicals and materials
- Application of biotechnology for sustainability
- Synthesis of safe and benign chemicals with minimum impact on environment.
- Process equipment design and operation to achieve sustainability
- Green Technology for hazard free, benign processes and products

It is hoped that the centre emerge as a model school encompassing various disciplines of science, engineering and technology with the common goal of sustainability and environmental viability.





# COURSES OF STUDY AND CRITERIA OF ELIGIBILITY FOR ADMISSION

## Department of Chemical Engineering Upgradation of CE Lab & Safety Audit



Through the generous donation of Batch of 1968, Chem Engg lab has been upgraded. Safety Audit was conducted in various laboratories in Chem. Engg. Dept. on Dec 13, 2019 by Mr. Nilesh Vani, Safety Officer and Dr. Hubert Fernandes, Head R&D, Fevicol Adhesives, Pidilite Industries

## Department of Chemistry



Organic Chemistry Undergraduate laboratory and three research laboratories renovated to state-of-art standards

- Major upgrading of equipments for UG, PG practicals as well as research facilities
- Three GC units reinstalled for UG and PG practicals with generous support from UAA
- Raman spectrometer acquired and installed

## Food Engineering and Technology Department



Inauguration of Prof. D.V. Rege Centre for Advanced Food Technology on August 15, 2019 by Dr. G. N. Warke, Managing Director of Hi-Media Laboratories Pvt Ltd. The centre was renovated by the generous donation from Hi-Media.



High-Tech FET Conference Room was created with the generous donation by Fine Organic Industries Ltd. in the memory of Mr. Ramesh M. Shah, Founder of Fine Organic Industries Ltd. It was inaugurated by Prof. J.S. Pai, Executive Director, PFNDI on November 16, 2019.

## Department of Dyestuff Technology



Construction of new  
NMR laboratory





## **STUDY IN INDIA PROGRAMME FOR FOREIGNERS AND QUOTA FOR NRI, PIO AND OTHER FOREIGN NATIONALS STUDENTS**

1. The Ministry of Human Resources Development (HRD) has approved 'STUDY IN INDIA' programme to attract foreign students to pursue higher education in India. ICT, Mumbai has participated in this program for Undergraduate and Postgraduate programs and NRI, PIO and other foreign students are encouraged to apply for these programs through <https://www.studyinindia.gov.in/>.
2. NRI, PIO and other foreign national students interested for Under Graduate Programmes at ICT are also informed to apply through [www.mahacet.org](http://www.mahacet.org).
3. NRI, PIO and other foreign national students interested for Post Graduate (Masters and Doctorate).
4. Foreign students having their own fellowship can also apply.
5. For Programmes at ICT, Students are also informed to apply through [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)

### **3.1 COURSES OFFERED**

#### **BACHELOR'S COURSES [See Section 3.2 for details]**

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

- a) 70% for State of Maharashtra and
- b) 30% for All India (all States and Union Territories including Maharashtra)

#### **Admissions to B.Pharm.:**

100% for State of Maharashtra.

#### **Courses Offered**

1. Bachelor of Chemical Engineering (B.Chem.Engg.)
2. Bachelor of Pharmacy (B. Pharm.)
3. Bachelor of Technology (B. Tech.) in
  - a. Dyestuff Technology
  - b. Fibres and Textiles Processing Technology
  - c. Food Engineering and Technology
  - d. Oils, Oleochemicals and Surfactants Technology
  - e. Pharmaceutical Chemistry and Technology
  - f. Polymer Engineering and Technology
  - g. Surface Coating Technology

#### **MASTER'S COURSES [See Section 3.3 for details]**

#### **Courses Offered**

1. Master of Chemical Engineering (M. Chem. Engg.)  
(Full-time 2-years)
2. Master of Pharmacy (M. Pharm.) (Full-time 2-years) in  
Pharmaceutics  
Pharmaceutical Chemistry  
Medicinal Natural Products
3. Master of Technology (M. Tech.) (Full-time 2-years) in  
Dyestuff Technology  
Fibres and Textile Processing Technology  
Food Engineering and Technology  
Oils, Oleochemicals and Surfactants Technology  
Pharmaceutical Chemistry and Technology  
Polymer Engineering and Technology  
Surface Coating Technology  
Green Technology  
Perfumery and Flavour Technology

4. Master of Technology (M. Tech.) (Full-time 2-years) in  
Bioprocess Technology  
Food Biotechnology  
Pharmaceutical Biotechnology
5. M.E. (Plastic Engineering) (Full-time 2-years)
6. M.Sc. (By Papers) (Full-time 2-years) in  
Chemistry  
Engineering Mathematics  
Physics (Material Science)  
Textile Chemistry

#### **DOCTORAL COURSES [See Section 3.4 for details]**

1. Ph.D. (Tech.) and DIRECT Ph.D. (Tech.) in  
Bioprocess Technology  
Chemical Engineering  
Dyestuff Technology  
Fibres and Textile Processing Technology  
Food Biotechnology  
Food Engineering and Technology  
Green Technology  
Nanotechnology  
Oils, Oleochemicals and Surfactants Technology  
Pharmacy@  
Pharmaceutical Technology  
Polymer Engineering and Technology  
Surface Coating Technology  
Plastic Engineering  
Perfumery and Flavour Technology  
**Ph.D. (Tech.) in**  
Civil Engineering  
Electrical Engineering  
Electronics Engineering  
Mechanical Engineering  
**@ Ph.D. (Tech.) in Pharmacy has following four branches:**  
Pharmaceutics  
Pharmaceutical Chemistry  
Pharmacology  
Pharmacognosy
2. Ph. D. (Sci.) in  
Biochemistry  
Biotechnology  
Chemistry  
Physics  
Mathematics  
Food Science  
Textile Chemistry

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

**POST GRADUATE DIPLOMA [See Section 3.5 for details]**

POST GRADUATE DIPLOMA (2 years - 4 semesters)

[conducted on Saturdays and Sundays only]

Chemical Technology Management

**HIGHLIGHTS:**

1. A candidate, who fails to accept an offer of admission to any of the courses, made by the Institute, for whatever reasons, forfeits his/her claim for admission for that academic year (1<sup>st</sup> July to 30<sup>th</sup> June) and the seat may be offered to the next eligible candidate in the order of merit. The acceptance of the offer implies payment of the prescribed fees and deposit along with relevant documents by the date specified in the offer letter.
2. The Institute shall not enter into any correspondence with the candidates in the matter related to admission, such as incomplete forms, non-submission of necessary documents in given time period, non-submission of online fee of necessary application along with filled application form, absenteeism at the institutional tests for entrance tests for Master's and Ph D programmes, for any reason, non-acceptance of the offer of admission to any of the courses in given time period, etc.
3. No age limit is prescribed for admission to the course.

All Rights regarding the admissions at the ICT are reserved with the Vice Chancellor, ICT.

**3.2 ADMISSION TO BACHELOR'S COURSES**

**ADMISSION TO FIRST YEAR OF FOUR YEARS- B.CHEM.ENGG., B.Tech.**

**(SEVEN BRANCHES) AND B.PHARM. DEGREE COURSES IN ICT, MUMBAI**

**(FOR THE ACADEMIC YEAR 2020-21)**

All these admissions will be conducted by the, Govt. of Maharashtra.

Please Refer Govt. of Maharashtra Brochure of Admissions and their Website

**FOR ALL DETAILS. ([www.mahacet.org](http://www.mahacet.org))**

Admission quota for B.Chem. Engg. / B.Tech. (seven branches) / B.Pharm. courses are as follows.

I [B.CHEM.ENGG. AND B.Tech. (SEVEN BRANCHES)]

The availability of seats for these courses shall be as

- a) 70% for State of Maharashtra and
- b) 30% for All India (all States and Union Territories including Maharashtra)

II [B.Pharm.] 100% for State of Maharashtra

**BACHELOR'S COURSES OF STUDIES AND INTAKE CAPACITY**

All UG courses are post - HSC / XIIth Std. Four - Year Semesterised Degree Courses.

1. Bachelor of Chemical Engineering (B.Chem. Engg.) : 75 Seats
2. Bachelor of Technology (B.Tech.) in
  - (a) Dyestuff Technology : 20 Seats
  - (b) Fibres and Textiles Processing Technology : 34 Seats
  - (c) Food Engineering and Technology : 16 Seats
  - (d) Oils, Oleochemicals and Surfactants Technology : 16 Seats
  - (e) Pharmaceuticals Chemistry and Technology : 18 Seats
  - (f) Polymer Engineering and Technology : 16 Seats
  - (g) Surface Coating Technology : 16 Seats
3. Bachelor of Pharmacy (B.Pharm.) : 30 Seats

**FEES, CONCESSIONS, CANCELLATIONS AND REFUND:**

The candidates admitted during 2020-21 are required to pay fees as prescribed by the State government (subject to revision by the State Government).

The institutional fees to be paid by all the admitted candidates are as follows :

| Sr. No. | Details         | Fee for 1 <sup>st</sup> Year (Rs.)** |
|---------|-----------------|--------------------------------------|
| 1.      | Library Deposit | 2,000/-                              |
| 2.      | Fees            | 83,350/-                             |
|         | <b>TOTAL</b>    | <b>85,350/-</b>                      |

\*Note: Fees of candidates belonging to SC/ST/OBC/VJNT/SBC is reimbursed by Govt. of Maharashtra.

\*\*These are only indicative figures and likely to be changed by 10%.

### 3.3 MASTER'S DEGREE PROGRAMMES

#### COURSES OF STUDIES, ADMISSION CRITERIA AND CAPACITY

- (1) All Full- time Master's courses (other than M. Sc. courses) are Two-Years programmes [partly by papers (two semesters) and partly by thesis (two semesters)] with fellowship for GATE/ GPATqualified candidates.
- (2) All M.Sc. courses are Two- Years programmes (four semesters) only by papers. (See Table 3.3.1 below for different courses).

TABLE 3.3.1 : MASTERS DEGREE COURSES

| SR. NO. | DEGREE                                      | BRANCH   | Intake |
|---------|---|--|--------|
| 1.      | M. Chem. Engg.<br>(Full-time 2-years)       | Chemical Engineering                           | 30     |
| 2.      | M. Tech.<br>(Full-time 2-years)             | Dyestuff Technology                            | 18     |
| 3.      |   | Fibres and Textile Processing Technology       | 18     |
| 4.      |   | Food Engineering and Technology                | 18     |
| 5.      |   | Oils, Oleochemicals and Surfactants Technology | 18     |
| 6.      |   | Pharmaceutical Chemistry and Technology        | 18     |
| 7.      |   | Polymer Engineering and Technology             | 18     |
| 8.      |   | Surface Coating Technology                     | 18     |
| 9.      | M. Pharm.<br>(Full-time 2-years)            | Pharmaceutics                                  | 6      |
| 10.     |   | Pharmaceutical Chemistry                       | 6      |
| 11.     |   | Medicinal Natural Products @                   | 6      |
| 12.     | M.E. (Plastic Engg.)<br>(Full-time 2-years) | Plastic Engineering                            | 18     |
| 13.     | M. Tech.<br>(Full-time 2-years)             | Bioprocess Technology #                        | 30     |
| 14.     |   | Food Biotechnology #                           | 10     |
| 15.     |   | Pharmaceutical Biotechnology #                 | 18     |
| 16.     |   | Green Technology                               | 30     |
| 17.     |   | Perfumery and Flavour Technology ¥             | 18     |

|     |   |                            |    |
|-----|---|----------------------------|----|
| 18. | M.Sc.<br>(Full-time 2-years)<br>(by papers) | Chemistry                  | 20 |
| 19. |   | Engineering Mathematics    | 20 |
| 20. |   | Physics (Material Science) | 20 |
| 21. |   | Textile Chemistry          | 20 |

- \* The actual number to be admitted will be subject to number of fellowships requirement of individual department and availability of Research Guide.
- ◆ Tentative seat distribution given is for intake (Sr. No. 1-12 in Table 3.3.1) of GATE/ GPAT qualified candidates eligible to receive AICTE Fellowship (Subject to sanction). The Vice-Chancellor, ICT reserves the right to change the course/ branch wise distribution of these fellowships, based on availability of the candidates.  
The selection for the AICTE Fellowships shall be based on the GATE/ GPAT score (Level 1- Table 3.3.2) and the performance in the Institute's written test (Level 2 and Level 3 - Table 3.3.2), as the case may be.
- @ "Medicinal Natural Products" includes the subjects related to Pharmacognosy and Pharmacology.
- # The seat distribution given is for intake (Sr. No. 13, 14 and 15 in Table 3.3.1) through Graduate Aptitude Test-Biotechnology (GAT-B) 2020 conducted by Department of Biotechnology (DBT) and the admission of allotted seats will take place at ICT. The detailed procedure for filling the application form, payment of application fee and uploading of required documents/certificates in the prescribed format, is given at: [www.rcb.res.in/GATB](http://www.rcb.res.in/GATB). A non-refundable and non-transferable application fee of Rs. 1000/- is payable online by General/ OBC candidates and Rs. 500/- by SC/ ST/ EWS/ Differently abled candidates. The admitted candidate will receive fellowship as per DBT guidelines.
- ¥ (Sr. No. 17 in Table No. 3.3.1) Subject to availability of fellowships from PAFAI, ICEOFF. Also, no fees concessions, as applicable to Reserved Category Students, can be availed and full fees need to be paid by the candidate. (See Section 3.3.1.8).  
No fellowships are available to any of the M. Sc. Courses by papers (Sr. No. 18 - 21 in Table 3.3.1). The number of seats mentioned against full time 2 yrs. course (Sr. 1 to 17) are the intake as per the AICTE guidelines.  
Reservation policy will be applicable as per the norms by Govt. of Maharashtra.

### 3.3.1 ELIGIBILITY CRITERIA FOR THE ADMISSION (INDIAN NATIONALS)

#### 3.3.1.1 M.CHEM. ENGG., M.Tech.

(Sr. Nos. 1-8 Full time 2-years in Table 3.3.1)

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

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

- i. B.Chem.Engg. or B.E. / B.Tech. in Chemical Engineering/ Biotechnology/ Biochemical Engg.
- ii. The candidate should have passed any one of the following Bachelor's/Master's degrees of ICT or any equivalent examination of IIT/NIT or any University recognized by the UGC, with 60% marks in aggregate or equivalent CGPA). [55% marks in aggregate or equivalent CGPA for the backward class candidate].

- B.Chem. Engg./ B. Sc.(Tech.)/B.Tech - in any branch of Chemical Technology/ Biotechnology.
- iii. B.Tech. (Textile Processing/ Textile Chemistry), B.Sc. (Tech.) (Textile Processing / Chemistry), B.Text. (Textile Chemistry), B.E. (Textile Chemistry or Textile Technology), B.Tech. (Textile Chemistry or Textile Technology), B.Tech. (Fibres and Textile processing Technology/ Fibre Technology) with significant emphasis on chemical processing of textiles.
- iv. B.Tech. (Food Engineering and Technology) or B.E./ B.Tech. in Food Engineering/ Food Technology/ Food Science/ Food Process Technology/ Food Process Engineering, or B.Sc. (Tech.) (Food Technology).
- v. B.Sc. (Tech.) (Oils Technology) or B. Tech. (Oils, Oleochemicals and Surfactants Technology).
- vi. B.Sc. (Tech.) (Pharmaceutical and Fine Chemicals) or B. Tech. (Pharmaceutical Chemistry and Technology) or B.Pharm. or equivalent B.Tech. with Pharmacy background only.
- vii. B.Tech. (Polymer Engineering and Technology/Surface Coating Technology); B.Sc. (Tech.) (Technology of Plastics or Technology of Paints), B.Sc. (Tech.) (Rubber Technology), B.E. (Polymer Engg. / Plastic Engg.), B.E. (Petrochemical Engineering/ Technology).
- viii. B.Sc. (Tech.) (Paints Technology / Plastics Technology), B.Tech. (Paints Technology / Polymer Engineering and Technology), B.CheM.Tech. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology), B.E. (Paints Technology / Polymer Engineering / Polymer Technology / Plastic Technology / Plastic Engineering).

### **3.3.1.2 M.Tech. (DYESTUFF TECHNOLOGY)**

**(Sr. No. 17 Full time 2-years in Table 3.3.1)**

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

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

### **3.3.1.3 M. PHARM**

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

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

The following THREE specializations are offered for M. Pharm.

Pharmaceutics (Sr. No. 9 in Table 3.3.1)

Pharmaceutical Chemistry (Sr. No. 10 in Table 3.3.1)

Medicinal Natural Products (Sr. No. 11 in Table 3.3.1)

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

**3.3.1.4 M.E. (PLASTIC ENGINEERING)****(Sr. No. 12 Full time 2-years in Table 3.3.1)**

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

**3.3.1.5 M.Tech. BIOPROCESS TECHNOLOGY****(Sr. No. 13 Full time 2-years in Table 3.3.1)**

Candidates\*\* with B. Chemical Engineering, B. Pharmacy; B. Tech./ B.E. in Chemical Engineering/ Chemical Technology/Food Engineering and Technology/ Food Engineering/ Food Technology/ Food Process Technology/ Food Process Engineering/ Dairy Technology/ Biotechnology/ Biochemical Engineering/ biomedical engineering/Pharmaceutical Technology/ industrial biotechnology, or any other equivalent degree\* of full four year duration of any University recognized by the UGC after HSC/HSSC/Std. XII, with 60% marks in aggregate or equivalent CGPA [55% marks in aggregate or equivalent CGPA for the backward class candidate]. Three year degree programs in these disciplines are not recognized for admission.

\* subject to clearance from the equivalence recognition committee of Institute of Chemical Technology

\*\* Internal distribution of the seats as per eligibility will be declared at the time of admission

The admissions will be done through Graduate Aptitude Test-Biotechnology (GAT-B) 2020 conducted by Department of Biotechnology. The details are given at: [www.rcb.res.in/GATB](http://www.rcb.res.in/GATB).

**3.3.1.6 M.Tech. FOOD BIOTECHNOLOGY****(Sr. No. 14 Full time 2-years in Table 3.3.1)**

The candidate should have passed B. Tech. degree in Food Engineering and Technology of the ICT or any other equivalent degree of any University recognized by the UGC of four- year degree course after HSC/HSSC/Std. XII, with 60% marks in aggregate or equivalent CGPA [55% marks in aggregate or equivalent CGPA for the backward class candidate]. OR B. Tech./ B.Sc. (Tech.)/ B. E. in Food Engineering and Technology/ Food Engineering/ Food Technology/ Food Science/ Food Process Technology/ Food Process Engineering/ Dairy Technology/ Biotechnology/ Biochemical Engineering/ Pharmaceutical Technology/ Oil Technology or any equivalent degree of full four year duration of any University recognized by the UGC. Three year degree programs in these disciplines are not recognized for admission.

The admissions will be done through Graduate Aptitude Test-Biotechnology (GAT-B) 2020 conducted by Department of Biotechnology. The details are given at: [www.rcb.res.in/GATB](http://www.rcb.res.in/GATB).

**3.3.1.7 M.Tech. PHARMACEUTICAL BIOTECHNOLOGY****(Sr. No. 15 Full time 2-years in Table 3.3.1)**

Candidates with B. Pharmacy; B. Tech. degree any branch of chemical technology of ICT or or any other equivalent degree of any University recognized by the UGC of four- year degree course after HSC/HSSC/Std. XII, with 60% marks in aggregate or equivalent CGPA [55% marks

in aggregate or equivalent CGPA for the backward class candidate]. B. Tech./ B.Sc. (Tech.)/ B. E. in Biotechnology/ Biochemical Engineering/ Pharmaceutical Technology, pharmaceutical technology, industrial biotechnology, or any equivalent degree of full four year duration of any University recognized by the UGC. B.E/B. Tech in Chemical Engineering, biochemical engineering, biomedical engineering; B. Chemical Engineering; Three year degree programs in these disciplines are not recognized for admission; MSc in biotechnology, life sciences, biochemistry, microbiology, molecular biology, microbial genetics, genetics and bioinformatics or equivalent thereof from any recognized university are eligible.

The admissions will be done through Graduate Aptitude Test-Biotechnology (GAT-B) 2020 conducted by Department of Biotechnology. The details are given at: [www.rcb.res.in/GATB](http://www.rcb.res.in/GATB).

### **3.3.1.8 M.Tech. (GREEN TECHNOLOGY)**

**(Sr. No. 16 Full time 2-years in Table 3.3.1)**

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

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

OR

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

### **3.3.1.9 M.Tech. (PERFUMERY AND FLAVOUR TECHNOLOGY)**

**(Sr. No. 17 Full time 2-years in Table 3.3.1)**

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

B.Chem. Engg./ B. Sc.(Tech.)/B.Tech - in any branch of Chemical Technology/biotechnology/ B. Pharm. OR M.Sc. (Chemistry, Biotechnology, Biochemistry).

### **3.3.1.10 M.Sc. (CHEMISTRY) BY PAPERS, FULL TIME 2-YEARS**

**(Sr. No. 18 in Table 3.3.1)**

- a) The candidates who have taken the post-H.S.C. 3-year degree course of Bachelor of Science with Chemistry as a major subject and Mathematics at H.S.C. level and passed the bachelor examination with at least 60% of the marks in aggregate of equivalent grade average. [55% for the backward class candidates only from Maharashtra State] are only eligible to apply.
- b) The candidates who have cleared the qualifying examination in one sitting will be preferred.
- c) The admissions will be done strictly on the basis of merit, based on the marks obtained in the qualifying entrance examination.

### **3.3.1.11 M.Sc. (ENGINEERING MATHEMATICS) BY PAPERS, FULL TIME 2-YEARS**

**(Sr. No. 19 in Table 3.3.1)**

The candidate should have passed B.Sc. with Mathematics/ Statistics or B.Tech./B.E. with at least four mathematics courses from a UGC/AICTE recognised university / Institute, and passed the qualifying examination with at least 55% of the marks in aggregate or equivalent CGPA (50% for

the students from reserved category) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred.

### **3.3.1.12 M.Sc. (PHYSICS) (MATERIAL SCIENCE) BY PAPERS, FULL TIME 2-YEARS (Sr. No. 20 in Table 3.3.1)**

The candidate should have passed with post-HSC 3-year degree course of B.Sc. with Physics at the third year of the course of any University recognized by the UGC; and passed the qualifying examination with at least 55% marks in aggregate or equivalent CGPA (50% marks in aggregate or equivalent CGPA for the backward class candidates) are eligible to apply. The candidates who have cleared the qualifying examination in one sitting will be preferred. B.E/B.Tech are also eligible after they clear our written test and an Equivalence Committee examines their syllabus and after the equivalence committee recommends.

### **3.3.1.13 M.Sc. (TEXTILE CHEMISTRY) BY PAPERS, FULL TIME 2-YEARS (Sr. No. 21 in Table 3.3.1)**

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

## **3.3.2 GRADUATE APTITUDE TEST IN ENGINEERING (GATE) AND GRADUATE PHARMACY APTITUDE TEST (GPAT) FOR THE AICTE FELLOWSHIPS**

- (1) The candidates seeking admission to the degrees of M.Chem.Engg./ M.Tech./ M.E.(Plastic Engg.) are required to qualify the Graduate Aptitude Test in Engineering (GATE) conducted at the national level.
- (2) The candidates seeking admission to M.Pharm. are required to qualify the Graduate Pharmacy Aptitude Test (GPAT) conducted at the national level. GPAT qualified candidates are also eligible for admission to M.Tech. (Green Tech.), M.Tech. (Perfumery and Flavour Technology) and M.Tech. (Oils, Oleochemicals and Surfactants Technology) courses.
- (3) Rules for availing GATE/ GPAT scholarships:
  - a. The Fellowships (subject to sanction and availability) are awarded only to the candidates who have passed the GATE/GPAT examination with valid score and on the basis of merit. NON-GATE/NON-GPAT candidates, if admitted, will not be eligible for these Fellowships.
  - b. The student must give an undertaking to the effect that he/she would not leave the course midway in order to be eligible to receive the Fellowship. During the course of studies, such student shall not receive any other fellowship/ honorarium/ emoluments, salary, stipend, etc., from any other source.
  - c. The student receiving the fellowship must secure minimum 60% marks or equivalent CGPA during the first and the second semester course work examinations to become eligible for continuation of the Fellowship at the existing rate during the second, third and fourth semesters, respectively.
  - d. Students are being cautioned that according to AICTE rules, a student who secures marks below 60% or equivalent CGPA in the first and/or second semester examination shall be eligible to get a reduced fellowship at the rate of Rs. 1,000/- p.m. only.

- e. In case of failure at the semester I examination, the fellowship shall be discontinued during the remaining period of the course. The fellowship may also be discontinued at any kind of misconduct by the student receiving the same. The fellowship once discontinued shall not be restored, even if a student secures 60% marks or equivalent CGPA at the second semester.
- f. The Fellowship amounts are normally disbursed every month after starting the Fellowship, subject to receiving the grant from the AICTE. The fellowship amount shall be disbursed only after receiving the appropriate grant from the AICTE.
- g. Documents required for fellowship
  - 1. GATE/GPAT Score card PDF copy
  - 2. SBI Bank Account
  - 3. Reserved Category Document
    - I. Cast Certificate
    - II. Cast Validity
    - III. Non-Creamy Layer Certificate
  - 4. Aadhar Card

The Institute shall not be responsible for non-receipt of fellowship grant from AICTE in time. The students will be required to give an Undertaking in writing to this effect.

### **3.3.3 ADMISSION CRITERIA**

Admission to the Master's courses (Sr. No. 1- 16 in Table 3.3.1) are available subject to the rules given below:

These admissions will be based on GATE/GPAT score, as applicable.

The first preference for admission to a course/ branch will be given to the candidates qualifying Bachelor's course with valid GATE/GPAT score, as applicable from the respective discipline (Level 1 - Table 3.3.2).

Only after filling the vacancies by such candidates, the candidates possessing a qualifying Bachelor's degree with valid GATE/GPAT score from any other course/branch will be considered for admission. (Level 2 - See Table 3.3.2)

Preparation of the merit list will be done at two levels, Level 1 and Level 2 separately.

**Level 1:** Merit list will be prepared on valid GATE/ GPAT score in the specified subject and no written test or interview will be conducted. Admissions through Level 2 shall be made only if any seats remain vacant after exhausting the merit list from Level 1.

**Level 2:** Merit list will be prepared on the basis of valid GATE score (in any subject) and written test (based on the syllabus specified by the Department for the course in which the candidate is seeking admission.) on the basis of 70:30 weightage. In case of interdisciplinary shift of course/ branch, interviews will be conducted to find the suitability of the candidate. There will be an external expert on the interview committee.

**Level 3:** Merit list will be prepared on the basis of written test alone (based on the syllabus specified by the Department for the course in which the candidate is seeking admission).

**NB:** It is Mandatory for Masters Students except M. Sc. Students to complete Certificate Course on "Safety and Risk Management" during their Masters Programme.

#### **Admission to the following three courses :**

- a. M.Tech. Bioprocess Technology (Sr. No. 13 Full time 2-years in Table 3.3.1)
- b. M.Tech. Food Biotechnology (Sr. No. 14 Full time 2-years in Table 3.3.1)
- c. M.Tech. Pharmaceutical Biotechnology (Sr. No. 15 Full time 2-years in Table 3.3.1)

will be based on the results of the Graduate Aptitude Test-Biotechnology (GAT-B) 2020 conducted by Department of Biotechnology. The details are given at: [www.rcb.res.in/GATB](http://www.rcb.res.in/GATB).

**Table 3.3.2: Criterion for Preparation of Merit List**

| Department conducting the written test         | Course in which the candidate is seeking admission        | Preparation of first Merit list |
|--|---|---------------------------------|
| Chemical Engineering                           | M.Chem.Engg.  | Level 1 and 2                   |
| Dyestuff Technology                            | M.Tech. in Dyestuff Technology                            | Level 2                         |
|  | M.Tech. in Perfumery and Flavour Technology               | Level 2                         |
| Fibres and Textile Processing Technology       | M.Tech. in Fibres and Textile Processing Technology       | Level 2                         |
|  | M.Sc. in Textile Chemistry                                | Level 3                         |
| Food Engineering and Technology                | M.Tech. in Food Engineering and Technology                | Level 1 and 2                   |
| Oils, Oleochemicals and Surfactants Technology | M.Tech. in Oils, Oleochemicals and Surfactants Technology | Level 2                         |
|  |   |                                 |
| Pharmaceutical Sciences and Technology         | M.Tech. in Pharmaceutical Technology                      | Level 2                         |
|  | M.Pharm.  | Level 1                         |
| Polymer and Surface Engineering                | M.Tech. in Polymer Engineering and Technology             | Level 1 and 2                   |
|  | M.Tech. in Surface Coating Technology                     | Level 2                         |
| General Engineering                            | M.E. in Plastics Engineering                              | Level 2                         |
| Chemistry                                      | M.Tech. in Green Technology                               | Level 2                         |
|  | M.Sc. in Chemistry  | Level 3                         |
| Mathematics                                    | M.Sc. in Engineering Mathematics                          | Level 3                         |
| Physics  | M.Sc. in Physics (Material Science)                       | Level 3                         |

The admission procedure for M.Chem.Engg., M.Tech. and M.Pharm. courses will be conducted after declaration of GATE/GPAT results. Candidates are requested to visit the institute website time to time for admission related matters. The candidates who are qualified with valid GATE GPAT score and appearing for final semester examination of the qualifying Bachelor's course must have obtained aggregate 60% of the marks or equivalent CGPA [55% of the marks or equivalent CGPA for the backward class candidate] at the end of 6th semester of the qualifying Bachelor's course. Only a provisional admission will be offered in such cases. For confirmation of admission, at a later date, however, overall 60% of the marks in aggregate or equivalent CGPA [55% of the marks in aggregate or equivalent CGPA for the backward class candidate] are necessary at the qualifying examination. The admission of candidate not fulfilling the admission criteria may be cancelled at any time during the course.

In case the candidate is admitted to a course/ branch other than the one in which s/he has obtained qualifying Bachelor's degree, s/he will have to undergo at least Three Make-Up Credit Courses (to be decided by the department admitting such candidate).

Preference will be given to candidates with valid GATE/GPAT score; however, Non-GATE/ Non-GPAT candidates may also apply. The merit of Non-GATE candidates will be totally based on the written test designed on the basic course, the syllabus of which shall be provided by each Department and displayed on the ICT website.

Design of written test would be such that basic knowledge in the discipline in which the candidate is seeking admission is tested. The syllabus for the written test will be available on the ICT website. The duration of test shall be 01 hour.

The final merit lists would be prepared on the basis of the criteria given above.

The group of selected candidates, unless selected on a specific project, may be given a presentation about all research activities in the department and available projects for selection of project/guide. The final allotment of the research guides will be done by the Departmental committee based on the merit and preferences given by the candidate and admissible rules and regulations. All these rules also apply to the candidates who shall be conducting their research work leading to a Degree under any type of sponsored projects (Govt. or Private).

The candidates who have cleared the qualifying examination in one sitting will be preferred.

### **3.3.4 APPLICATION PROCEDURE FOR MASTER'S COURSES**

For admissions at the ICT for any of the Master's courses, a candidate should apply online for admission applications. (website [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)). Click on Apply online for Admission 2020-21.

#### **3.3.4.1 ONLINE APPLICATION :**

**To Fill the online application form below steps are required:**

**Step: 1 » Personal Information**

Date of birth, Mobile No, Address, Caste, Category Details, Scanned colour Photo (Must be less than 40 kb, format-.jpg/.jpeg).

**Step: 2 » Education details starting with Xth, XIIth / Diploma, Graduation (if applicable)**

Carefully select between options of Percent System or Grade System

Year of Passing of each degree should be carefully specified

Board of Examination decides the normalization factor, so specify correctly

**Step: 3 » Entrance Exam Details**

Select entrance exam in which you will appear

Enter Application Id, Mobile Number, Roll No, Enter Grade / Percentage / Percentile / score / Rank correctly

**Step: 4 and 5 » Upload Scanned Documents**

All mark sheets and certificates

Category / caste document, migration, domicile certificate etc.

**Step: 6 » Payment details for admission form**

You can pay application form fee with online mode by using Credit/ Debit card or by Net Banking only.

After submitting the form, students can take a print of application form for their reference. **The candidate shall fill the appropriate application form/s, separate for each course of choice.**

All the relevant entries in the application form must be completed. Incomplete forms will be rejected and no correspondence will be made in this regard.

**Writing contact details such as permanent address, address for correspondence, Mobile No./ Telephone No./ and email address in the application form is essential. Do not leave any space blank.**

The duly filled form along with ATTESTED PHOTOCOPIES of required certificates to substantiate the claims made in their application form should be submitted online. The Admission application fees once paid is non-refundable and non-transferable under any circumstances.

Incomplete applications shall be rejected without entering into any correspondence with the applicant.

The candidates seeking admission at the ICT must submit ATTESTED PHOTOCOPIES of all the documents as given in Table 3.3.3 below along with the application form.

Attachment of any certificates will not be accepted separately after submission of the application form.

The candidates belonging to the reserved categories will be required to submit The Caste Certificate, the Caste/ Tribe Validity Certificate as applicable at the time of submitting the application form, failing which the category claimed, will not be granted and the candidate will be treated as a General candidate.

The candidates shall not attach a copy of any other certificate which is not asked for, such as certificates for participation in sports, cultural activities, etc.

If the candidate produces any certificate, which is not in Marathi, Hindi or English language, authenticated Marathi, Hindi or English version of the same, duly attested by a Gazetted Officer shall also be produced.

TABLE 3.3.3 : Documents to be attached with the Application form for PG admissions

| Sr. No. | Type of Candidate  | Attested true copies of documents to be attached along with application form  |
|---------|--|---|
| I       | All Candidates   | 1. SSC (Std. X) mark sheet,<br>2. HSC (Std. XII) mark sheet,<br>3. All Mark sheets of Bachelor's Course<br>4. Bachelor's degree certificate<br>5. College Leaving / Transfer certificate<br>6. Migration certificate (within one month after confirmation of admission)<br>7. Industrial / Teaching experience/ Gap Certificate, if any<br>8. GATE/GPAT score card. |
| II      | Backward class Candidates belonging to SC/ ST Categories   | Caste certificate, Caste/ Tribe Validity certificate, as applicable. (In addition to the documents mentioned in Sr. No. I)  |
| III     | Backward class Candidates belonging to VJ/ DT (NT(A))/ NT(B)/ NT(C)/ NT(D)/OBC/ SBC categories (Maharashtra State candidates only) | Caste certificate, Caste/ Tribe Validity certificate, Non Creamy Layer Certificate valid up to 31 <sup>st</sup> March 2021. (In addition to the documents mentioned in Sr. No. I)   |
| IV      | Backward Class Candidates belonging to OBC Category  | Cast Certificate issued by Central Government   |

### 3.3.5 RULES AND REGULATIONS ABOUT RESERVATION

Reservation in admission only for SC/ST/OBC categories on All India basis is applicable to all the Masters' courses M.Chem.Engg., M.Pharm., M.Tech. (all branches), M.E.(Plastic Engg.), M.Sc., as per the Government norms.

#### 3.3.5.1 CASTE CERTIFICATE AND CASTE/ TRIBE VALIDITY CERTIFICATE.

- a) Caste Certificate: The candidates belonging to the backward class category will be required to submit the Caste Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.
- b) Caste Validity Certificate: The candidates belonging to the SC/ST/OBC category will be required to submit the Caste/Tribe Validity Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.

### 3.3.6 FEES, CONCESSIONS, CANCELLATIONS AND REFUND

#### 3.3.6.1 FEES PRESCRIBED:

The candidates admitted during 2020-21 are required to pay fees as prescribed by the State government (subject to revision by the State Government).

The institutional fees to be paid by all the admitted candidates are as follows. These are only indicative figures and likely to be changed by 10% :

#### POST GRADUATE (M. CHEM. ENGG., M. Tech., M. PHARM., M. E. (PLASTIC ENGG.)

| Sr. No. | Details         | Fee for 1 <sup>st</sup> Year (Rs.) |
|---------|-----------------|------------------------------------|
| 1.      | Library Deposit | 2,000/-                            |
| 2.      | Academic Fees   | 60,000/-                           |
| 3.      | Other Fees      | 8,750/-                            |
|         | <b>TOTAL</b>    | <b>70,750/-</b>                    |

\*Note: Contingency amount for Masters students admitted under various fellowships will be as per the norms of respective sponsoring funding agencies. Other candidates have to pay the Contingency amount of Rs. 12,000 in addition to the above fees).

Fee structure for M.Sc. (Physics/Chemistry /Textile Chemistry) Courses at ICT for the academic year 2020-21.

| Sr. No. | Details         | Fee for 1 <sup>st</sup> Year (Rs.) |
|---------|-----------------|------------------------------------|
| 1.      | Library Deposit | 2,000/-                            |
| 2.      | Fees            | 50,000/-                           |
| 3.      | Other Fees      | 3,750/-                            |
|         | <b>TOTAL</b>    | <b>55,750/-</b>                    |

Fee structure for M.Sc. (Mathematics) Courses at ICT for the academic year 2020-21.

| Sr. No. | Details         | Fee for 1 <sup>st</sup> Year (Rs.) |
|---------|-----------------|------------------------------------|
| 1.      | Library Deposit | 2,000/-                            |
| 2.      | Fees            | 46,750/-                           |
| 3.      | Other Fees      | 3,750/-                            |
|         | <b>TOTAL</b>    | <b>52,500/-</b>                    |

Notes:-

- a) For confirmation of seat allotted, all candidates have to submit Demand Draft in favour of 'INSTITUTE OF CHEMICAL TECHNOLOGY, Mumbai', payable at Mumbai, of appropriate values as shown in above TABLE.
- b) Hostel Fees shall be charged additionally in case of candidates opting for hostel accommodation (the details are given in Section on Hostels).
- c) Vide letters no. जा.क्र./स.आ.स.क/मु.श./व्या.प.आ./अ.जा.फिरका/2015-16@5012 dated 17th August, 2015 received from Assistant Commissioner, Social Welfare Department, Mumbai city and जा.क्र./सकआ/शिक्षण/रतंस/2015-16 पुणे 2164 dated 11th August, 2015 received from Joint Director, Social Welfare Department, Pune, "All reserved category students for Master and Ph.D. who are getting any fellowship are not entitled to get Freeship/Scholarship from Government of Maharashtra."

### **3.3.6.2 LIBRARY DEPOSIT:**

Library deposit received from the students shall be refunded after successful completion of the course or after cancelling the admission, subject to producing Original Receipt. Unless there is any recovery, no deduction shall be made from the Library deposit. However, the amount of Library deposit shall be credited to institute, if the candidate does not apply for refund, within 3 complete financial years after the student actually leaves the institution; or, within 3 complete financial years after the date of successful completion of the course, whichever is earlier.

### **3.3.6.3 REIMBURSEMENT OF TUITION FEE:**

Candidates claiming concession under the categories of EBC and sons and daughters for teaching and non-teaching staff of primary, secondary and higher secondary schools shall pay entire fee as applicable at the time of admission and subsequently candidates have to apply to the respective authorities for reimbursement of tuition fees. The quantum of reimbursement received by the institute from the concerned authorities shall be disbursed to the candidate.

### **3.3.6.4 CANCELLATION OF ADMISSION AND REFUND OF FEES:**

Candidate who has been admitted to ICT may cancel admission by submitting an application in duplicate, in the prescribed Proforma - E and request for refund of fees. The refund of fees as applicable shall be made in due course of time. It is made clear that such application for cancellations will be considered if and only if the admission has been confirmed by paying the prescribed tuition fee and other fees in full and by submitting all the necessary original documents. Refund shall be made after deduction of cancellation charges as shown below -

| Sr. No. | SITUATION  | REFUND   |
|---------|--|--|
| 1       | Request received before the date of start of academic session.             | Entire fee less Rs.1000/-  |
| 2       | Request received after the date of start of academic session.              | Entire fee less the total fee for one month.<br>(Tuition, development, other and hostel fee) |
| 3       | Request received after 30 days from the date of start of academic session. | No refund<br>(except Library Deposit)  |

Notes:

- 1) Academic session means start of lectures, which will be displayed on the ICT website and Notice Board.
  - 2) For calculation of amount on the pro-rata basis, one month shall be treated as one unit.
- All Rights regarding the admissions at the ICT are reserved with the Vice Chancellor, ICT.**

## **3.4 DOCTOR OF PHILOSOPHY (Ph.D.) PROGRAMMES**

### **3.4.1 COURSES OF DOCTORAL STUDIES**

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

TABLE 3.4.1: DOCTORAL (Doctor of Philosophy) DEGREE COURSES

| No. | DEGREE                      | COURSE   |
|-----|-----------------------------|--|
| 1.  | Ph.D. (Tech.) in Technology | Bioprocess Technology                          |
| 2.  |                             | Chemical Engineering                           |
| 3.  |                             | Dyestuff Technology                            |
| 4.  |                             | Fibres and Textile Processing Technology       |
| 5.  |                             | Food Biotechnology                             |
| 6.  |                             | Food Engineering and Technology                |
| 7.  |                             | Green Technology                               |
| 8.  |                             | Nano Technology                                |
| 9.  |                             | Oils, Oleochemicals and Surfactants Technology |
| 10. |                             | Perfumery and Flavour Technology               |
| 11. |                             | Pharmacy@                                      |
| 12. |                             | Pharmaceutical Technology                      |
| 13. |                             | Polymer Engineering and Technology             |
| 14. |                             | Surface Coating Technology                     |
| 15. |                             | Plastic Engineering                            |
| 16. |                             | Civil Engineering                              |
| 17. |                             | Electrical Engineering                         |
| 18. |                             | Electronics Engineering                        |
| 19. |                             | Mechanical Engineering                         |
| 20. | Ph.D. (Sci.)                | Biochemistry                                   |
| 21. |                             | Biotechnology                                  |
| 22. |                             | Chemistry                                      |
| 23. |                             | Food Science                                   |
| 24. |                             | Mathematics                                    |
| 25. |                             | Physics  |
| 26. | Ph.D. (Tech.)               | Textile Chemistry                              |
| 27. |                             | Agro Chemical Engineering                      |
| 28. |                             | Petrochemical Engineering                      |
| 29. |                             | Lipid Engineering                              |
| 30. |                             | Energy Engineering                             |
| 31. |                             | Polymer and Materials Engineering              |

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

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

Candidates admitted to Ph.D. (Tech.) in Technology (Sr. No. 1 - 14) conduct research under the recognized faculty from the Department of Chemical Engineering, all Departments of Chemical Technology, DBT-ICT Centre for Energy Bio-sciences and ICT-DAE Centre for Chemical Engineering Education and Research.

Candidates admitted to Ph.D. (Tech.) in Technology (Sr. No. 15) conduct research under the recognized faculty from the Department of General Engineering and Polymer and Surface Engineering.

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

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

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

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

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

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

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

### 3.4.2 FELLOWSHIPS FOR DOCTORAL PROGRAMMES

Candidates receiving fellowships from any source and doing Ph.D. are required to work for 8 hrs/week to carryout administrative, supervisory and teaching assistantship as directed by Guide, Head of the Department and Institute Authorities.

#### 3.4.2.1 INSPIRE FELLOWSHIP FROM DEPARTMENT OF SCIENCE AND TECHNOLOGY (GOI)

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

### 3.4.3 ELIGIBILITY CRITERIA FOR THE ADMISSIONS:

#### 3.4.3.1 (A) ELIGIBILITY CRITERIA FOR ADMISSION TO Ph.D. (Tech.)/ Ph.D. (Sci.)

For Ph.D. (Tech.) course at Sr. No. 1 in Table 3.4.1 must have passed

- i) Bachelor degree (12+4) in Engineering/Technology/Pharmacy or equivalent thereto AND
- ii) Master's degree examination in the Chemical Engineering/Bioprocess Technology/ Chemical Technology (any branch at ICT)/Pharmacy/M. Tech. Biotechnology/

Biochemical Engineering/ or any other UGC recognized university as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

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

For **Ph.D. (Tech.)** courses at Sr. No. 3, 4 and 7 -15 in Table 3.4.1, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category ).

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

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

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

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

For **Ph.D. (Tech.)** courses at Sr. No. 16-19 in Table 3.4.1, the candidate must have passed the Master's degree examination from any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPS (55% marks or equivalent CGPA in case of reserved categorie).

Plastic Engineering/Material Science/ Civil / Structural / Environmental / Civil and Water management / Transportation enginerring/ construction / construction management / Geotechnical / Water Resources/ Electrical Engg/ Power Systems/ Control systems/ Instrumentation and Control/ Power Electronics/ Electrical machines and Drives/ Power and Energy systems/Electronics/Micro Electronics/ VLSI Design/ Embedded systems/ Electronics and Communication/ Telecommunication Mechanical / Production / Industrial / Thermal / Machine design / Machine tools / Automobile

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

For **Ph.D. (Sci.)** courses at Sr. No. 22, 24 and 25 in Table 3.4.1, the candidate must have passed the Master's degree examination in the respective Subject of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).

For **Ph.D. (Sci.)** course at Sr. No. 23 in Table 3.4.1, in Food Science the candidate must have passed the M. Sc examination in Food Science, Food Processing, Nutrition, Home Science, Post harvest

Technology, Horticulture, Dairy Science, Biochemistry, Microbiology, Organic Chemistry of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

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

For Ph.D. (Tech.) course at Sr. No. 27, 28, 30 in Table 3.4.1, the candidate must have passed the Master's degree examination in the Agrochemical Engineering / Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT/ [(M.E in Petrochemical Engineering/ Environmental Engineering) (Provided Bachelor Degree in Chemical Engineering)] or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) courses at Sr. No. 29 and 31 in Table 3.4.1, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

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

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

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

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

**Apart from regular full time on- campus candidates, following candidates are also eligible for admission to Ph.D. (Tech.)/ Ph.D. (Sci.):**

- (i) Permanent full time teachers of College/ Institute (See 3.4.3.1.B for details)
- (ii) Employees of National laboratories/ Government Institutions (See 3.4.3.1.C for details)
- (iii) Employees of Industry (See 3.4.3.1.D for details)

**NOTE:** The selection of all the candidates for Ph.D. (Tech.) including GATE/ GPAT- JRF qualified candidates shall be based on the score in the qualifying examination, performance in the written test and interview (if short listed in written test) conducted by the Institute.

However, persons qualified in NET/ CSIR/ DBT-JRF and holding valid fellowship obtained from Government funding agencies such as DST, ICMR, UGC, CSIR, etc. are exempted from the entrance written Test. Admissions to such candidates are open throughout the academic year.

### **3.4.3.1 (B) ELIGIBILITY CRITERIA FOR TEACHERS FOR ADMISSION TO**

#### **Ph. D. (Tech.) / Ph. D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.4.3.1. A above.

- a) The candidate should be a permanent teacher having full time teaching experience of at least two years in Degree College or five years in Junior college / Diploma College / Polytechnics (affiliated to statuary bodies).
- b) Teachers who have been in the service of any Engineering and Technology College approved by the UGC/AICTE are entitled for registration for Ph. D. (Tech.) with the faculty of the ICT.

- c) Teachers who have been in the service of any Science College approved by the UGC are entitled for registration for Ph. D. (Sci.) with the faculty of the ICT.
- d) The college management should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- e) Teachers can work in the ICT laboratories during vacations and holidays and after their office hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.
- f) A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who carry out research part time but put in at least 3 months full time work in a year in the ICT labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teachers a hands-on experience and to bring them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.
- g) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- h) Teachers registering themselves as Ph.D. student of ICT should not register any Masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this effect to avoid degeneration of this novel concept into a Ph.D. by unscrupulous means.
- i) If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate may be eligible for the UGC fellowship under our SAP programme, provided he/ she successfully clears the Institutional entrance tests.
- j) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. programme.

#### **3.4.3.1 (C) ELIGIBILITY CRITERIA FOR CANDIDATES WORKING IN NATIONAL LABORATORIES/ GOVERNMENT INSTITUTIONS FOR ADMISSION TO PH. D. (Tech.) / PH. D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.4.3.1. A above.

- a) The candidate should be a permanent employee working in National Laboratories/ Government Institutions having minimum 2 years of service.
- b) The management of the organisation should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned candidate and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.

- c) Such candidates can work in the ICT laboratories during vacations and holidays and after their office hours if they come from organisation in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.
- d) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- e) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Doctoral programme.

#### **3.4.3.1 (D) ADMISSION FOR INDUSTRY -SPONSORED IN-HOUSE CANDIDATES**

##### **TO Ph.D. (Tech.) / Ph.D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.4.3.1. A above.

1. The candidate should have minimum 2 years of industrial experience.
2. Industry should have a well-equipped Research and Development and Quality Control laboratory with at least one Ph.D. employee working in the set up in the relevant area.
3. Industry is required to get recognition from ICT by the following procedure:
  - i. After receiving request from an industry, a Committee appointed by the Vice Chancellor, ICT will make a visit to the industry laboratory. The ICT appointed Committee will consist of Dean (RCRM) as Chairman with a Professor nominated by the Vice Chancellor and the Head of the Department in the area of proposed research.
  - ii. The committee will evaluate the activities and the competence of the R and D of industry following the guidelines of similar to those proposed by DSIR. All the expenses in connection with the visit will be borne by the industry concerned. The ICT committee will make recommendations to the Vice Chancellor, ICT for approval. The industry R and D will be recognized by the approval of the Vice Chancellor, ICT. In case the laboratory is already recognized by DSIR, the visit by ICT committee will not be necessary.
  - iii. Once the R and D laboratory is recognized by the ICT, the industry is required to pay Rs. 5 lakhs for first four years (typical duration of Ph.D. work) and necessary contingency amount of Rs. 50,000/- per candidate per year (in the name of ICT, to be utilized by the Research Guide) for the conduction of the research activity. After four years, the renewal of the recognition will continue by payment of Rs. 1 lakh per year. Further, the industry should try to get recognition for their R and D set up from DSIR, based on the recommendation of the ICT appointed Committee.
4. During a year, an industry may nominate up to two employees (with required qualification) for registering for the doctoral degree at ICT under the supervision of ICT faculty.
5. The candidate is required to pay all the Ph.D. fees (over and above laboratory eligibility fees) as proposed by the ICT at appropriate time and will not be eligible for any fellowship. Also, the other requirements, like eligibility criteria, qualifying institutional tests (score is valid for two years for Industry -sponsored candidates), completion of course work, etc. need to be fulfilled by the industry candidate.

### **3.4.3.1(E) RULES AND ELIGIBILITY CRITERIA FOR ADMISSION TO DIRECT Ph.D. (Tech.)**

Institute of Chemical Technology (ICT) has a proven track record in training high quality manpower and in conducting research in Chemical Engineering, Chemical Technology, Pharmacy and Allied sciences. In view of the need of attracting talented graduates to Research career in Engineering and Technology, and for enhancing the number of quality Ph.D.s, ICT has initiated a programme of Direct Ph.D. (Tech.) in Chemical Engineering, Chemical Technology. This programme is not available for Direct Ph. D. (Tech.) in Pharmacy.

The Direct Ph.D. (Tech.) Degree Programme is designed to identify candidates with strong potential for a career in Research and to Develop Human resources for the India's future needs in Chemical Engineering and Chemical Technology. The programme has the following objectives:

- (i) To provide avenues for Doctoral degrees to candidates with talent and aptitude for carrying out advanced research and development activities in Technology.
- (ii) To furnish a multidisciplinary, flexible and innovative Doctoral research programme with special emphasis on
  - (a) Acquisition of proficiency in research, knowledge, data generation and analysis, mathematical modelling, and management with sharpening skills in innovative experimental methods and problem-solving capabilities.
  - (b) Creation of a pool of young talented, dedicated and committed individuals with passion and involvement in pursuing research and development as a career.
  - (c) Inculcation of attitude, temper and outlook for developing social commitment as well as high level of scientific ethics and integrity.
- (iii) To disseminate the new knowledge in the form of publications, patents, theses, seminars and conferences. Efforts will also be made to help the society and the industry and hence the economy of the country.

#### **Selection of Candidates:**

- i. The candidate, applying for the Direct Ph.D. (Tech.) programme, must have a Bachelor's degree in Chemical Engineering or Chemical Technology with more than 65% marks or equivalent CGPA (60% marks or equivalent CGPA for candidates from reserved category) of ICT or from any accredited or AICTE recognized Engineering and Technology Institute. A valid GATE score is mandatory.

#### **Selection Process:**

- i. The candidates will be selected on the basis of an Institute level written test and an Interview.
- ii. The candidate must score a minimum of 50% in the written examination of the Institute to qualify for the interview.
- iii. The selection of the candidates shall be strictly on merit and on the basis of performance in the written test and interview conducted by the ICT.
- iv. The list of qualifying candidates will be prepared on the basis of marks in written test and Interviews in 70:30 ratio.

#### **Course Work and Registration for Direct Ph.D. (Tech.):**

- a) The registration of the candidate of Direct Ph.D. (Tech.) shall be initially for Master's degree in the same discipline until he/she completes the Course work.
- b) The candidates will have to complete the course work of Master's degree in the same discipline with a minimum CGPA of 7.0 before change of registration to Ph.D. (Tech.)

degree. Since the programme has an objective of developing best human resources in Research, it is essential that the selection of the candidates is done with utmost care. They are also emphasized about successful completion of the course work.

- c) The candidate may be permitted to carry the credits of equivalent course, work of at least two semesters, if it is completed in IITs/NIT/HBNI, or any other reputed Government/AICTE recognized Institution that has signed an MoU with ICT for transfer of credits, provided as the course work is certified by the competent authority of that Institution. Such candidates may be exempted from taking the respective course work required for the Ph.D. (Tech.) programme. These candidates should be encouraged to take 4 audit courses related to their own research topic.
- d) Direct Ph.D. (Tech.) candidates shall first register for Master's degree and only after successful completion of course work for Master's and in the month of April of second year their registration will be changed to Doctoral degree. The certificate for completion of course work will be mandatory for this.
- e) The Registration and review of progress of these candidates will follow the same procedures as for other Ph.D. (Tech.) candidates registered in the Institute.
- f) Any candidate who completes the course work as specified above and completes minimum of 1 year of Research project will be awarded the Master's degree in respective discipline, if he/she wishes to discontinue further research or fails to acquire requisite CGPA of 7.0 in Master's programme.
- g) Candidate having poor performance in the Master's course work (as given above) will not be registered for Ph.D. (Tech.) degree and may be allowed to submit a thesis on the basis of one year of research work to get Master's degree.
- h) On successful completion of the entire programme the candidate will be awarded both the degrees, respective Master's and Ph.D. (Tech.)(Dual Degree) at the end of the programme.
- i) Direct Ph.D. (Tech.) INSPIRE fellows will be given master's fellowship till 31<sup>st</sup> March of the second year. They will be given Provisional master's degree certificate to become eligible for the Ph.D. (Tech.) fellowship from April, 01 of the second year.

#### **Course Work for Ph.D. (Tech.)/ Ph.D. (Sci.):**

As per the UGC directives and the Ph.D. reforms initiated at ICT, following are the rules governing the course work for a Ph.D. degree programme:

1. All candidates registered at ICT for the Ph.D. degree from academic year 1<sup>st</sup> July, 2009 will have to complete the course work.
2. Every Ph.D. candidate will complete two Credit courses (theory) and three Audit courses (theory) during the entire duration of Ph.D. The total credit points should be minimum 15.
3. All the course work must be completed before submission of synopsis for the thesis.
4. The selection of the credit and audit courses will be by mutual consultation between the Candidate and the Research Supervisor.
5. The candidate can select any courses offered by ICT that he/ she had not undergone earlier at ICT or elsewhere, either as credit or audit courses.
6. The candidate may choose to take the courses at Institute(s) other than ICT, provided there is an MOU signed between the Institute and ICT for transfer of credits.
7. For the audit courses, a minimum 75% attendance is compulsory.
8. Each course instructor will issue an Attendance certificate in a prescribed format to the candidate at the end of the semester on completion of the course.
9. Submission of copies of attendance certificates will be compulsory at the time of submission of synopsis of the thesis for the Ph.D. Degree.

10. The Attendance Certificates for the audit courses will be maintained by candidate and sent to the Academic Office through the Supervisor and Head of the Department at the time of the submission of the synopsis.

### **3.4.3.1 (F) ADMISSION TO Ph.D. (Sci.) AND Ph.D. (Tech.) DEGREE FOR CANDIDATES HAVING NATIONAL FELLOWSHIPS**

Note: Provisional admission will be given to the candidates who are eligible to receive fellowship e.g. DST-INSPIRE, Rajiv Gandhi National Fellowship (RGNF) for SC/ST/OBC candidates etc. and comply eligibility criteria of admission at ICT. Admission of the candidate will be confirmed after receipt of fellowship award letter from that agency. In this case, candidate will be required to submit such fellowship award letter within maximum period of six months.

## **3.4.4 APPLICATION PROCEDURE FOR Ph.D. COURSES**

For admissions at the ICT for any of the Ph.D. courses, a candidate should apply online for admission applications. (website [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)). Click on Apply online for Admission 2020-21.

### **3.4.4.1 ONLINE APPLICATION :**

**To Fill the online application form below steps are required:**

**Step: 1 » Personal Information**

Date of birth, Mobile No, Address, Caste, Category Details, Scanned colour Photo (Must be less than 40 kb, format-.jpg/.jpeg).

**Step: 2 » Education details starting Xth, XIIth / Diploma, Graduation (if applicable)**

Carefully select between options of Percent System or Grade System

Year of Passing of each degree should be carefully specified

Board of Examination decides the normalization factor, so specify correctly

**Step: 3 » Entrance Exam Details**

Select entrance exam in which you will appear

Enter Application Id, Mobile Number, Roll No, Enter Grade / Percentage / Percentile / score / Rank correctly

**Step: 4 and 5 » Upload Scanned Documents**

All mark sheets and certificates

Category / caste document, migration, domicile certificate etc.

**Step: 6 » Payment details for admission form**

You can pay application form fee with online mode by using Credit/ Debit card or by Net Banking only.

After submitting the form, students can take a print of application form for their reference.

The candidate shall fill the appropriate application form/s, separate for each course of choice.

All the relevant entries in the application form must be completed. Incomplete forms will be rejected and no correspondence will be made in this regard.

**Writing contact details such as permanent address, address for correspondence, Mobile No./ Telephone No./ and email address in the application form is essential. Do not leave any space blank.**

The duly filled form along with ATTESTED PHOTOCOPIES of required certificates to substantiate the claims made in their application form should be submitted online. The Admission application fees once paid is non-refundable and non-transferable under any circumstances.

Incomplete applications shall be rejected without entering into any correspondence with the applicant.

The candidates seeking admission at the ICT must submit ATTESTED PHOTOCOPIES of all the documents as given in Table 3.4.4.3 below along with the application form.

Attachment of any certificates will not be accepted separately after submission of the application form.

The candidates belonging to the reserved categories will be required to submit The Caste Certificate, the Caste/ Tribe Validity Certificate as applicable at the time of submitting the application form, failing which the category claimed, will not be granted and the candidate will be treated as a General candidate.

The candidates shall not attach a copy of any other certificate which is not asked for, such as certificates for participation in sports, cultural activities, etc.

If the candidate produces any certificate, which is not in Marathi, Hindi or English language, authenticated Marathi, Hindi or English version of the same, duly attested by a Gazetted Officer shall also be produced.

For admissions at the ICT for all the Ph.D. courses, a candidate should fill appropriate application form(s) for the course to which he/she is seeking admission.

(Refer time schedule for each of the following stages displayed on ICT Notice Board and website [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)).

**TABLE 3.4.4.3: DOCUMENTS TO BE ATTACHED WITH THE APPLICATION FORM FOR Ph.D. ADMISSIONS**

| Sr. No. | Type of Candidate  | Attested true copies of documents to be attached along with application form   |
|---------|--|--|
| I       | All Candidates   | 1. SSC (Std. X) mark sheet,<br>2. HSC/HSSC (Std. XII) mark sheet,<br>3. All Mark sheets of Bachelor's Course<br>4. Bachelor's degree certificate<br>5. All Mark sheets of Master's Course<br>6. Master's degree certificate<br>7. College Leaving / Transfer certificate<br>8. Gap Certificate |
| II      | Backward class Candidates belonging to SC/ ST Categories   | Caste certificate, Caste/ Tribe Validity certificate, as applicable.<br>(In addition to the documents mentioned in Sr. No. I)  |
| III     | Backward class Candidates belonging to VJ/ DT (NT(A))/ NT(B)/ NT(C)/ NT(D)/OBC/ SBC categories (Maharashtra State candidates only) | Caste certificate, Caste/ Tribe Validity certificate, Non Creamy Layer Certificate valid up to 31 <sup>st</sup> March 2021. (In addition to the documents mentioned in Sr. No. I)  |
| IV      | Backward Class Candidates belonging to OBC Category  | Caste Certificate issued by Central Government   |

Candidates are requested to visit the institute website for a detail time table as well as updates for the same. List of the eligible candidates for written test will be displayed on the website. Only eligible candidates will be allowed to appear for the written exam. Depending upon the required number of candidates, institute reserves right to call specific number of candidates for interview. A merit list will be generated on the basis of written test.

### 3.4.5 RULES AND REGULATIONS ABOUT RESERVATION

Reservation in admission for SC/ST categories is applicable to all Ph.D. courses (all branches) as per the Maharashtra government norms (applicable for written test only.)

#### 3.4.5.1 CASTE CERTIFICATE AND CASTE/ TRIBE VALIDITY CERTIFICATE.

- a) Caste Certificate: The candidates belonging to the backward class categories will be required to submit the Caste Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.
- b) Caste Validity Certificate: The candidates belonging to the SC/ST category will be required to submit the Caste/Tribe Validity Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.

### 3.4.6 FEES, CONCESSIONS, CANCELLATIONS AND REFUND

#### 3.4.6.1 FEES PRESCRIBED:

**Fee structure for Ph.D. Courses at ICT for the academic year 2020-21**

| Sr. No. | Details         | Fee for 1 <sup>st</sup> Year (Rs.) |
|---------|-----------------|------------------------------------|
| 1.      | Library Deposit | 2,000/-                            |
| 2.      | Fees            | 60,000/-                           |
| 3.      | Other Fees      | 2,500/-                            |
|         | <b>TOTAL</b>    | <b>64,500/-</b>                    |

**\*Note: Contingency amount for Ph.D. Students admitted under various fellowships will be as per the norms of respective sponsoring funding agencies. Other candidates have to pay Rs. 20,000/- in addition to the above fees. These are only indicative figures and likely to be changed by 10%.**

**Notes :**

- a) For confirmation of seat allotted, all candidates have to submit Demand Draft/ Pay Order in favour of 'Institute of Chemical Technology, Mumbai', payable at Mumbai, of appropriate values as shown in above TABLE.
- b) Hostel Fees shall be charged additionally in case of candidates opting for hostel accommodation (the details are given in Section on Hostels).
- c) Vide letters no. जा.क्र./स.आ.स.क/मु.श./व्या.प.आ./अ.जा.फि.स्कॉ/2015-16@5012 dated 17th August, 2015 received from Assistant Commissioner, Social Welfare Department, Mumbai city and जा.क्र./सकआ/शिक्षण/रतंसं/2015-16 nwUo 2164 dated 11th August, 2015 received from Joint Director, Social Welfare Department, Pune, "All reserved category students for Master and Ph.D. who are getting any fellowship are not entitled to get Freeship/Scholarship from Government of Maharashtra."

#### 3.4.6.2 LIBRARY DEPOSIT

Library deposit received from the students shall be refunded after successful completion of the course or after cancelling the admission, subject to producing Original Receipt. Unless there is any recovery, no deduction shall be made from the Library deposit. However, the amount of Library deposit shall be credited to institute, if the candidate does not apply for refund, within 3 complete financial years after the student actually leaves the institution; or, within 3 complete financial years after the date of successful completion of the course, whichever is earlier.

### **3.4.6.3 REIMBURSEMENT OF TUITION FEE:**

Candidates claiming concession under the categories of EBC and sons and daughters for teaching and non-teaching staff of primary, secondary and higher secondary schools shall pay entire fee as applicable at the time of admission and subsequently candidates have to apply to the respective authorities for reimbursement of tuition fees. The quantum of reimbursement received by the institute from the concerned authorities shall be disbursed to the candidate.

### **3.4.6.4 CANCELLATION OF ADMISSION AND REFUND OF FEES:**

Refund of tuition fee, development and other fees after cancellation of admission secured at ICT. Candidate who has been admitted to ICT may cancel admission by submitting an application in duplicate, in the prescribed Pro forma - E and request for refund of fees. The refund of fees as applicable shall be made in due course of time. It is made clear that such application for cancellations will be considered if and only if the admission has been confirmed by paying the prescribed tuition fee and other fees in full and by submitting all the necessary original documents. Refund shall be made after deduction of cancellation charges as shown below -

| SR. NO. | SITUATION  | REFUND  |
|---------|--|---|
| 1       | Request received within 10 days from the date of admission | Entire fee less Rs.1000/-   |
| 2       | Request received within 30 days from the date of admission | Entire fee less the total fee for one month. (Tuition, development, other and hostel fee) |
| 3       | Request received after 30 days from the date of admission  | No refund (except Library Deposit)  |

Note: For calculation of amount on the pro-rata basis, one month shall be treated as one unit.

ALL RIGHTS REGARDING THE ADMISSIONS AT THE ICT ARE RESERVED WITH THE VICE CHANCELLOR, ICT.

## **3.5.1 POST GRADUATE DIPLOMA IN CHEMICAL TECHNOLOGY MANAGEMENT**

The ICT has a rich tradition of first generation entrepreneurs as its graduates. In order to groom our Ph.D. students into etiquettes of business management, a certificate course in Chemical Technology was started for the ICT students. This popular course is now converted into a PG Diploma Chemical Technology Management to give Ph.D. research students and industry personnel, an orientation in business and technology management of chemical industry and to sharpen entrepreneurship skills.

The course covers topics such as Chemical Technology Management, Product/Process Design and Development, Finance Management, Marketing management, Intellectual Property Rights (IPR) and other laws, Communication, HRD, Project Management, Team and Organization Management.

The course is run with the assistance of the UDCT Alumni Association, with several alumni and other experts from within and outside ICT, having vast experience. This is a two-year Semesterised course conducted on Saturdays and Sundays. The course commences in January, every year and the admission procedure may commence from October, every year (see website [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)).

| Type No. | ELIGIBILITY AND TYPE OF CANDIDATE  | SEATS |
|----------|--|-------|
| 1.       | Candidates registered for Ph.D. (Tech.)/ Ph.D. (Sci.) in ICT, who have completed the course work required for Ph.D. and have spent at least a year in their Ph.D. programme                                      | 10    |
| 2.       | Candidates registered for Ph.D. (Tech.)/ Ph.D. (Sci.) in any other University/Institute of repute, who have completed the course work required for Ph.D. and have spent at least a year in their Ph.D. programme | 10    |
| 3.       | Industry- sponsored candidates working for not less than 3 years, having Master's degree in Chemical Technology/ Chemical Engineering/ Science/ Pharmacy/ Mathematics or any other equivalent course             | 10    |

Admission will be conducted on the basis of written test and interview (equal weightage).

In case the candidates from a particular type are not available, the seats may be transferred to other type of candidature on the basis of merit. Fees once paid shall not be refunded.

The **post-graduate diploma in Chemical Technology Management** (30 seats) is meant for candidates registered for Doctoral degree from the ICT or other institutes/Universities as well as for industry personnel.

| PG Diploma in Chemical Technology Management |                               |
|--|-------------------------------|
| Ph.D.- Registered Candidates                 | Industry Sponsored Candidates |
| Rs. 15,000/-                                 | Rs. 45,000/-                  |

All Rights regarding the admissions at the ICT are reserved with the Vice Chancellor, ICT.

### 3.5.2 CERTIFICATE COURSE IN SAFETY AND RISK MANAGEMENT

This course is designed for all the post-graduate researchers in the Institute of Chemical Technology. It is also suitable for young professionals employed in the chemical industry.

In this course, several useful topics are taught : safety and risk management; materials hazards; hazard evaluation and risk assessment techniques; laboratory safety; handling, storage and transportation of hazardous chemicals; safety devices; utilities; radiation safety; environmental impact assessment; management practice in SHE plant operation; fire safety; and introduction to REACH and OSHA.

This course commenced in July 2015 and is taught in every semester on Saturdays only. The faculty members are renowned national and international experts from the academia and industry.

## 3.6 EXAMINATION PATTERN

### 3.6.1 SEMESTER EXAMINATIONS

#### 3.6.1.1 EXAMINATION SCHEDULE:

All the courses at Bachelor's and Master's level are Semesterised and credit based from 2009-10. There is a continuous evaluation of the students on grade basis through internal assessment. For B.Chem.Engg./ B.Pharm./ B.Tech./ M.Chem.Engg./ M.Pharm./ M.Tech./ M.E.(Plastic Engg.)/ M.Sc. (by papers), the Odd semester (Semester-I, III, V and VII) examinations shall be held in the month of December/ January and Even. Semester (Semester-II, IV, VI and VIII) examinations in the month of April/May every year.

Students are advised to read the Regulation R-9, given below, carefully.

#### 3.6.1.2 APPLICATION FORMS:

The application form for appearing the examination/s, must be submitted to the Accounts Section along with prescribed fees before the specified dates, which are notified well in advance on the ICT Notice Board. Examination forms will be accepted after the last date only up to one week with late fees. Thereafter, it is not obligatory for the institute to accept the forms.

**3.6.1.3**

No examination form shall be accepted unless the examination fee is fully paid in cash.

**3.6.1.4**

Master's courses (Regular 2 years) have theory courses in Semester-I and II.

**3.6.1.5**

Doctoral courses students have to undergo minimum 2 Theory Credit courses and 3 Audit Courses. They will have to follow the same procedure of applying for admission to the examination in the subjects selected by them for credit courses during the respective examination schedule. Doctoral students are therefore required to submit the list of their choice of Credit and Audit courses with clear mention of course, semester and subject code within 15 days of their admission to the Academic Office. The form may be downloaded from ICT intranet.

Candidate can apply for change of credit / audit course(s) through his/her Ph. D. supervisor and the Head of the Department to Dean (AP) with in the first two weeks of start of academic session. Decision taken by Dean (AP) will be binding on student.

**3.6.1.6 REPEAT SEMESTER EXAMINATIONS (REGULATION R-14):**

To provide an avenue to improve the performance of the students, a provision of repeat semester examination is made. These examinations for Bachelor's and Master's courses are generally held within a month after declaration of the results of regular semester examinations. Those who want to take repeat examinations should apply for the same with the necessary fee in a stipulated period; notice for the same shall be displayed on the ICT Notice Board.

**3.6.1.7**

There is a provision of amendment of result of an examination (Regulation R-13). For these, separate applications should be submitted to the office within the prescribed time.

**3.6.1.8**

The students undergoing theory courses at all levels (UG, Master's and Ph.D.) may please note that a provision exists for them to see their assessed answer books for Continuous Evaluations, Mid-Semester and Final Semester examinations. They may discuss their marks obtained with the concerned teacher within 3 days after a notice is put up by the teacher displaying the marks awarded, with prior appointment at the convenience of the teacher.

**3.6.2 REGULATION RELEVANT TO EXAMINATION****R.9 Credit System and Mode of evaluation****1. Introduction**

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

Credit system is a systematic way of describing an educational programme by attaching credits to its components. The definition of credits may be based on different parameters, such as student workload, learning outcomes and contact hours. It is a student-centric system based on the student workload required to achieve the objectives of a programme. It should facilitate academic recognition of the courses and mobility of the students. Credits assignment is based on the principle that Credits can only be obtained after successful completion of the work required and appropriate assessment of the learning outcomes achieved. As per the AICTE norms 2L/ week of lectures are 2 credits, while 2h/week of practicals/tutorials are 1 credit. This may be taken as the basis.

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

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

## **2. Course Credits**

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

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

- (1) 1h/week of lecture (L) or tutorial (T) = 1 credit
- (2) 2h/week of Practicals (P) = 1 credit
- (3) Credit (C) for a theory course = No. of hours of lectures per week + No. of hours of tutorials per week = L + T
- (4) Credits (C) for a Laboratory course =  $\frac{1}{2} \times$  No. of hours of laboratory course per week

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

## **3. Evaluation**

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

#### **Credit System and Mode of Evaluation\***

|            | In-Semester evaluation |                   | End-Semester-Exam | Components of continuous mode   |
|------------|------------------------|-------------------|-------------------|---|
|            | Continuous mode        | Mid Semester-Exam |                   |   |
| Theory     | 20%                    | 30%               | 50%               | Quizzes, class tests (open or closed book), home assignments, group assignments, viva voce assignments, discussions |
| Practicals | 50%                    | -                 | 50%               | Attendance, viva -voce, journal, assignments, project, experiments, tests   |

\* Subject to change

#### **3.2 In-Semester Evaluation:**

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

- e. For mid -semester examinations in theory papers, duration of examination will be 1 hour for 3 credit courses and 2 hours for 4 credit courses.

### **3.3 End-Semester examination:**

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

### **3.4 Passes and Failures**

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

### **3.5 Grades:**

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

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

- c. In view of our elite status 6 out of 10 CGPA will be first class. Thus ( $CGPA \times 10$ ) formula will be used to calculate % and class Repeat examination in Practicals subject is permitted to the students in the following cases:
  1. Candidate has obtained 50% marks in Continuous Assessment and appeared for regular End semester practical examination and Failed. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
  2. Candidate has obtained 50% marks in Continuous Assessment and could not appear for regular End Semester practical examination due to valid Medical reason and or family bereavement. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
  3. The candidates not fulfilling above two criteria will be given year drop.  
Distinction, (70%)  
First Class (60-69.99)  
Second Class (50-59.99)  
will be used like old ICT cut-out marks.
- d. The grades to be allotted in the case of students who fail or do not appear at the end-semester examination shall be as under.

| Letter Grade | Grade Point | Explanation  |
|--------------|-------------|--|
| FF           | 0           | The candidate fails in subject head. The candidate will be allowed to take end-semester repeat or subsequent examinations as per rule.   |
| XX           |             | The candidate has not kept term for the subject head due to attendance less than requisite. Further see 3.5(h) below.<br>In the above cases, the candidate has to repeat the respective course by paying the fees.   |
| I            | 0           | The candidate has kept term for the subject head, has taken all the internal examinations with satisfactory performance, but has failed to take the end-semester examination or repeat examination due to genuine reasons. The candidate will be allowed to take end-semester repeat or subsequent examinations as per rule. |
| FR           | 0           | The candidate has exhausted all the permissible chances to clear the end semester examinations.<br>The candidate has to register for the respective semester again for all the subject heads or will be out of the respective degree course as per the rules.  |
| DR           | 0           | (i) The candidate hasn't participated in academic programme.<br>(ii) The candidate has taken a drop for the subject head; - provided he/she intimates the same (i or ii) at least 7 days in advance of the commencement of the end-semester examination for the respective year.   |

- e. Grades FF and I are place-holders only and do not enter into CPI/SPI calculations directly. These grades get converted to one of the regular grades after the end-semester examination.
- f. A candidate with an FR grade is not eligible for any repeat examination in that course and has to re-register for that semester by paying the appropriate fees.
- g. The grade I will not be continued beyond the permissible number of end-semester/repeat examinations [Refer to current Regulation R.9 (9) and R.9 (10)]. In the six consecutive exams conducted by the institute, irrespective of whether the candidate fails to take any of these exams.
- h. 'XX' Grade: The grade XX in a course is awarded if - (i) candidate does not maintain the minimum 75% attendance in the Lecture/Tutorial/Practical classes, (ii) candidate receives less than 20% of the combined marks assigned for continuous assessment and mid-semester examination, and (iii) candidate indulges in a misconduct/uses unfair means in the examination, assignments, etc., of a nature serious enough to invite disciplinary action in the opinion of the teacher.  
(Note: Award of the XX grade in the case of h (iii) above shall be done by Disciplinary Action Committee (DAC)).
- i. The names/roll numbers of students to be awarded the XX grade should be communicated by the teacher to the Academic office as per academic calendar before the last date of submission of the application for end-semester examination.

### 3.6 Awarding the Grades

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

1. If the average marks (AM) obtained by the students who have passed the subject head is <60%, the interval AM shall be awarded grade CC and the other grades shall be decided as follows:
  - i. AA, AB, BB, and BC grades shall be decided between the AM and HM by dividing the range in equal intervals.
  - ii. CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.
2. If the average marks (AM) obtained by the students who have passed the subject head is such that  $60\% \leq AM < 70\%$ , the interval AM shall be awarded grade BC and the other grades shall be decided as follows:
  - i. AA, AB, BB grades shall be decided between the AM and HM by dividing the range in equal intervals.
  - ii. CC, CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.
3. If the average marks (AM) obtained by the students who have passed the subject head is  $\geq 70\%$ , the interval AM shall be awarded grade BB and the other grades shall be decided as follows:
  - i. AA and AB
  - ii. BC CC, CD, DD and EE grades shall be decided between the AM and minimum marks required for passing the head (i.e. 40%) by dividing the range in equal intervals.
4. SPI and CPI
  - a) Semester Performance Index (SPI): The performance of a student in a semester is indicated by Semester Performance Index (SPI), which is a weighted average of the grade points obtained in all the courses taken by the student in the semester and scaled to a maximum of 10. (SPI is to be calculated up to two decimal places.)  
A Semester Grade Point Average (SGPA) will be computed for each semester as follows:  
Where  
'n' is the number of subjects for the semester,  
'ci' is the number of credits allotted to a particular subject, and  
'gi' is the grade-points awarded to the student for the subject based on his performance as per the above table.  
SGPA will be rounded off to the second place of decimal and recorded as such.
  - b) Cumulative Performance Index (CPI): An up to date assessment of the overall performance of a student from the time he entered the Institute is obtained by calculating Cumulative Performance Index (CPI) of a student. The CPI is weighted average of the grade points obtained in all the courses registered by the student since he entered the Institute. CPI is also calculated at the end of every semester (upto two decimal places).  
Starting from the first semester at the end of each semester (S), a Cumulative Grade Point Average (CGPA) will be computed as follows:  
Where  
'm' is the total number of subjects from the first semester onwards up to and including the semester S,  
'ci' is the number of credits allotted to a particular subject, and  
'gi' is the grade-points awarded to the student for the subject based on his performance as per the above table.  
CGPA will be rounded off to the second place of decimal and recorded as such.

- c) The CGPA, SGPA and the grades obtained in all the subjects in a semester will be communicated to every student at the end of every semester / beginning of the next semester.
- d) When a student gets the grade 'FF' or 'I' in any subject head during a semester, the SGPA and CGPA from that semester onwards will be tentatively calculated, taking only 'zero' grade point for each such 'FF' or 'I' grade. When the 'FF' grade(s) has / have been substituted by better grades after the repeat examination or subsequent semester examination, the SGPA and CGPA will be recomputed and recorded.

#### 5. Repeat End-Semester Examination

- 5.1 For those candidates who fail in a subject head or are eligible for appearing at the repeat examination, Repeat End-Semester Examination will be conducted within one month from the declaration of the results of regular end-semester examination, as per Regulation R.14.
- 5.2 The marks obtained by candidates in the in-semester examinations (continuous assessment and periodic test) will be carried forward in such cases.
- 5.3 Grading the performance in the Repeat Examination: The grades will be assigned as per 3.5 and 3.6 above. However, for a candidate taking any repeat examination or subsequent regular semester examination or performance improvement examination shall be awarded one grade lower than that decided on the basis of the actual marks obtained; provided 'EE' grade obtained in such an examination shall remain 'EE'. For reference see the table below.

| Grade obtained in repeat or subsequent end-semester examination | Grade to be assigned | Grade point |
|---|----------------------|-------------|
| AA  | AB                   | 9.0         |
| AB  | BB                   | 8.0         |
| BB  | BC                   | 7.0         |
| BC  | CC                   | 6.5         |
| CC  | CD                   | 6.0         |
| CD  | DD                   | 5.5         |
| DD  | EE                   | 5.0         |
| EE  | EE                   | 5.0         |

- 5.4 End-semester and repeat examination: Candidate's performance in these examinations will be displayed on proper notice board and after 3 days of such display the marks will be sent to the Academic Office. No revaluation of these examinations will be allowed.

#### 6. Passing of a Semester examination

- A candidate shall be declared as 'PASSED' any semester examination if he/she has
- a. Cleared all heads of passing by securing grades EE or higher in all the heads;
  - b. Passed all the heads of passing such as project, seminar, training, etc as per the rules;
  - c. Satisfactorily completed all the mandatory requirements of the course;
  - d. Paid all the Institute dues;
  - e. No case of indiscipline pending against him/her.

#### 7. Eligibility for the Award of a Degree

A candidate shall be declared eligible for the award of a degree, if he/she has cleared all the semester examinations as given in (6) above.

#### 8. Allowed to keep terms (ATKT)

- 8.1 A candidate who has I grade in one or more heads of passing of an odd semester of an academic year shall be allowed to keep terms for the respective even semester.

- 8.2 A candidate shall be allowed to keep terms for the subsequent academic year if he/she has FF or I grades in not more than two heads of passing from all the heads of passing of the two terms of the previous academic year taken together. Such a candidate shall be declared as FAILED, ATKT.
  - 8.3 A candidate who has not cleared Semester-I and II as per clause 6 above shall not be eligible to register for semester-V and VI.
  - 8.4 A candidate who has not cleared Semester-III and IV as per clause 6 above shall not eligible to register for semester-VII and VIII
9. Repeating a course
- 9.1 A student is required to repeat the course of a subject head under the following situations:
    - (a) A student who gets an XX, FR, or DR grade in a course; or
    - (b) A student has exhausted all permissible chances to clear the subject head.
  - 9.2 A candidate from second, third and fourth years who remains absent for the regular end-semester examination of a semester and the corresponding repeat examination for ALL SUBJECTS shall have to take fresh admission for the corresponding year; unless the candidate has dropped out / terminated from the course.
  - 9.3 If a candidate at the Second, Third or Fourth year fails to pass any semester examination in not more than 4 consecutive examinations, including the repeat examinations, from the date of registering for the respective year, the candidate shall have to take readmission for the corresponding year again in which the failure has occurred, provided the course is not changed.
10. Improvement of performance
- A candidate will be allowed to appear at the entire examination after the regular end-semester examination as per the respective rules to improve the performance. In such a case if the result of the examination repeated -
1. Is better than the previous one, the previous result shall be declared null and void; and
  2. Is worse than the previous one, the result of the subsequent examination shall not be declared.
  3. However, awarding of final grade will be made under the provision of sub clause 5.3 above.
11. Exit Rules for poorly performing students
- A candidate shall be excluded from a course under the following conditions:
- a. If he/she does not keep two consecutive terms without giving any reasonable justification (as prescribed by the institute) for doing so.
  - b. If he/ she fails to fulfill all the requirements of his/her respective degree within the prescribed period from the date of taking admission to the course.
12. Miscellaneous
- c. Although CPI will be given in the Semester grade report, the final degree certificate will not mention any Class whatsoever.
  - d. Notwithstanding anything said above, if a course is revised /restructured then transient provisions applicable at the time of revision /restructuring shall be applicable.

### **3.6.3 REGULATION R-13 (AMENDMENT OF RESULTS)**

In rare cases the result of a candidate might be wrongly represented due to errors inadvertently committed by the persons involved in the preparation of the results. Such a wrong representation is also possible due to intentional tampering with the results. The regulations below are meant for correcting the results under such conditions, when revealed.

- (A) Amendment of result with errors
  - (1) In case where it is found that the result of an examination has been affected by errors, the Controller of Examination shall have the power to amend such result in such a manner as shall be in accordance with the true position and to make such declaration as is necessary, with the necessary approval of the Dean (Academic Programmes), Provided the errors are reported/detected within 6 months from the date of declaration of results. Errors detected thereafter shall be placed before the UGPC or PGPC, as the case may be.
  - (2) Error means-
    - i) Error in computer/date entry, printing or programming and the like
    - ii) Clerical error, manual or machine, in totaling or entering of marks on ledger/register
    - iii) Error due to negligence or oversight of examiner or any other person connected with evaluation, moderation and result preparation.
- (B) Amendment of result affected by fraud, malpractices, etc.

In any case where the result of an examination has been ascertained and published and it is found that such result has been affected by any malpractices, fraud or any other improper conduct whereby an examinee has benefited and that such examinee, and in the opinion of the UGPC or PGPC, as the case may be, been party of privy to or connived at such malpractice, fraud or improper conduct, the UGPC or PGPC shall have the power at any time notwithstanding the issue of the Certificate or the award of a Prize or Scholarship, to amend the result of such examinee and to make such declaration as the UGPC or PGPC considers necessary.

### **3.6.4 REGULATION R-14 (REPEAT SEMESTER EXAMINATION)**

Repeat semester examination is a special feature of the examinations at the Institute. It provides an avenue for the students, who do not perform well in the main semester examination. A repeat examination therefore should be conducted immediately after the main examination.

- (1) For each regular semester examination, one repeat semester examination shall be provided.
- (2) A repeat semester examination shall be equivalent in all respect to the corresponding regular semester examination.
- (3) A repeat semester examination should commence after 15 days from the date of declaration of the results of verification of marks; preferably within one month from the date of declaration of the semester examination results.
- (4) The time tables for the repeat examinations shall be put up immediately after the declaration of the results of the regular semester examinations.
- (5) The candidates who have failed, or have got ATKT, or have obtained less than 50% marks in one or more subject heads and desire to improve the performance may be permitted to appear at the repeat examination.
- (6) The last date of submission of application forms for the repeat examination shall be minimum two days after the declaration of the results of the verification of marks.
- (7) The rules for the conduct of the repeat examination shall be the same as the regular semester examination.
- (8) The result of a repeat examination of a candidate shall override the respective result of the regular examination.

### **Repeat Practical Examination**

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

- (1) Candidate has obtained 50 % marks in Continuous Assessment and appeared for regular End Semester practical examination and Failed. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
- (2) Candidate has obtained 50 % marks in Continuous Assessment and could not appear for regular End Semester practical examination due to valid Medical reason and/ or family bereavement. (Continuous Assessment here means attendance, submission and evaluation of journals, assignments).
- (3) The candidates not fulfilling the above two criteria shall get a Year Drop.

### **3.6.5 WORK PRACTICE OR IN-PLANT TRAINING**

The Regulations require that the B. Chem. Eng. and B.Tech. students work for at least twelve weeks, while the B. Pharm. Students work for at least four weeks, in approved industries at the end of the third year of the respective courses (i.e. at the end of the sixth semester) and to submit a satisfactory report to the Head of the department. The Heads of Department normally arrange for the placement of the students for the works practice.

### **3.6.6 MALPRACTICE AT THE EXAMINATION (REGULATION R-16)**

Very strong action will be taken against students using, attempting to use, aiding, abetting, instigating or allowing using “unfair means” at the examination. This will be reported to the Unfair Means Inquiry Committee and the action taken by the Vice Chancellor shall be final.

## **3.7 ELIGIBILITY, ENROLMENT AND TRANSFER / LEAVING / MIGRATION CERTIFICATES**

(Applicable only to the candidates who have been offered seats)

### **3.7.1 TRANSFER CERTIFICATE**

A student admitted to the ICT is required to submit within a month from the commencement of the term, a Transfer Certificate/ Leaving Certificate / Migration Certificate from the Principal of the College last attended by him/ her.

### **3.7.2 PROVISIONAL STATEMENT OF ELIGIBILITY**

No student from other University/ Board can be admitted to any of the ICT courses without submission of a “Provisional Statement of Eligibility” to be procured from the ICT office. An application for a provisional statement of eligibility may be made only when a student is informed that he/ she is allotted a seat in the ICT. However, candidates should keep all the necessary documents, such as statement of marks, passing certificate, migration certificate, etc., ready for obtaining the provisional statement of eligibility. The provisional eligibility will be confirmed only after due verification of the statement of marks and passing certificate from the candidate’s parent University/ Board. The charges levied by the parent University of the Student for this purpose will have to be borne by the concerned candidate. The information regarding equivalence of examinations may be obtained from the Assistant Registrar (Academic) of the ICT.

### **IMPORTANT INSTRUCTIONS**

The ICT does not recognize degrees from overseas Universities/ Boards, on a regular basis. However, candidates desirous of seeking admission to the ICT, on the basis of qualifications obtained in overseas Universities/Boards may be considered for the admission on the merits of each individual case. For this purpose, passing certificates, transcripts of record and a copy of the syllabus, containing the details of the courses of studies pursued in the various subjects at the examination passed by the applicant (duly countersigned by the High Commissioner

of India in the country or the officer authorized by him) and standard of passing laid down at the examination should be forwarded to the office well in advance. In case the certificates or transcripts are in a language other than English, these certificates and the English translation of the same, duly certified by a competent authority, should be sent. The candidate should enclose all the permissions stipulated by the concerned Government Departments.

### **3.7.3 ENROLMENT CERTIFICATE**

The students admitted after passing the XII standard (HSC/HSSC) Examination are required to submit to the ICT the duly filled in enrolment form, along with a copy of Statement of Marks and the prescribed fee at the time of admission. The enrolment form can be obtained from the office of the ICT.

## **3.8 ACADEMIC YEAR, CODE OF CONDUCT AND DISCIPLINE**

### **3.8.1 COMMENCEMENT OF ACADEMIC YEAR\***

The date of commencement of the first semester of the academic year 2020-21 shall be September 1<sup>st</sup>, 2020.

All Bachelor's (2<sup>nd</sup> Year Onwards) and Master's courses shall start from 1<sup>st</sup> September 2020.

The academic calendar for all the Bachelor's and Master's courses is divided into two semesters.

### **3.8.2 ACADEMIC CALENDAR 2020-2021\***

The following shall be the Academic Calendar : (Tentative academic calender and likely to change due to recent COVID 19 pandemic situation)

#### **(A) DIVISION OF SEMESTERS FOR ALL COURSES**

##### **Odd Semester**

- |  |  |
|--|--|
| First Year and Final Year (UG and PG)  | : September 1, 2020 (Tue.) to December 31, 2020 (Thu.) |
| Second (UG and PG) and Third Year (UG) | : August 01, 2020 (Sat.) to December 31, 2020 (Thu.)   |
| Diwali Vacation (UG and PG)            | : November 13, 2020 (Fri.) to November 27, 2020 (Fri.) |

##### **Even Semester :**

- |                                       |  |
|---------------------------------------|--|
| First Year and Final Year (UG and PG) | : January 01, 2021 (Fri.) to May 15, 2021 (Sat.) |
| Second (UG and PG)                    | : January 01, 2021 (Fri.) to May 15, 2021 (Sat.) |
| Third Year (UG)                       | : January 01, 2021 (Fri.) to May 15, 2021 (Sat.) |
| Summer Vacation                       | : May 17, 2021 (Mon.) to June 30, 2021 (Wed.)    |

#### **(B) EXAMINATION SCHEDULE FOR ALL COURSES**

##### **Mid Semester Examination**

##### **Odd Semester**

- |  |  |
|--|--|
| First Year and Final Year (UG and PG)  | : October 7, 2020 (Wed.) to October 14, 2020 (Wed.)    |
| Second (UG and PG) and Third Year (UG) | : October 7, 2020 (Wed.) to October 14, 2020 (Wed.)    |
| Even Semester (UG and PG)              | : February 19, 2021 (Fri.) to February 26, 2021 (Fri.) |

#### **(C) SEMESTER EXAMINATIONS FOR ALL COURSES**

##### **Odd Semester**

###### a) Theory

- |  |  |
|--|--|
| First Year and Final Year (UG and PG)  | : December 15, 2020 (Tue.) to December 23, 2020 (Wed.) |
| Second (UG and PG) and Third Year (UG) | : December 15, 2020 (Tue.) to December 23, 2020 (Wed.) |

###### b) Practical

- |  |  |
|--|--|
| First Year and Final Year (UG and PG)  | : December 24, 2020 (Thu.) to December 31, 2020 (Thu.) |
| Second (UG and PG) and Third Year (UG) | : December 24, 2020 (Thu.) to December 31, 2020 (Thu.) |

- |  |                                     |
|--|-------------------------------------|
| c) Evaluation and Declaration of Results | : Within 45 days after examinations |
|--|-------------------------------------|

**Even Semester**

- a) Theory
  - First, Second and Final Year (UG) : April 26, 2021 (Mon.) to May 04, 2021 (Tue.)
  - Third Year (UG) : April 16, 2021 (Fri.) to April 23, 2021 (Fri.)
  - First and Second Year (PG) : May 07, 2021 (Fri.) to May 15, 2021 (Sat.)
- b) Practical
  - First, Second and Final Year (UG) : May 10, 2021 (Mon.) to May 15, 2021 (Sat.)
  - Third Year (UG) : April 26, 2021 (Mon.) to April 30, 2021 (Fri.)
  - First and Second Year (PG) : April 26, 2021 (Mon.) to April 30, 2021 (Fri.)
- c) Evaluation and Declaration of Results : Within 45 days after examinations

**Students Activities:-**

- Orientation programme for new students : Three weeks of academic session
- Psychometric analysis :-  
 1) Final year of under graduate, second year of Master and Ph. D. students – March  
 2) S.Y., T.Y. UG and F.Y. of P. G. students – during PG orientation programme  
 3) First year under graduate students – during UG orientation programme
- Sharing and physical data analysis : -  
 1) First year of under graduate and first year of Master students – November  
 2) Final year of under graduate and second year of Master students – April

**Technological Association festivals :-**

| Festival                                    | 2019-20   | 2020-21  |
|---|---|--|
| Funtech                                     | Jan 3-14, 2020<br>(14 <sup>th</sup> January non-instructional day)                                    | Jan 4-15, 2021<br>(15 <sup>th</sup> January non-instructional day)   |
| Manzar (Intercollegiate Cultural Festival)  | Jan 30 to February 02, 2020<br>(30 <sup>th</sup> Jan and 31 <sup>st</sup> Jan non-instructional days) | Jan 28-31 <sup>st</sup> 2021<br>(28 & 29 Jan non-instructional days) |
| Sportsaga (Intercollegiate Sports Festival) | March 12-22, 2020   | March 4-14, 2021   |
| Vortex (Intercollegiate Technical Festival) | October 10-14, 2019 (10 & 11 Oct non-instructional days)  | Oct 22-25, 2020 (22 and 23 Oct non-instructional days)               |

\*The academic calendar and other activities scheduled are likely to be changed as per Government directives.

### 3.8.3 REQUIREMENT OF ATTENDANCE

The attention of the students is drawn to the Regulation R-1 regarding the attendance of the student and Grant of Term. Biometric attendance system is adopted for all classrooms and lectures are recorded. An auto-generated message is sent to the student and his/her registered parent/guardian at 9.00 pm if the student has missed any lecture. Thus, a record is available to ICT authorities on real time basis.

As per R-1(2), the minimum attendance necessary for granting a term (Semester) in each subject shall be minimum of 75% of the lectures and practicals, taken separately, out of the total number of lectures and practicals conducted in a semester. The students shall be deemed to have submitted the undertaking about the attendance after the admission has been secured at the ICT.

**Note:** Students are supposed to inform concern HOD, Dean (AP) and CoE, about their leave and the reason for absentee by letter or email. In case of illness student is suppose to inform authorities within the first three days of illness (via email) and submit final medical certificate after joining the institute.

### 3.8.4 IDENTITY CARD

At the beginning of each academic year, a regular bonafide student is issued a smart Identity Card with his/her latest photograph printed it, on payment of the necessary charges. The students must wear the I-card while on campus. I-card is also necessary for appearing at all tests and examinations. If a student leaves the course halfway, after taking admission, he/she must surrender the I-Card in the Academic office.

### 3.8.5 WORKING HOURS

- (a) Academic Timings: The academic working hours of the institute are between 8.30 a.m. to 5.30 p.m., with lunch break from 12.35 to 1.30 p.m.
- (b) Office Hours:  
10.30 a.m. to 6.00 p.m., with lunch break from 1.15 to 1.45 p.m. - on all working days.  
Cash Counter: 11.00 a.m. to 1.15 p.m. and 1.45 p.m. to 4.00 p.m.

The office will remain closed on second and fourth Saturdays of a month, in addition to Sundays and public holidays.

### 3.8.6 GENERAL

The medium of instruction for all courses is English.

**Physical fitness:** The Vice Chancellor at his discretion may refer any candidate to the appropriate medical authority for ascertaining the physical fitness of the candidate to undergo the requirements of the course. The report of medical authority and the action taken by the Vice Chancellor shall be submitted to the Regional Head of Technical Education for information. It is to be noted that physically handicapped candidates are not provided with any additional facilities as far as the academic activities pertaining to the course is concerned.

The Vice Chancellor may verify the antecedents of any candidate through the appropriate police authority. The report received from police authority and the action taken by the Vice Chancellor shall be submitted to the Regional Head of Technical Education for information.

Not with standing anything contained in these Rules, if the Govt. / Institute takes any policy decision pertaining to F.Y. admissions, the same shall be brought in to effect at that point of time.

### 3.8.7 CONDUCT AND DISCIPLINE FOR ALL STUDENTS:

Students while studying at ICT, if found indulging in any anti-national activity contrary to the provisions of Acts and Laws enforced by Government or in any activity contrary to Rules of discipline, will be liable to be expelled from the Institute without any notice by the Vice Chancellor of the Institute.

**Action against ragging:** Maharashtra Prohibition of Ragging Act 1999 which is in effect from 15th May 1999 has the following provisions for Action against Ragging.

- a) Ragging within or outside of any educational institution is prohibited,
- b) Whosoever directly or indirectly commits, participates in, or propagates ragging within or outside any educational institution shall, on conviction, be punished with imprisonment for a term up to 2 years and/ or penalty, which may extend to ten thousand rupees.
- c) Any student convicted of an offence of ragging shall be dismissed from the educational institution and such student shall not be admitted in any other educational institution for a period of five years from the date of order of such dismissal.
- d) Whenever any student or, as the case may be, the parent or guardian or a teacher of an educational institution complains, in writing, of ragging to the head of the educational

institution, the head of the educational institution shall, without prejudice to the foregoing provisions, within seven days of the receipt of the complaint, enquire into the matter mentioned in the complaint and if, *prima facie*, it is found true, suspend the student who is accused of the offence, and shall, immediately forward the complaint to the police station having jurisdiction over the area in which the educational institution is situated, for further action. Where, on enquiry by the head of the educational institution, it is found that there is no substance, *prima facie*, in the complaint received; he/ she shall intimate the fact, in writing, to the complainant. The decision of the head of the educational institution shall be final.

- e) If the head of the educational institution fails or neglects to act in the manner specified in section "d" above when a complaint of ragging is made, such person shall be deemed to have abetted the offence and shall, on conviction, be punished as provided for in section "b" above.

If any of the statement made in application form or any information supplied by the candidate in connection with his or her admission is later on at any time, found to be false or incorrect, his or her admission will be cancelled, fees forfeited and he or she may be expelled from the Institute by the Vice Chancellor.

**Note:**

The orders issued by the Hon'ble Supreme Court/High Court/Government regarding Prohibition of Ragging Act, will be made applicable as and when issued. The same shall be binding on all concerned.

**See detailed booklet appended in this Handbook.**

### **3.9 VARIOUS GOVERNMENT CONCESSIONS IN FEES AND THEIR REQUIREMENTS**

Following are the category-wise/ concession-wise requirements to be fulfilled by the students at the time of admission to the ICT.

The various types of application forms will have to be procured by the students at the time of admission and the duly completed forms along with necessary documents MUST BE SUBMITTED TO THE GENERAL OFFICE WITHIN FIFTEEN DAYS, failing which, the ICT will not be held responsible for not getting the sanction of relevant concessions from the Govt.

#### **A. Govt. of Maharashtra Freeship/ Govt. of India Scholarship**

Reserved Category students from SC/ST/VJ/DT (A)/NT-B/NT-C/ NT-D/OBC/SBC can apply for Govt. of Maharashtra Freeship / Govt. of India Scholarship.

**RULES:**

**Govt. of India Scholarship** - Annual Income limit for VJ/DT(A)/ NT-B/ NT-C/ NT-D/ OBC/ SBC students should be below Rs.1,00,000/- p.a. and for SC students below Rs. 2,00,000/- and for ST students below Rs.2,50,000/- p.a. to submit claim for Govt. of India Scholarship.

**Govt. of Maharashtra Freeship** - Annual Income limit for VJ/DT(A)/ NT-B/ NT-C/ NT-D/ OBC/ SBC students should be above Rs.1,00,000/- p.a. and for SC students above Rs. 2,00,000/- and for ST students above Rs.2,50,000/- p.a. to submit claim for Govt. of Maharashtra Freeship.

**All the rules issued by the Govt. will be applicable to Post Graduate Students with Fellowship have less / no freeships.**

The Application Form should be filled up On Line by the HSC/HSSC Board students. Such students should take out print of the filled form along with attested photocopies of the following documents and submit to the Academic Office (Mrs. Asha Bhangre). Students from other than HSC/HSSC Board should fill up paper version of the application form.

1. Income Certificate of the parents for year 2019-20.

For Freeship - Income Certificate of the parents for year 2019-20 from Tehasildar OR latest Form 16 A of the parents obtained from the employer.

AND

Non Creamy Layer Certificate for the current year (Only for VJ/DT(A)/NT-B/NT-C/ NT-D/OBC/SBC, Not for SC/ ST) - valid up to 31<sup>st</sup> March 2020.

For Scholarship - Income Certificate of the parents for year 2019-20 from Tehasildar.

2. For Fresh ST students other than Mumbai Board - Change of District Certificate (Zilla Badal Dakhala)
3. Caste Certificate - signed by Special Executive Magistrate.
4. Caste Validity Certificate
5. Ration Card
6. Mark sheet of the last annual examination passed.
7. Admission Fee receipt of 2019-20.
8. In case of GAP period in education GAP CERTIFICATE must be submitted.
9. Hosteller claiming Govt. of India Scholarship should submit Hostel Certificate for the academic year 2019-20.

**B. Hostel Allowance**

Reserved Category candidates of SC/ ST/ VJ-NT/ SBC categories, staying in Hostel and applying for Govt. of India Scholarship can apply for Hostel allowance online on E-Scholarship Website of Samaj Kalyan.

After admission to hostel, students should contact Academic Office.

The attested copies of the following documents should be attached with the Application Form.

1. Income Certificate of the parents for year 2019-20 from Tehasildar.
2. Caste Certificate - signed by Special Executive Magistrate.
3. Caste Validity Certificate.
4. Mark sheet of the last annual examination passed.
5. Admission Fee receipt of 2020-21.
6. Hostel Certificate and Hostel fee receipt for the academic year 2020-21.

**C. Govt. of Maharashtra Freeship to Sons and Daughters of Primary and Secondary School Teacher**

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Service Certificate of parent should be countersigned by Education Inspector with Date of Retirement mentioned therein.
2. Ration Card.
3. Mark sheet of the last annual examination passed.
4. Admission Fee receipt for the academic year 2020-21.

**D. Freeship to Economically Backward Class (EBC) Students**

Income Limit for the EBC Students to claim this freeship is Rs. 1,00,000/- p.a.

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Income Certificate of the parents for year 2019-20 from Tehasildar.
2. Ration Card.
3. Mark sheet of the last annual examination passed.

4. Admission Fee receipt for the academic year 2020-21.

**E. Freeship to Sons and Daughters of Ex-Servicemen**

The Application Form, should be obtained from the Academic Office at the time of candidate's admission and attested photocopies of the following documents must be attached while submitting the claim form.

1. Ex-Serviceman Certificate.
2. Ration Card.
3. Mark sheet of the last annual examination passed.
4. Admission Fee receipt for the academic year 2020-21.

**F. Merit cum Means Based Scholarship of Government of India (Muslim, Sikh, Buddhist, Christian, Zoroastrians (Parsi)**

For application form, eligibility criteria and documents to be submitted please see [www.dte.org.in](http://www.dte.org.in). After completing the form along with required documents, it should be submitted to the ICT Academic office (Mrs. Asha Bhangre).

**G. Government of Maharashtra Scholarship for the Minority Communities Students Pursuing Technical and Professional Education**

(Muslim, Sikh, Buddhist, Christian, Zoroastrians (Parsi) and Jain minority communities)

For application form, eligibility criteria and documents to be submitted, please see [www.dte.org.in](http://www.dte.org.in). After completing the form along with required documents, it should be submitted to the ICT Academic office (Mrs. Asha Bhangre).



# **INFRASTRUCTURE LIBRARY, HOSTELS, COUNSELLING**



## 4.1 PROFESSOR M. M. SHARMA LIBRARY

### INTRODUCTION:

Established in the year 1934, Prof. M M Sharma Library functions as the central library of the institute and can be called one of the best special libraries in the country. It performs a dual role of an Academic Library as well as a Research Library, catering to the information needs of the in-house students and faculty, in particular, and, the academic and research community, in general. It is housed in a separate Ground Plus two-storied building and follows a completely open-access concept. It has a specialized collection in Chemical Engineering, Chemical Sciences, Chemical Technology and Pharmacy and its allied fields. The library can boast of rich heritage collection of old classic books and bound volumes dating back to 1930s. But along with the traditional collection it has a significant digital collection as well. Currently has access to more than 500 electronic journals. Has access to databases such as Reaxys, Sci-Finder, Scopus, Web of science, etc. The library is fully computerized using the library management software called Koha. It can be termed as a hybrid library with best collection of printed and digital documents. The library is also a member of E-Shodh Sindhu Consortium.

### LIBRARY TIMINGS:

On Working days : 8:30 a.m. – 8:30 p.m.

On 2<sup>nd</sup> and 4<sup>th</sup> Saturdays, Sundays and holidays : 11.00 a.m.– 6.00 p.m.

Throughout the year the library remains closed only on four days, viz. Independence day, Republic day, Ganesh Chaturthi, and Dassera.

### LIBRARY LAYOUT:

The Library is a ground plus two storied building. The layout is as follows:

|              |   |
|--------------|---|
| First Floor  | Book Collection and Circulation counter   |
| Second Floor | Current Journals (latest issues), Reference Book Section, Theses Section, Book Bank Section |
| Ground Floor | Bound volumes (Back Issues) of Journals, Photocopying Section                               |

### MEMBERSHIP:

The bonafide students and faculty of the institute have book lending facility. Book borrowing facility can be availed against ID card.

### LIBRARY PORTAL:

Library portal is hosted on the internet at <http://ictlibrary.firstray.in/>

### LIBRARY COLLECTION:

#### Printed Resources

- **Books:**

The library has a very rich collection of books. The spectrum of the book collection ranges from as old as dating back to 1930s to the latest. The collection has few rare and classic books which is regularly updated with the latest updated books in the area of Chemistry, Applied Chemistry, Chemical Technology, Chemical Engineering, Pharmacy, Energy and Environmental Engineering, Biotechnology, Food Technology and Fermentation, Polymer Science and Technology, Textile Science and Technology, Oils and Surfactants, Dyestuff Technology.

**Book Bank** collection is a special collection of Text Books which are issued to students for a longer period.

**Access:** Books can be searched through the computerized catalogue at <http://ictlibrary.firstray.in/>

Also two terminals are available on every floor to search through the computerized catalogue.

- **Printed Journals:**

The library subscribes to a number of scholarly journals in different specialized areas from various renowned publishers like Elsevier, Wiley, Sage, Thieme, RSC, ACS, Springer, etc.

**Access:** Journals can be searched through the computerized catalogue at <http://ictlibrary.firstray.in/>. Also two terminals are available on every floor to search through the computerized catalogue.

- **Theses:**

A collection of all the Theses submitted by PhD and Master's students are stored in the library and are available for reference to students.

**Access:** Theses can be searched through the computerized catalogue at <http://ictlibrary.firstray.in/>. Also two terminals are available on every floor to search through the computerized catalogue.

- **Reports:**

This collection comprises of Bios, Cios and Fiat reports and various other research reports.

**Access:** Reports can be searched through a computerized catalogue. Two terminals on every floor are available to search though the computerized catalogue.

- **Bound Volumes:**

The older issues of journals are bound into volumes and are available for reference.

**Access:** Printed catalogue of all the bound volumes is available at the ground floor in the Bound Volume section.

## DIGITAL RESOURCES

- **Databases**

The Library subscribes to a number of indexing and abstracting and informative databases

**Scopus:** Scopus is the largest abstract and citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world's research output in the fields of science, technology, medicine, social sciences, and arts and humanities, Scopus features smart tools to track, analyze and visualize research.

**Access:** IP based access is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal. <https://www.scopus.com/>

**Reaxys:** Reaxys is a web-based tool for the retrieval of chemistry information and data from published literature, including journals and patents. The information includes chemical compounds, chemical reactions, chemical properties, related bibliographic data, substance data with synthesis planning information, as well as experimental procedures from selected journals and patents. It is licensed by Elsevier.

**Access:** IP based access is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal. <https://www.reaxys.com/>

**Sci-Finder:** SciFinder is a research discovery application that provides unlimited access to the world's most comprehensive and authoritative source of references, substances and reactions in chemistry and related sciences. SciFinder offers a one-stop shop experience with flexible search and discover options based on user input and workflow.

**Access:** IP based access is available throughout ICT campus. Registration is mandatory for access. For registration you require email id of the institute. Link is accessible through the library portal. <http://www.cas.org/products/scifinder>

**Web of Science:** Web of Science is an online subscription-based scientific citation indexing service now maintained by Clarivate Analytics that provides a comprehensive citation search. It gives access to multiple databases that reference cross-disciplinary research, which allows for in-depth exploration of specialized sub-fields within an academic or scientific discipline.

**Access:** IP based access is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal. <https://login.webofknowledge.com>

- **eJournals**

The library subscribes to a number of electronic journals from renowned publishers like Elsevier (Science Direct), Wiley, Thieme, Springer, Taylor and Francis, RSC, ACS, Begell, Bentham Science, Springer Nature, etc. Also has access to a huge number of ejournals through Inflibnet eShodhsindhu consortium.

**Access:** IP based access to all the ejournals is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal.

- **eReference Sources**

**eReference Module in Chemistry, Molecular Sciences and Chemical Engineering**

Elsevier Reference Modules include thousands of cross-references and links to the related book chapters and journal articles available to you on ScienceDirect, providing the full spectrum of the subject on one easy platform.

**Access:** IP based access to the eReference Module is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal.

**Begell Heat Exchanger Design Handbook (HEDH) – Multimedia edition**

Reference source for heat exchanger design and associated technologies. The print edition has been converted to a fully searchable interactive web-based multimedia product. The content is presented in an exciting interactive HTML format with in-text unit conversion and references, widgets for key heat transfer calculations, wizards to guide heat exchanger selection and 3D interactive visualization of equipment.

**Access:** IP based access to multimedia handbook is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal.

- **eBooks**

Access to a collection of electronic Books published by RSC, ACS, Elsevier, Begell, T&F and Pearson eTextbooks is available.

**Access:** IP based access to all ebooks is available throughout ICT campus. Registration is not mandatory for access. Link is accessible through the library portal.

- **eVideo Journal**

Access to eVideo Journal published by Jove is available.

Access: Link is accessible through the library portal. <https://www.jove.com/journal>

- **eTheses**

The eTheses of ICT as well as other universities are available on inlibnet consortia eShodhganga.

**Access:** Link is accessible through the library portal. <http://shodhganga.inflibnet.ac.in/>

- **ePatent Database**

Library subscribes to electronic patent database called Derwent Innovation (DI).

Access: Contact the library to access this database.

- **Plagiarism check facility**

Similarity check or plagiarism check through software is available for PG students.

- **eWriting Assistant**

Access to Grammarly is available which assists you in writing and checking grammar and with better vocabulary.

Access: For access registration is mandatory. For registration write an email to [library@ictmumbai.edu.in](mailto:library@ictmumbai.edu.in). The details for registration and how to use would be sent through email. You require institutional email id for registration.

**Services:**

|                               |                                |
|-------------------------------|--------------------------------|
| Circulation Service           | Reference and Referral service |
| Current awareness Service     | Bibliographic Service          |
| Photocopying service          | User Orientation programs      |
| E-resources Training Programs | Book Bank Service              |

**Facilities:**

Reading Hall • e-Library • Wi-Fi

**Events/Training Programs:**

Training programs for the usage of e-resources are organized by the library regularly. Such programs and events are announced through emails.

**Contact:** Tel: +91-22-33611127-29, Email: [library@ictmumbai.edu.in](mailto:library@ictmumbai.edu.in)

## 4.2 HOSTELS

### 4.2.1 PREAMBLE

ICT has four hostel blocks on the campus including 2 boys' and 2 girls' hostels. The total number of hostel accommodation seats available for the students at the ICT is nearly 900 (for all courses and years) including 300 lady students.

Hostel No. 1, is the first hostel built in 1951, as University and Birla Hostel, with provision of accommodation for all students of the University of Mumbai. In 1966, Hostel No. 2 was built for accommodating UG and research students with capacity of accommodating 120 students. In 1987, Hostel No.3 was built in 1990 to accommodate the students of ICT (then UDCT). Hostel No. 5, a 7-storey building with the capacity to accommodate 352 students was built during early 2000s and occupied in 2005. The hostel has a good gymnasium and play grounds with sports facilities for in-door and out-door sports activities. Guest room are located in hostel no. 5 which can be used by parents (charges applicable) whenever they visit ICT to meet their wards.

Wardens manage all the affairs of the hostel and are assisted by hostel office staff and student committees headed by general secretaries of hostels. Hostels have 3 Mess which are run internally by the Mess committees headed by Warden. For cleanliness and maintenance of hostels, support staff is appointed. There is a Medical facility available in the hostel.

Hostel demands healthy environment of commitment and discipline among the students. Students are encouraged to develop community life, taking care of their physiological and emotional problems and shape themselves to be better citizens and leaders of tomorrow.

### 4.2.2 PROCESS OF ALLOCATION OF HOSTELS

**ADMISSION TO THE INSTITUTE DOES NOT GUARANTEE ADMISSION TO THE HOSTEL.** Students need to apply to the hostel separately. Admission would be strictly on merit basis subject to availability of seats. Hostel seats will be reduced for the academic year 2020-2021 to ensure adherence to the rules of social distancing. To secure hostel admission, students must compulsorily have health insurance.

1. Only bonafide students of ICT are entitled for hostel admission.
2. Hostel No. 1 and 5 are allotted to boys. Hostel No. 2 and 3 are only for girls. All the hostels are unaided and maintained by the Institute. Hostel No. 1 is allotted to 1<sup>st</sup> year undergraduate and Master's degree students Hostel No. 3 is allotted to 1<sup>st</sup> year undergraduate, Master's and Doctoral girl students.
3. Total number of seats available for fresh admissions is about 240 per year, as per the table below :

| Course   | Number of admissions in the hostel  |
|--|---|
| First year UG admissions<br>(B.Chem.Engg., B.Pharm. and B.Tech.)           | 40 girls and 90 boys maximum  |
| First year Master's Degree (M.Chem. Engg., M.E., M.Tech., M.Sc., M.Pharm.) | 40 girls and 75 boys depending on availability  |
| Hostel admission to new doctoral students                                  | Subject to availability created due to vacating the hostel by earlier Ph.D. students with respect to the departmental allocation. |

**Please note that for academic year 2020-2021 the hostel seats would be reduced than usual to ensure adherence to the rules of social distancing. Revised seats structure would be made available on the Institute's website based on the directives from the government at the time of admission.**

4. Accommodation in hostels cannot be guaranteed to all the students who are admitted to ICT for various courses. Preference will be given to under graduates.
5. Admission will be offered strictly on merit basis. Preference will always be given to out-station students who come from places beyond the limits of Mumbai and suburbs (i.e.

beyond Virar, Titwala, Ambernath, Panvel as well as other places which are beyond 70 km from the institute). As a proof of stay beyond the limits of Mumbai and suburbs, they are required to upload scan copies of ration card/ Adhar card and school-leaving certificate. Any false representation in this regard will be strictly dealt with.

6. Student who have taken admission to ICT can register on-line through ICT log in portal ([www.ictmumbai.co.in](http://www.ictmumbai.co.in)) to apply for hostel accommodation. Students need to upload a residence proof, a medical certificate from your family doctor (with clearly mention about chronic health problem or allergy if any). Hostel authority will approve the form and will give call for admission depending upon the availability of seats.
7. Students must confirm the hostel admission by paying the required fee on-line. The hostel fee will be paid by on-line mode only.
8. Admission to hostel is linked to department and course quota. If students cancel the ICT admission and take the admission to another course in ICT need to register again for hostel admission in such case the hostel admission will not be guaranteed.
9. The admission to the hostel will be done by the respective Warden and Hostel Office in concern with Head Warden. All the rights for hostel admissions are reserved with respective Warden, ICT.
10. The Warden of the respective hostel has all the rights to change/transfer a student from one room to other within the hostel for convenience of the administration. Also, every year the student may be shifted from the accommodation provided in earlier year.
11. In case of the year-drop, the candidate will have no claim for hostel accommodation and will have to vacate the hostel. Readmission to hostel for such student on clearing the year-drop will not be guaranteed.
12. Ph.D. Students will not be eligible to stay for more than 5 years in hostel.
13. Every student taking admission to the hostel has to sign an undertaking (copy of which is available in chapter 9) at the time of admission.

#### **4.2.3 HOSTEL FEES**

| Hostel       | Category | Type of Accommodation  | Hostel Capacity | Fees for year, Rs.* |
|--------------|----------|------------------------|-----------------|---------------------|
| Hostel No. 1 | Boys     | Double Seated and More | 283             | 23,500/-            |
| Hostel No. 2 | Girls    | Double Seated and More | 216             | 23,500/-            |
| Hostel No. 3 | Girls    | Double Seated and More | 129             | 27,500/-            |
| Hostel No. 5 | Boys     | Double Seated and More | 449             | 30,000/-            |

\* Hostel fees for the year 2020-21 will be increased. Revised fee structure would be made available on the website at the time of admission.

\*Accommodation fees should be paid online following the procedure detailed on [www.ictmumbai.co.in](http://www.ictmumbai.co.in)

#### **4.2.4 HOSTEL MESSES**

It is mandatory for all hostel students to join the Hostel Mess allotted to them. Hostels are having two messes for boys and one mess for girls. Each mess is run by the students on co-operative “no-loss - no-profit” basis under the Control of the concerned Warden. Hostel students have been managing their messes since 1951, with an excellent tradition and help student committee members to develop managerial skills. Typical mess charge includes breakfast and two meals a day. Mess Deposit Advances / Monthly Expenses will be extra as per the norms of the respective messes. Mess deposit of INR.5,000/- is required to be paid at the time of joining of Mess, which will be refunded at the end of the stay. All the mess members are required to pay INR 25,000/- towards advance mess charges from which the monthly mess bill will be deducted every month.

## 4.2.5 HOSTEL MANAGEMENT

### WARDENS AT ICT HOSTELS

| Hostel No.    | Warden  | Telephone              |
|---------------|---|------------------------|
| 1             | Dr. Vijay Kumar A.<br>Warden Hostel no.1<br>(Department of Chemistry)<br>Email: <a href="mailto:v.kumar@ictmumbai.edu.in">v.kumar@ictmumbai.edu.in</a>  | 3361 2614              |
| 2             | Mrs. Madhavi Wadkar<br>Warden Hostel no. 2<br>(Department of Librarian)<br>Email: <a href="mailto:mm.wadkar@ictmumbai.edu.in">mm.wadkar@ictmumbai.edu.in</a>  | 3361 1126              |
| 3             | Dr. J. T. Waghmare<br>Warden Hostel no. 3<br>(Department of Oils, Oleochemicals and<br>Surfactants Technology)<br>Email: <a href="mailto:jt.waghmare@ictmumbai.edu.in">jt.waghmare@ictmumbai.edu.in</a> | 3361 2510              |
| 5             | Dr. P. D. Vaidya<br>Head Warden and Warden Hostel no. 5<br>(Department of Chemical Engineering)<br>Email: <a href="mailto:pd.vaidya@ictmumbai.edu.in">pd.vaidya@ictmumbai.edu.in</a>                    | 3361 2014              |
| Hostel Office | For details please contact<br>Mrs. Surekha Kamble- Senior Clerk<br>Mr. Sanjay Bansode- Accountant<br>Ms. Aarti Karanjkar- Clerk   | 3361 1452<br>3361 1453 |

## 4.2.6 GENERAL

- Guest Room facility is available at Hostel No. 5 only for parents who wish to meet their Wards studying at ICT on payment basis. The guest room shall be available for a maximum



10 days per year at concessional rate to the parents and immediate relations (siblings) of students and staff (faculty and support staff) at the below mentioned rates

#### **Concessional rates**

INR 800/-per day per room for AC Room

INR 350/-per day per room for Non AC Room

#### **Regular Rates**

INR 2,200/- per day per room for AC Room

INR 800/- per day per room for Non AC Room

2. Hostels are equipped with Mess, T.V. Room, Reading Room, Playground, Health Centre, Gymkhana, Library and Study Room Facilities.
3. Senior MBBS doctors are available in the health centre of the hostel on all working days at designated times at free of cost for all the students residing in ICT hostels.
4. All students are covered under Accident Policy of the Institute.
5. Each hostel block is supervised by a Warden, who is a faculty member of the Institute.
6. It is mandatory that all the new entrants to the hostels get their hostel admission forms signed by the Student's Counselor.

#### **4.2.7 DISCIPLINE AND DECORUM**

1. Smoking and consumption of alcohol is strictly prohibited in hostels and public places in the entire campus of ICT. A strict disciplinary action will be taken against the student involved in misdemeanour and illegal activities.
2. All the students have to report in their respective hostels by 11.30 pm.
3. All senior students must create a conducive and healthy atmosphere in the rich tradition of the ICT and the hostels. Several hostel residents have attained very high positions in their profession, as industrialists, educators and policy makers and brought laurels to the institute; including Padma awards of President of India. Two former Directors of the ICT, Professor M.M. Sharma and Prof J.B. Joshi, and the Former Vice Chancellor, Professor G.D. Yadav have been hostel residents on this campus. Dr. P. D. Vaidya, Dr. Jyotsna Waghmare, who are hostel wardens currently were themselves ICT Hostel residents during their student days. Several other faculty members have also been hostel residents. Faculty and staff quarters are also situated near the hostels bringing a sense of community feeling. Faculty members participate in the programmes arranged by the hostelites and often make themselves available for counselling, whether they are wardens or not. Hostel Day is a special annual day in the lives of hostelites to show their skills and talents in sports, cultural programmes and the like.
4. Another grand tradition of the hostels is that the past students, from all over the world, try to assist the hostel activities by providing monetary help, either through personal donations or company sponsorships.
5. Action against ragging: Maharashtra Prohibition of Ragging Act 1999 is in effect from 15th May 1999. (See details later from UGC in this regard). Any case of ragging should be reported by the victim in writing within three days of the incident to the respective warden with copies marked to: respective Hostel Wardens, Head Warden, Dean- Student Affairs Prof. P D Amin ([pd.amin@ictmumbai.edu.in](mailto:pd.amin@ictmumbai.edu.in)) and Human Resource Development, Prof. P A Mahanwar ([pa.mahanwar@ictmumbai.edu.in](mailto:pa.mahanwar@ictmumbai.edu.in)), and Registrar, Professor R. R. Deshmukh ([registrar@ictmumbai.edu.in](mailto:registrar@ictmumbai.edu.in)).
6. Detailed rules and regulations will be provided during admission.

## 4.3 COUNSELLING SERVICES

Counseling services are available for the benefit of all the students of the Institute - right from First year to those doing their Doctorate. The Counselor - **Ms. Malini Shah**, with her in-depth knowledge of Philosophy and Psychology, has been actively participating in this important activity. The Counselor deals with all types of personal and academically related problems and students are free to meet her from Tuesday to Friday any time between 11.30 a.m. and 4.30 p.m.

**It is mandatory for all the first year students (UG and PG) including hostellites to meet the Counselor [in her office on 1<sup>st</sup> floor, Godrej Students Centre] (Intercom No. 1351), in groups of ten for an interactive session.** Interactive Sessions are held from time to time to make the students aware of their plus points and weak points. Later on, a one - to - one session is held in order to help them develop confidence and overcome difficulties which may be too personal. All the students are free to meet **Ms. Malini Shah** any time they feel by prior appointment.

## 4.4 DAYCARE SERVICES

### Day Care Service for children:

Professional Day Care service for children is available in the campus. Faculty members, Support staff, Post Doc fellows, Ph.D. research scholars having children can avail this facility.

Fees details are as follows:

Child up to 3 years INR 4000 per month

Child above 3 years INR 3000 per month

(Does not include Food)

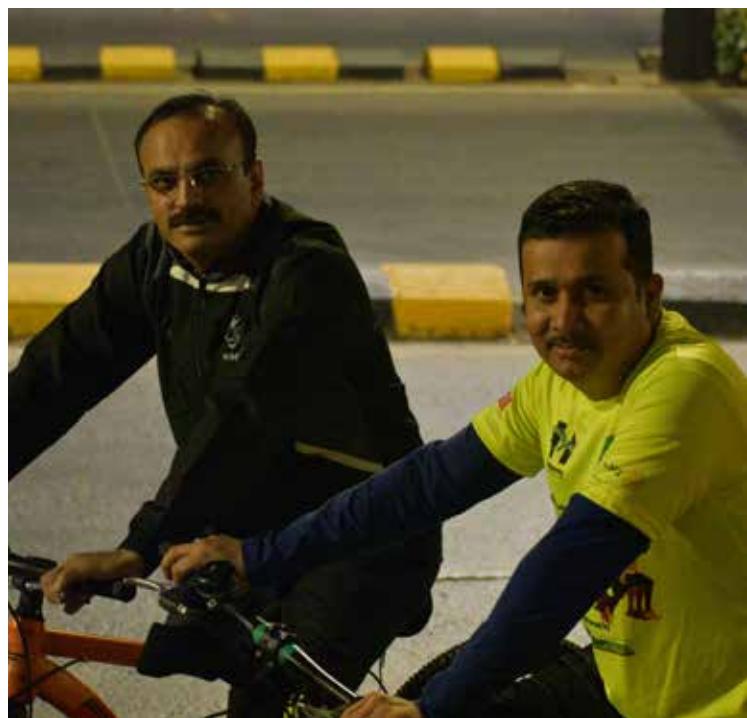
Application form would be available with the administration department.

### ▼ Institute Canteen



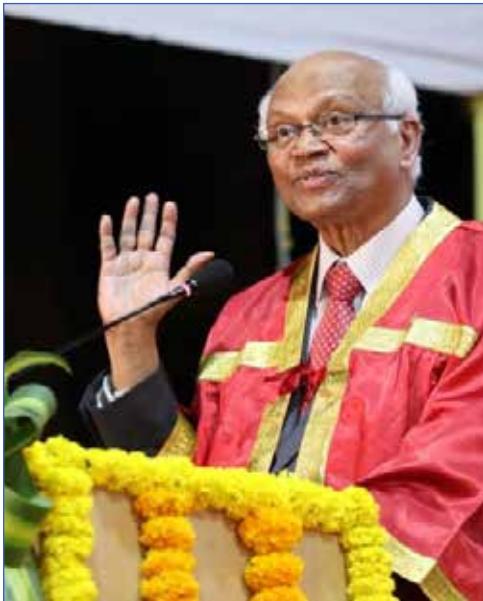
## Student Activities







# ASSOCIATIONS, ENDOWMENTS AND PLACEMENT



INSTITUTE OF CHEMICAL TECHNOLOGY, MUMBAI  
(CATEGORY-I UNIVERSITY UNDER SECTION-3 OF UGC ACT-1956)  
FIRST ELITE STATUS AND CENTRE OF EXCELLENCE- GOVERNMENT OF MAHARASHTRA

## THE EIGHTH CONVOCATION

Tuesday, 19<sup>th</sup> March 2019

PADMAVIBHUSHAN Prof. R. A. Merchant  
CHANCELLOR, INSTITUTE OF CHEMICAL TECHNOLOGY

Shri Ajay Piramal  
CHANCELLOR, PIRAMAL ENTERPRISES

PADMASHRI Prof. Dr. G. D. Yadav  
CHANCELLOR, INSTITUTE OF CHEMICAL TECHNOLOGY





## 5.1 TECHNOLOGICAL ASSOCIATION

The Technological Association (TA) is the student body of ICT that conducts co-curricular and extra-curricular activities throughout the academic year. The 32-member strong team is presided by the Vice-Chancellor, Prof. A. B. Pandit, while Dean Students and Alumni Affairs who is ex-officio Vice President. Cultural activities, including those related to music, dance, art, literature are organized by the different clubs under TA. On-campus, award winning festivals are also held such as the annual technical festival of the institute, Vortex, that allows students from all over the country to present their innovative ideas and research work and also solve industry defined problems. The annual inter-college cultural festival, MANZAR has a plethora of programs, specifically concerts and workshops that serve to enrich the cultural aspect of the institute. The intra-college festival, FunTech, is one of the oldest event on campus and involves several sporting and cultural events for all the students ICT. SportSaga is the annual inter-college sports festival of the institute that includes both, mainstream sporting as well as informal events and also conducts the trademark ICT Marathon each year.

Marathi Literary Association of Institute of Chemical Technology popularly known as MANTHAN is one the oldest club of TA started in 1980. It conducts various kinds of programs every year based on Marathi literature to inculcate and develop liking towards the native state language, Marathi. MANTHAN upholds rich tradition of presenting quality programs. Sports Club conducts numerous sports activities with sole aim to promote sports, fitness and team spirit. The events include inter-college tournaments of numerous sports, adventures like midnight cycling, monsoon trek and faculty games etc. The TEDx club organizes activities such as TEDxMAS, MotivaTED and several inspiring talks by renowned personalities.

The in-house technical journal, Bombay Technologist is also run under the purview of the TA and encourages the art of scientific writing among students. An entrepreneurship cell (E-Cell) was also launched recently that serves to enhance the entrepreneurial culture at ICT. The TA also addresses student grievances and serves as a link between the faculty members and the students.

## 5.2 UDCT ALUMNI ASSOCIATION

UDCT Alumni Association (UAA) (<http://www.udctalumni.org.in/>) was formed in 1989 to foster fellowship and provide a forum to bring together the alumni of UICT, its past and present faculty members on a common platform. A major activity of the UAA is to promote infrastructure growth at ICT including development of laboratories and also to support student growth both academic and co-curricular. UAA also promotes the activities of the ICT in India and abroad as well as institutes awards and fellowships to alumni/well wishers. For the last over 30 years, UAA has striven hard to achieve its objectives with valuable and timely support of the members, well wishers. UAA currently has more than 6700 life members and 14 Patron members. UAA plays a major role in following specific domains:

### 1. Providing direct financial assistance to ICT :

- To support infrastructure development of the institute
- To support student activities organized by Technological Association
- To support needy students in the form of loans, which students can pay back in installments after graduation
- To provide books in special areas such as management and also assisting the library facilities

### 2. Enhancing studentship at ICT :

- Sponsoring factory visits
- Arranging lectures, seminars, symposia, workshops
- Awarding best students of ICT for their meritorious performance

- Supporting the Training and Placement Service to the ICT current students.
- Encouraging, promoting, supporting providing, spreading and arranging for education and research in Chemical Technology, Chemical Engineering, Pharmaceutical Sciences and related Basic Sciences, Management studies and related topics.
- A Certificate course in practice of chemical technology is fully run and supported by UAA specially for the third year undergraduate students with an objective of career guidance and enhancing the knowledge on the practical aspects
- The Post Graduate Diploma Course in Chemical Technology Management (CTM) for the Ph.D. students in ICT is also supported by UAA

**3. Organizing Institution level events :**

- Technology Day and UAA foundation day event where UAA Distinguished Alumnus awards are given to alumni for their contributions to entrepreneurship and professional development In addition, UAA Young achiever award is also given to alumni below the age of 35 years for their exceptional professional achievements
- UAA Annual Day celebrations where UAA Distinguished Alumnus awards are given in the category of Academics, Research and extra mural
- UAA also assists in organization of ICT Foundation and Annual day

**4. Managing the Alumni Network : Managing the database of all alumni**

- Managing the database of all alumni
- Increasing UAA Membership Maintaining UAA Website
- Issuing UAA bulletins.

**5. UAA Chapters**

UAA has local chapters in the country at Ahmedabad, Ankleshwar, Delhi NCR region, Hyderabad, Kolhapur, Marathwada, Pune, Tarapur and Vapi as well as abroad in China, UK, USA (Atlanta, Houston and Bay area), Singapore, and Thailand

## 5.3 CULTURE OF ENDOWMENTS

The ICT has sanctioned positions of 108 faculty (29 Professors, 38 Associate Professors and 41 Assistant Professors) and a support staff of 240. The ICT has a tradition of establishment of endowments with an objective of supporting faculty positions, foreign travel assistance, merit-cum-means scholarships, staff welfare, library, campus development, research fellowships and seed money for research by young faculty. There are 90 endowments in the Institute. All these endowments have been established through generous donations by alumni, industries, philanthropists and well wishers. Only part of the interest (upto 50-70%) is used towards the purpose of the endowment and the remaining is ploughed back into the corpus allowing it to grow with time.

### 5.3.1 FACULTY ENDOWMENTS

1. R.T. Mody Professor of Chemical Technology and Director (1933)
2. Sir Dorabji Tata Reader in Pharmaceutical Chemistry (1943)
3. Singhanee Reader in Chemical Engineering (1936)
4. Singhanee Lecturer in Chemical Engineering (1936)
5. Singhanee Lecturer in Pharmacy (1943)
6. Singhanee Lecturer in Paint Technology (1946)
7. Singhanee Associate Lecturer in Chemical Engineering (1936)
8. Singhanee Associate Lecturer in Food Technology (1945)
9. Sir Homi Mehta Reader in Oil Technology (1943)
10. Sir Homi Mehta Associate Lecturer in Food Technology (1943)
11. Darbari Seth Professor of Inorganic Chemical Technology (1995)

14. J.G. Kane Chair of Oil Technology (2008)
15. M.M.Sharma Distinguished Professor of Chemical Engineering (2009)
16. Narotam Sekhsaria Distinguished Professor of Chemical Engineering (2009)
17. R.A. Mashelkar Chair of Chemical Engineering (2009)
18. K.V.Mariwala-J.B. Joshi Chair of Chemical Engineering (2009)
19. Gunavati Kapoor Chair in Pharmaceutical Technology (2009)
20. Dr. John Kapoor lecturer in Pharmaceutical Technology (2010)
21. RCF Professor of Chemical Engineering (2012)
22. Dr. B. P. Godrej Distinguished Professor of Green Chemistry and Sustainability Engineering (2015)

### **5.3.2 VISITING PROFESSORS/FELLOWS/LECTURERS/ORATIONS ENDOWMENTS**

There are 50 endowments which have helped us immensely in attracting the best professionals to the Institute from all over the world who have interacted with UG and PG students, faculty and alumni. The honoraria range from Rs. 5000 to 1.25 lakhs for a period of one day to 15 days. Some eminent faculty from institutes such as MIT, Purdue, Cambridge, Monash, UC Berkeley, UCSB, Montreal have taught UG and PG courses in ICT under these endowments. These lectures form part of audit courses for research students. Besides this public lectures are organized under each endowment. All departments have been benefitted and the list is as follows:

#### **1. GENERAL**

1. Professor B.D. Tilak Distinguished Lectureship
2. Professor B.D. Tilak Visiting Fellowships.
3. Golden Jubilee Visiting Fellowships.
4. "Late Dr. Balwant S. Joshi Distinguished Visiting Professor/ Indian Scientist in Chemical Engineering / Chemical Technology / Applied Chemistry"
5. Shri. B. S. Rajpurohit Visiting Faculty and Oration
6. Shri D. M. Trivedi Lecture in Green Chemistry and Technology
7. Late Professor W. B. Achwal Oration
8. "Late Dr. Balwant S. Joshi Lectureship in Organic Chemistry (including chemistry of Natural Products)/ Bio-organic Chemistry/Biotechnology" - A Technologist responsible for the development of Indian Chemical Industry.

#### **2. DEPARTMENT OF CHEMICAL ENGINEERING**

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

#### **3. DEPARTMENT OF DYESTUFF TECHNOLOGY**

17. K.H. Kabbur Memorial Silver Jubilee Lectureship.
18. Professor K. Venkatraman Lectureship.
19. Pidilite Industries Ltd. Visiting fellow in Dyestuff Science & Technology.
20. Dr. KKG Menon Memorial Lecture
21. Sauradip Chemical Industries Pvt. Ltd. Visiting Fellow in the areas of Dyestuff Technology and Textiles Processing Technology"

- 4. DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY**
  22. Professor G.M. Nabar Endowment Lectureship.
  23. L.N. Chemicals ICT Diamond Jubilee Visiting Fellow
  24. Class of 1966 Visiting Fellowship.
  25. Sauradip Chemical Industries Pvt. Ltd. Visiting Fellow in the areas of Dyestuff Technology and Textiles Processing Technology”
  
- 5. DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY**
  26. Professor A. Sreenivasan Felicitation Lectureship.
  27. Marico Industries Visiting Fellowship
  28. ICT - Lupin Visiting Fellowship for Bioprocess Technology
  
- 6. DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY.**
  29. Professor J.G. Kane Visiting Professorship in Chemical Technology
  30. Professor J.G. Kane Memorial Lectureship
  
- 7. DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**
  31. CIPLA Distinguished Visiting Fellowship in Pharmaceutical Sciences
  32. Themis Medicare - ICT Diamond Jubilee Distinguished Fellowship in Pharmaceutical Sciences
  33. Professor (Mrs.) Malati R. Baichwal Visiting Fellowship in Pharmaceutical Science and Technology
  34. AAIPS- Dr. R. S. Baichwal Pharmaceutical Seminar
  35. Dr. S.K. Pradhan Endowment
  36. Professor V.M. Kulkarni Endowment Fund in Pharmaceutical Science and Technology
  
- 8. DEPARTMENT OF POLYMER ENGINEERING AND TECHNOLOGY AND DEPARTMENT OF SURFACE COATING TECHNOLOGY**
  37. Shri K. S. S. Raghavan - Chemical Weekly Visiting Professorship in Polymer Science and Technology
  38. Indian Plastics Institute (IPI)-ICT Diamond Jubilee Visiting Fellowship in Polymer Processing
  39. Chemimpex Rastogi-ICT Diamond Jubilee Visiting Fellowship in Surface Coatings.
  40. Synpol-ICT Diamond Jubilee Distinguished Visiting Fellow in Science & Technology of Pigment
  41. Tipco-ICT Diamond Jubilee Distinguished Visiting Fellow in Thermosets
  42. Jayvee Organics & Polymers(P)Ltd. Visiting Fellowship in Polymer Additives and Compounding
  43. Shri. Parmanand F. Parikh Endowment
  44. Shri B.S. Rajpurohit Visiting Professorship in Polymer Science and Technology
  45. Sauradip Chemical Industries Pvt. Ltd. Visiting Fellowship
  
- 9. DEPARTMENT OF CHEMISTRY**
  46. Dai-Ichi Karkaria Ltd. Visiting Fellowship
  47. The Dharamsi Morarji Chemical Co. Visiting Fellowship in Chemistry
  48. The (Late) Shri. G.D.Gokhale Endowment Lectureship
  49. Spinco-Biotech - Ramanathan Lectureship
  
- 10. DEPARTMENT OF PHYSICS**
  50. Dr. Mooljibhai Shivabhai Patel Trust Visiting Fellowship in Polymer Physics

### **5.3.3 SCHOLARSHIPS FOR UG STUDENTS**

The ICT supports 251 students under merit-cum-means scholarships. The range is Rs. 3000/- to Rs. 75,000/ per annum per person through several endowments, private trust and annual commitments by alumni. All economically deprived students are given assistance in the form of tuition fees, hostel fees, mess bills and travel assistance to present papers in national conferences. The names of various Merit-cum-Means Scholarships is given below. For details such as number of scholarships, amounts, eligibility and selection criteria interested candidates may contact VC Office of the ICT

#### **I. GENERAL SCHOLARSHIPS**

1. M. S. Patel Trust Merit-cum-Means Scholarship (Three) (Value of Rs. 5,000/- each.)
2. Smt. Badamidevi Chiranjilal Murarka Charity Trust Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
3. Sohrab Mistry Merit-cum-Means Scholarship (One) (Value of Rs. 5,000/- each.)
4. Perin & Jal Khan Merit-cum-Means Scholarship (Three)(Value of Rs. 3,600/- each.)
5. Smt. Parvathy Sitaram Merit-cum-Means Scholarship (One) (Rs. 4,500/- each.)
6. Druman M. Trivedi Merit-cum-Means Scholarship (Two)(Value of Rs. 3,600/- each.)
7. S.L. Venkiteswaran Merit-cum-Means Scholarship (Two) (Value of Rs. 4,500/-each)
8. Late Dr. (Mrs.) Mahalaxmi Bhagwat Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
9. Prof. A.N. Kothare Scholarship (Two) (only for first year, HSC Mumbai Board preferred) (Value of Rs. 5,000/- each)
10. Rukmani and Nagraj Rao Memorial Merit-Cum-Means Scholarship (One) (Value of Rs. 4,000/-)
11. Dr. D.D. Haldavnekar Merit-Cum-Means Scholarship (Three) (Value of Rs.1800/- each.)
12. Smt. Kamala Sankhe Scholarship for girl student (Four) (Value of Rs. 11,000/- each.)
13. Shri Varun Udeshi Merit-Cum-Means Scholarship (Six) (Value of Rs. 35,000/- each.)

#### **II. DEPARTMENT OF DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY, DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY AND DEPARTMENT OF POLYMER AND SURFACE ENGINEERING**

1. Fine Organic Industries Merit-cum-Means Scholarship (Three) (Rs.4500/-each) amount to be decided each year. For the dept. of oil, food and polymer.
2. Kamani Oils Merit-Cum Means Scholarship (two) (Value of Rs. 25,000/- each) (for student from Final Year B.Tech. (Oils) and Final Year B. Tech. (Foods)

#### **III. DEPARTMENT OF CHEMICAL ENGINEERING**

1. Gogri Brothers Scholarship (Four) (value of Rs. 3,000/- each.)
2. Hemraj Lalji Meishry Scholarship (Two) (Value of Rs. 3,000/- each)
3. Dr. Nandkumar Kochar & Raj Kumar Kochar Trust Scholarship (Two)(Value of Rs. 1,000/- each.)(one from S.Y. and one from T.Y. Chem Engg.)
4. Purbhudas Jeevandas Mint Road Wadi Trust Scholarship (Four) (Rs. 3,500/- each).
5. Y. T. Shah Merit-cum-Means Scholarship (One) (Value of Rs. 2,000/-)
6. Vaishnomal Malhotra - K.K. Malhotra Merit-cum-Means Scholarships (Two) (Value of Rs. 9,000/- each)
7. Head Master Muthuswami Merit-cum-Means Scholarship (One) (Value of Rs. 1850/-)
8. Rajendra G. Sardesai Scholarship (Four) (Value of Rs. 10,000/- each)
9. B. Chem. Engg Class of 1962 (Six) (Rs. 5,000/- each).
10. Andanallur Srinivasa Venkatesan & Ranganayaki Scholarship (One) (Rs.3,000/-)
11. Daisy Navaroze Baria Scholarship (One) (Rs. 1,000/-)

12. Dr. Surendra R. Gupta Scholar (Mukut Sah) (one - to be continued for the entire four years course only if he/she secures First Class throughout each of the four years) (Rs. 40,000 Tution fees + Rs. 20,000/- Hostel fees= Rs. 60,000/-) (preferably for a girl student)
13. Sarojben and Pratapray Shah Memorial Scholarship (Six) (Value of Rs.75,000/- p.a. each)
14. Shri Kantilal Ajmera Merit cum Means Scholarship (one) (Value of Rs. 5,000/- p.m.) (Only for one UG student of Chem. Engg.)

#### **IV. LOAN SCHOLARSHIPS**

1. B. Chem. Engg. Class of 1982 (Two) (Value of Rs. 50,000/- each.)

#### **V. DEPARTMENT OF OILS, OLEOCHEMICALS AND SURFACTANTS TECHNOLOGY**

1. Castrol Merit-cum-Means Scholarship (Two) (Value of Rs. 4,500/- each)
2. G.M. Alias Abhyankar Merit-cum-Means Scholarship (Three) (Rs.4,000/-)
3. Shri Keshao Bapurao Kulkarni Scholarship (for one UG student of Dept. of Oils) (Rs. 7500/-)
4. Professor D. R. Rebello Endowment Scholarship (One UG student from Oils Dept. only) (Rs. 5,000 /-)
5. Shri Yadav Acharya Merit-cum-Means Scholarship (One) (Rs. 10,000/-)

#### **VI. DEPARTMENT OF FIBRES AND TEXTILE PROCESSING TECHNOLOGY**

1. Perin & Jal Khan Merit-cum-Means Scholarship (Two) (Value of Rs. 4,000/- each).
2. Mr. Dinshah B. Katrak & Mrs. Goolcheher D. Katrak Merit-cum- Means Scholarship (One) (Value of Rs. 2,000/-)

#### **VII. DEPARTMENT OF FOOD ENGINEERING AND TECHNOLOGY**

1. "Professor P.J.Dubash Memorial – AFST (I), Mumbai Chapter Endowment Scholarships" (One) (Value of Rs. 20,000/-) for UG B.Tech. student in FET (Food Engineering and Technology Department).

#### **VIII. DEPARTMENT OF POLYMER AND SURFACE ENGINEERING**

1. Kumar R. Basu Memorial Merit-cum-Means Scholarship (Two) (Rs. 3,500/- each) (only PPV)
2. Synpol Memorial Scholarship (Five) (Rs. 3,500/- each.)
3. "Ms. Swati Balwant Bhagwat Merit-cum-means Scholarship" for ONE girl student who has passed first year B. Tech. examination in Dept. of Polymer and Surface Engineering and Technology (Rs. 5000/-)

#### **IX. DEPARTMENT OF DYESTUFF TECHNOLOGY**

1. Colour Chem. Ltd. Merit-cum-Means Scholarship (One) (Value of Rs. 3,600/-)
2. Dr. Kishore Manilal Shah Endowment Merit cum Means Scholarship in Dyestuff Technology (for one UG student from First to Final Year) (Value of Rs. 4400/-)

#### **X. DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY**

1. Dr. Krishna S. Manudhane Merit-Cum-Means Scholarship (Three) (Rs.1,800/- each)
2. Dr. R.K. Dhote Charitable Trust Merit-Cum-Means Scholarship (Four) (Rs. 3,600/- each.)
3. Dr. Dhiren and Kailas Thakker Endowment Scholarship (Four) (Rs.15,000/-each.) (only for student from First to Final year B. Pharm. and B.Tech. (Pharma)

**XI. GENERAL SCHOLARSHIPS ON YEAR TO YEAR BASIS**

1. Gunvati Jagan Nath Kapoor Merit Cum Means Scholarship (40) (out of forty 20 for B. Pharm. students) (Value of Rs. 45,000/- each) from I, II, III, & IV year B.Tech. (Pharma), B.Tech. (Other Branches), B. Pharm and B.Chem. Engg., B. Pharm. Pharmaceutical Sciences and Technology, B.Tech. Other Branches, B.Chem. Engg.
2. Mr. Rajen Mariwala Merit-Cum-Means Scholarship (One) (Value of Rs. 9,000/-)
3. Ambuja Cement Merit-Cum-Means scholarship (Fifteen) (Rs. 10,000/- each).
4. Sandra Shroff Merit-Cum-Means Scholarship (Ten) (Value of Rs.20,000/- each).
5. "Dr. Purushottam Janardan Kangle Merit-cum-means Scholarship" for SEVEN students from B.Tech. (Textile) and B.Tech. (Dyesstuff) (Rs. 3000/- each.)

**XII. SCHOLARSHIPS AWARDED DIRECTLY BY THE OUTSIDE TRUST**

1. Excellence Award of Rs. 1,00,000/- and Certificate of Merit under the Narotam Sekhsaria Foundation (NSF) Scholarship Programme for Undergraduate studies in Engineering Rs. 50,000/-
2. Vishwanath Dore Scholarship (C/o ASRA Scholarship) (One) (Value decided by trust)
3. Arvind Memorial Scholarship (ASRA) (one) (only for F.Y. Chem. Engg. Student who have scored highest marks in chemistry at HSC examination) (Value decided by trust)
4. ISCMA Merit Cum Means Scholarship
  - i) Dyes – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - ii) Oils – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - iii) Textile – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - iv) Surface coating – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - v) Polymer – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - vi) Food – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - vii) Pharma – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - viii) B. Pharm. – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
  - ix) Chem. Engg. – 1st, 2nd, 3rd and 4th year – One student each, from 1st, 2nd, 3rd and 4th year total – 4 students (Rs. 5,000/- cash + certificate)
5. Engineers India ltd. Scholarship

## 5.4 CENTRAL PLACEMENT CELL (ICT MUMBAI)

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

Institute has very active Training and Placement Cell which was started under the guidance of Vice Chancellor, Prof. G. D. Yadav in 2010 to organize all the placement and training activities at a central place. It is supported by UAA (UDCT Alumni Association). Prof. Anand V. Patwardhan (Department of Chemical Engineering) is Overall faculty coordinator who is assisted by faculty coordinators and student coordinators from each Department. Placement at ICT is a regular year-long activity and typically organized on Saturdays and Sundays in order to minimize impact on regular academic activities. Companies from various fields evinced interest in recruiting students from ICT at both, bachelor's and master's levels. ICT has always been a favorite hunting ground for corporates wishing to hire bright young engineers and technologists.

**Prof. Dr. Anand V. Patwardhan**  
***Central Placement Coordinator (ICT Mumbai), and***  
***Professor of Chemical Engineering,***  
Email: [av.patwardhan@ictmumbai.edu.in](mailto:av.patwardhan@ictmumbai.edu.in)  
Phone: +91 3361 2019

Our students have been placed in some of the following companies :





*Siyaram's*



**TRIDENT GROUP™**



### **5.4.1 INDUSTRIAL INTERNSHIP:**

#### **ICT Mumbai Campus**

All 3<sup>rd</sup> year UG students of B. Chem. Engg., B.Tech. and B. Pharma undergo 6 weeks in-plant industrial training in various industries. In the academic year 2018-2019, they were placed in about 120 different industries .

All masters students of M.Tech., M.E. and M.Sc. (Science) undergo Industrial internship from two-six months. In the academic year 2019-20, masters students were placed in about 100 different industries for industrial internship programme.

### **5.4.2 OUR STUDENTS PLACED IN SOME OF THE FOLLOWING COMPANIES:**

#### **5.4.3 HIGHER STUDIES:**

Many of ICT bachelor students also prefer to go for higher studies outside and almost all the students get fellowship for higher studies.

**Some of the Universities where ICT students have got admission are as follows:**





# ICT Mumbai - IndianOil Odisha Campus, Bhubaneswar

ଭୁବନେଶ୍ୱର ପ୍ରୌଦ୍ୟ ବିଜ୍ଞାନ ଏତ୍ୱଳେ ଇନ୍‌ସ୍ଟିଟ୍ୟୁଟ୍ ଆଫ୍ ଟେକ୍ନୋଲୋଜୀୟ ବିଭାଗ  
Institute of Technology Bhubaneswar

INSTITUTE OF CHEMICAL TECHNOLOGY MUMBAI  
INDIANOIL ODISHA CAMPUS BHUBANESWAR

## MESSAGE FROM THE DIRECTOR



**I**nstitute of Chemical Technology (Mumbai)-IndianOil Odisha Campus (Bhubaneswar), ICT-IOC, will be completing two successful years on the east coast of India. Within two years, the Institute has made its presence felt in this part of the world by taking a quantum jump from the 1st years' experience into the 2nd academic year. We will now enter into 3rd year of its wonderful and rewarding journey interspersed by some of the big events taking place on a make shift campus at Bhubaneswar. Two gigantic events, one in collaboration with Royal Society of Chemistry and other supported by the presence of one of the iconic personality of India, PadmaVibhushan Professor MM Sharma. ICT-IOC is lucky to have some of the best brains of the country in shaping up its destiny and march towards the zenith of limitless excellence. It takes enormous efforts to visualize and even conceptualize a new Institute within the country's eco-system. Such a daring step was taken by the erstwhile Vice-chancellor Padmashree Professor G.D.Yadav who not only rolled on one but two new Institutes, ICT-IOC, Bhubaneswar and ICT-MARJ, Jalna; the former backed up by the CSR support of IOCL through the

extraordinary dynamism by Hon'ble Dharmendra Pradhan, the Ministry for Petroleum and Natural Gas. Dr. R. A. Mashelkar, Chancellor of ICT and Vox Populi of Scientific community inspires one and all everytime and all occasions. He is truly the lighthouse of optimism.

Certainly, if there is one parameter to gaze the progress of any Institute in its formative years, it's the improvising quality of students' intake year on year basis. The merit of the students went up by an order of magnitude, credit going to the world class teaching faculty impressing upon them with their academic and industrious repertoire. ICT's plank will always be ensconced on Industry's harbour promoting the Establishment of SUSTAINABLE Industrial culture and whenceforth the Industry-Institute interaction.

The foundation stone of ICT-IOC, Bhubaneswar was laid by the Hon'ble President of India, Shri. Ram Nath Kovind on March 18, 2018. Keeping with the uphill trend and backed up by the ethos of mother Institute, ICT Mumbai, ICT-IOC is now blessed with highly dedicated and carefully selected Faculty coming from various countries such as Germany, USA, Israel, Canada and Singapore. IIT KGP pitching in and also supporting us in our joint MTech-Executive program, a unique program started since 2019.

ICT-IOC offers the most vibrant culture of teaching and research to the students of Chemical Engineering who can specialise in any of the six core branches, such as Petrochemical Engineering, Food Engineering and Technology, Pharmaceutical Technology, Energy Engineering, Fibre Science and Technology and Polymer and Materials Engineering. Like its mother Institute, ICT-IOC will present to the world as smorgasbord of Academia and be referred to as a melting point of doers representing the true demographic India. It is ICT-IOC's mandate that the next revolution in manufacturing will stem from Eastern Coast in the same manner as the western coast of India ushered in 1960's and 1970's. With plenty to offer due to vast expanse of natural wealth in the form of rich mines of Bauxite, Iron and Chromite, in addition to the rich flora and fauna, herbals and agri-produce, ICT-IOC has a great responsibility to deliver it to the nation by developing the eastern part Industrially which is otherwise rich in Art and Culture. The elixir of Chemistry to spur the all-round sustainable growth is in fresh air and the students of PAN INDIA can proudly take part and be the nextgen of Indian diaspora of over 650 first generation entrepreneurs who have made ICT as their second home. Come and Join ICT-IOC Bhubaneswar, we together will make the difference. Notwithstanding the pandemic COVID19, ICT-IOC marches ahead with uniquely adopted online teaching in the difficult time of our existence. Professor A. B. Pandit, reigning Vice-chancellor, a world class teacher and researcher has a unique presence felt amongst the students of ICT and its two branches. ICT-IOC will only flourish under his command.

### **Professor Bhaskar N. Thorat**

*B.Chem.Eng., M.Chem.Eng., D.H.S.T., Ph.D. (Tech.)*

**Professor of Chemical Engineering**

[On deputation as DIRECTOR, ICT-IOC Bhubaneswar]



## IMPORTANT INSTRUCTIONS

The fees for the submission of a single form for a particular course at ICT are as follows

| Course            | Open Category | Reserved Category** |
|-------------------|---------------|---------------------|
| Integrated M.Tech | ₹ 1000***     | ₹ 500***            |

- \*\*\* The payment for the same should also be made online (extra online charges may apply)
1. The admission form for the academic year 2020-21 should be filled online on the ICT website, <http://www.ictmumbai.edu.in>
  2. Anybody, not belonging to the Reserved Category, found buying application form under that category will be disqualified.
  3. Please read the Handbook carefully before filling the admission form.
  4. Due to circumstances beyond control of authorities, the schedule of admission may change and it will be notified on the website. Candidates are advised to watch the website regularly.
  5. Merit list/ schedule of admission rounds for the Integrated M.Tech course will be displayed on [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in) and the ICT-IOC Notice Board. Please note that no individual correspondence will be made in this regard and it is the responsibility of the candidates to visit the webpage regularly.
  6. Pleading ignorance about information displayed on the web shall not be entertained.
  7. Admission to hostel is as per the rules laid down and the quota for the course.
  8. Merit is the only criterion for admission to any course and seats are reserved as per Government of Maharashtra's directives in this connection for campuses in Mumbai and Jalna. The Bhubaneswar campus will follow the all India criterion.
  9. Biometric attendance system is adopted for all classrooms and lectures are recorded. An auto generated message is sent to the student and his/her registered parent/guardian at 9.00 pm if the student has missed any lecture. Thus, a record is available to ICT authorities on real time basis.
  10. There are no agencies operating on behalf of the institute and there is no capitation fee or donation in regard of admissions. Be careful of any persons claiming to offer admission to the ICT-IOC or knowing authorities. No extraneous considerations should be brought to exert pressure on the Admission Committee. It will be strictly dealt with. We take pride in fairness and openness in admissions and all matters and give justice to one and all.
  11. All correspondence regarding admissions should be addressed to the Registrar, Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai-400019 ([admission@ictmumbai.edu.in](mailto:admission@ictmumbai.edu.in); +91-22-33611111/ 2222; Fax: +91-22-33611020).

## APPROACH ROUTES TO ICT-IOC, BHUBANESWAR AND LANDMARKS

A location map of the ICT-IOC, available on Google maps, is provided above and the various access routes are described from nearby railway stations, bus stops and the airport.

### Landmarks in the vicinity of ICT-IOC

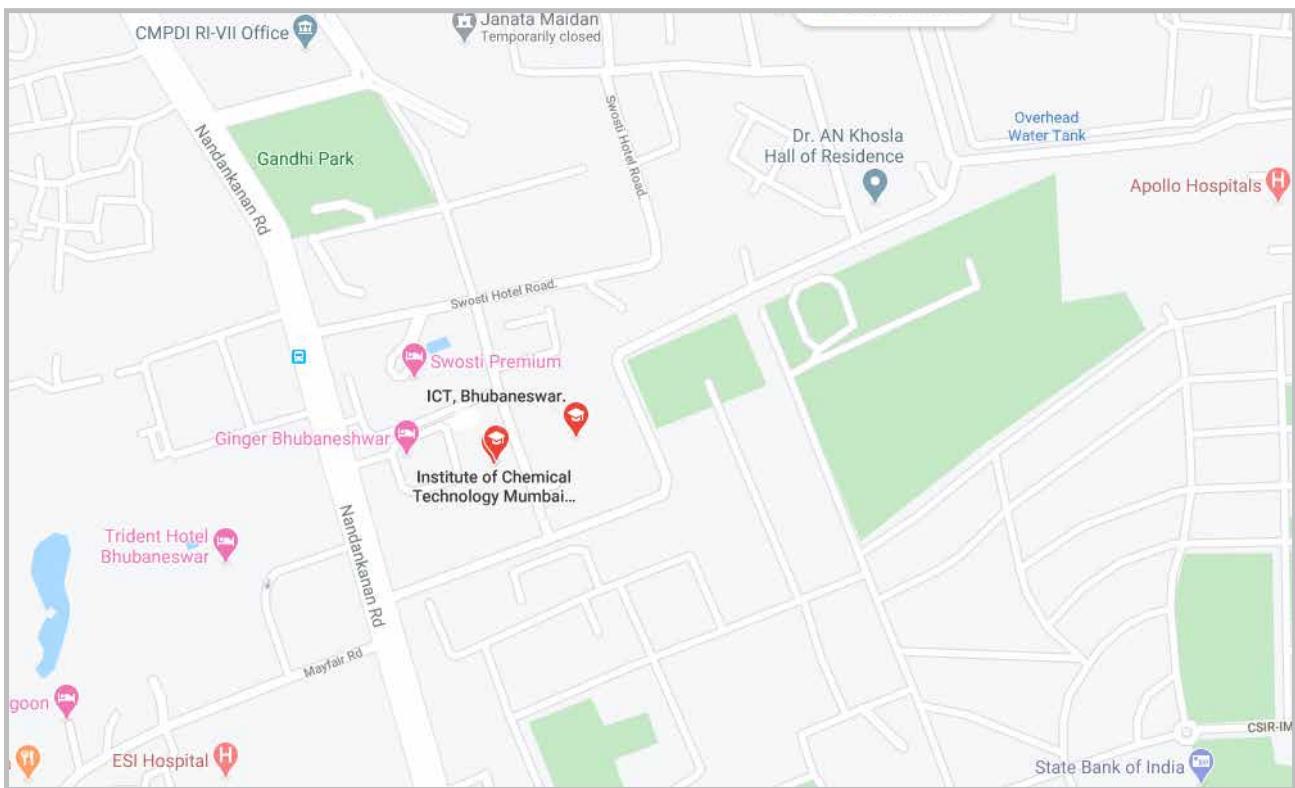
ICT-IOC, currently running its classes from the Extension Centre campus of IIT-Kharagpur at the Temple City, is situated just behind the famous 5-star luxury Hotel named "Swosti Premium". The Hotel is situated on the right side of the Jayadev Vihar to Nandankanan Main Road.

#### A. From Bhubaneswar Railway Station (Main Station)

The ICT-IOC can be reached in about 15 minutes on the main road from Master Canteen Square towards Jayadev Vihar- Nandankanan Main Road. Main Railway Station is also accompanied by the Govt. Bus stand to its adjacent, a result Govt. Buses are readily available in this route.

#### B. From Biju Patnaik International Airport (Bhubaneswar Airport)

It is about 25 minutes by road from the only Airport of Bhubaneswar. Cabs and Govt Buses are easily accessible which directly ply through the road connecting the Institute.



## MANAGEMENT OF ICTM-IOC BHUBANESWAR

The Director reports to the Vice Chancellor for overall directions and is guided by two committees, namely, Advisory Committee and Executive Committee.

### ADVISORY COMMITTEE

1. Professor A. B. Pandit, Vice Chancellor, ICT Mumbai (Chairman)
  2. Professor Damodar Acharya, Former Director, IIT-Kharagpur, Former Chairman, AICTE, Former Vice Chancellor, Biju Patnaik University of Technology (Member)
  3. Shri Ranjan Kumar Mohapatra, Director (HR) IOCL (Member)
  4. Dr S.S.V. Ramakumar, Director (R&D) IOCL (Member)
  5. Prof. B. N. Thorat, Director, ICT-IOC Bhubaneswar (Member Secretary)
  6. Dr. P. D. Vaidya, Associate Professor of Chemical Engineering, Head Hostel Warden (Member)
- (A few eminent persons are invited as special invitees. The Committee meets twice a year)

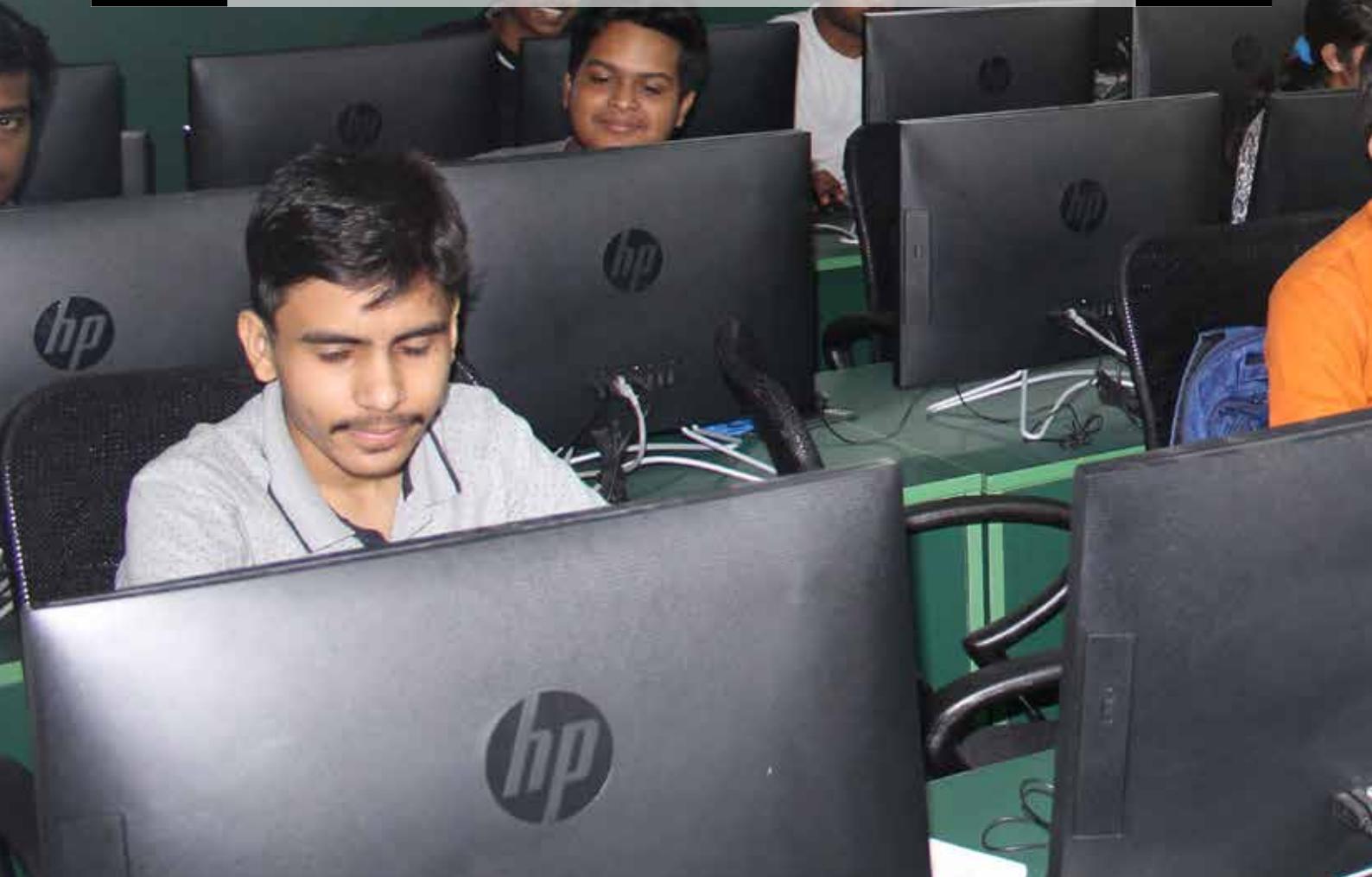
### EXECUTIVE COMMITTEE

1. Professor B. N. Thorat, Director, ICT-IOC Bhubaneswar (Chairman)
2. Professor P.R. Vavia, Dean (Academic Programmes), ICT (Member)
3. Professor R.R. Deshmukh, Registrar, ICT (Member)
4. Shri T.D.V.S. Gopalakrishna, Executive Director, Paradip Refinery, IOCL (Member)
5. Shri. S. K. Bose, Executive Director, IOCL Corporate Office (Member)
6. Mr. Amit Gupta, DGM(HR), IOCL corporate office (Member)
7. Shri. S. K. Sarangi, Associate Dean, ICT-IOC (Member)
8. Shri D.P. Misra, Former Vice Chairman, Jacobs and Former Director General, Indian Chemical Council (Member)
9. Dr. Rambabu Dandela, Assistant Professor, ICT-IOCB (Member Secretary)

(A few eminent persons are invited as special invitees. The Committee meets more frequently to monitor progress of the campus activities including ICT policies and Advisory Committee decisions)

# FACULTY PROFILE

ICT Mumbai - IndianOil  
Odisha Campus, Bhubaneswar

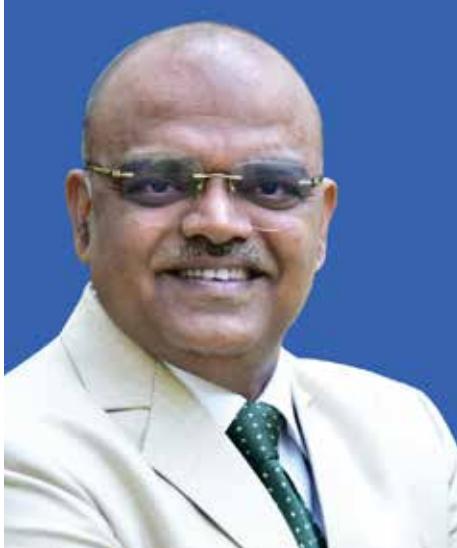




**PROF. BHASKAR N. THORAT**

*B.Chem.Eng., M.Chem.Eng.,  
D.H.S.T, Ph.D. (Tech.)*

**Professor of Chemical Engineering  
[DIRECTOR, ICT-IOC Bhubaneswar]**

**PROF. BHASKAR NARAYAN THORAT**

[DIRECTOR, ICT-IOC Bhubaneswar]

B.Chem.Eng., M.Chem.Eng.,

D.H.S.T, Ph.D. (Tech.)

**Professor of Chemical Engineering****Subjects Taught:**

Chemical Engineering Operations, Perspectives of Society, Science & Technology, Communication Skills, Separation Processes in Chemical Engineering, Foundation Course in Entrepreneurship and Advanced Entrepreneurship

**Research Interests:**

Drying Technology and Particle Handling, Industrial Crystallization and Filtration, Food and Agri-Processing, Environmental Engineering and Sustainable Development. Recognized Research guide for Ph.D. (Tech.) in Chemical Engineering, Fermentation Technology, Social Engineering, Economics and Law

**Guided students: Ph.D. 27; Masters: 74;****Total Research Publications-**

National: 03, International: 88

**Patents:** 15, H-Index: 22, Citations: 1719**National and International Awards:**

- Gunther Oertel Startup Innovation Award for Microbutor Innovation, Covestro, (Former Bayer Material Science, Germany), 2017.
- Millennium Alliance Award by UKAID (DFID) and FICCI: Solar Conduction Dryer Scale-up in Nepal, 2016
- Millennium Alliance Award by UKAID (DFID) and FICCI: CassavaTech scale up in Kenya, 2016
- Lifetime Achievement Award for Outstanding Contribution to Drying and Dehydration, given by at ADC-2019.
- NOCIL AWARD for excellence in design of new equipment and process, 2015.
- The VASVIK Award for the year 2012 in the field of Chemical Sciences and Technology, 2015.
- Bill and Melinda Gates Foundation Award of USD 100,000 (One Lakh US Dollar) each for Innovative Cassava Dryer, and Solar Grain Dryer 2013.
- Dell Social Innovation Award of USD 60,000 (Sixty thousand US Dollar) for developing “Solar Conduction Dryer”, 2013.
- Vocational Excellence Award, for his valuable contribution to Science and Society for making Solar Conduction Dryer for the Agricultural Sector, Rotary Club of Mumbai Cuffe Parade, 2013.

**DR. SANKHA KARMAKAR**

Ph.D. (IIT Kharagpur), M.Tech (IIT Kharagpur), B.E. (Jadavpur University)

**Assistant Professor in Chemical Engineering****Subjects Taught:**

Material and Energy Balance

**Research Interests:**

Membrane Technology, Water Treatment, Metal Organic Framework, Environmental Remediation

Recognized Research Guide for: 0

Guided students: 0

**Total Research Publications:** International: 15

H-Index- 9

Citations data- 217

Patents – 4 (Applied)

**National and International Awards**

1. Best Poster Award Nominee for poster presentation in MRS Fall Meeting and Exhibit, November 2018 held in Boston, USA, “Removal of Fluoride from Groundwater using aluminumFumarate MOF Impregnated Polyacrylonitrile Beads”. (International)
2. Winner of the DST-Lockheed Martin-Tata Trusts

### **Dr. SAURABH C. PATANKAR**

B.E. (Chemical), M. Chem. Engg., Ph.D. (Tech.)

Postdoctoral fellow, University of British Columbia, Canada

Queen Elizabeth Scholar

#### **Assistant Professor in Chemical Engineering**

#### **Subjects Taught:**

Material and Energy Balance Calculations, Mass Transfer Operations, Chemical Reaction Engineering

#### **Research Interests:**

Green Chemistry and Engineering, Heterogeneous Catalysis, Bio-based Materials, Renewable Chemicals, Industrial Ecology

**Recognized Research Guide for:** Chemical Engineering

Total Research Publications-National: 0, International: 8, H-Index- 5

Citations – 76

**Patents (granted in last 5 years) – 1**



#### **National and International Awards and Fellowships:**

1. Loksatta Tarun Tejankit Award 2017 in science category
2. Postdoctoral Research Fellowship from University of British Columbia
3. Canadian Queen Elizabeth II Diamond Jubilee Scholarship
4. Industrial Green Chemistry World 2015 award from Green Chemistry foundation
5. Canadian Commonwealth Scholarship
6. ISTE- IPCL National award for Best Chemical Engineering thesis 2012



### **Dr. CHAYAN SARKAR**

*Ph.D. in Chemical Engineering (IIT Kharagpur),*

*M.Tech. in Chemical Engineering (IIT Guwahati),*

*B.Tech. in Chemical Engineering (Heritage Institute of Technology, WBUT).*

#### **Assistant Professor in Chemical Engineering**

#### **Subjects Taught:**

Momentum Transfer, Process Control, Transport Phenomena, Chemical Reaction Engineering

#### **Research Interests:**

Environmental Catalysis, Photocatalysis, Adsorption, Waste Water Treatment, Waste Management

**Total Research Publications-** National : 5; International: 5

H-Index- 4

Citations data- 42

**Dr. AYANTIKA SETT**

*PhD in Chemical Engineering*

**Assistant Professor in Chemical Engineering**

**Subjects Taught:**

Thermodynamics

**Research Interests:**

Microscale Transport processes, Point of care disease diagnosis,  
Interfacial Phenomena

**Total Research Publications:** International: 5

H-Index- 2

Citations data- 11



**Dr. SWAGAT MOHAPATRA**

*M.Sc. (Chemistry), Ph.D. (Chemistry)*

**UGC FRP Assistant Professor of Chemistry**

**Subjects Taught:**

Chemistry

**Research Interests:**

Organic and organometallic materials for doping of organic semiconductor, Non Iron metallocene s for catalytic applications, Insertion of redox active metals into conductive organic polymers. Antiviral coating of PPE using nano particles.

**Recognized Research Guide for:** Chemistry

Total Research Publications: International: 23

H-Index- 15

Citations data- Total citations – 976

**Patents** – 01

**National and International Awards:**

1. Young Scientist Award 2016,
2. UGC FRP award with research start up 2015,
3. International Travel Grant to attend Hording Research Conference 2014
4. Visiting Assistant Professor at Georgia Institute of Technology Atlanta USA for 1 year Feb 2018 to Feb 2019

**Dr. SAIKAT BHAUMIK**

*B.Sc. (Physics-Hons), M.Sc. (Physics), Ph.D. (Science)*

**Assistant Professor in Engineering and Materials Physics**

**Subjects Taught:**

Physics

**Research Interests:**

PeroVskites, Quantum Dots, DFT Calculations, Low-Temperature Physics, Light-Emitting Diodes, Solar Cells, Photo-detectors, Memory Devices, Bio-imaging etc.

**Recognized Research Guide for:** Material Science(Science)

**Guided students:** Masters: 1

**Total Research Publications**-National: 0, International:

17, H-Index- 9

Citations data- Total 749 citations

Patents (granted in last 5 years) - 1



**National and International Awards**

DST-Inspire Faculty (2017),

NET-CSIR (2009),

GATE (2009).



**Dr. RAMAKANTA NAIK**

M.Sc. (Physics), Ph.D.

**Assistant Professor in Engineering and Materials Physics**

**Subjects Taught:**

Condensed Matter Physics, Materials Science, Ultrasonic

**Research Interests:**

Magnetic shape memory alloys, Nanostructures, thin films, Experimental electronic structures, Gas free solid state magnetic refrigeration material development, Heterojunction Interface development for Organic Solar Cells, Nanocomposite based material development for Super-capacitors, Graphene based membrane development for desalination and oil spill clean-up in petroleum industry.

**Recognized Research Guide for:** Physics(Science)

**Guided students:** Ph.D.: 2

Masters: 3

**Total Research Publications-**

National: 1, International: 29

H-Index- 12

**Citations data- Total 1249**

**National and International Awards:**

Marie Curie Fellowship of European Union, S.N. Bose Fellowship, DST Woman Scientist Fellowship

**Dr. CHHAYABRITA MAJI**

M.Sc. (Physics), Ph.D.(Physics)

**Assistant Professor in Engineering and Materials Physics.**

**Subjects Taught:**

Physics

**Research Interests:**

Photo-induced inter-diffusion in amorphous multilayer thin films, Optical and Non-linear optical effects in Amorphous semiconductors, Low temperature study of amorphous materials, Ion irradiation studies on chalcogenide materials, Topological insulating materials, Solar cell materials, Nano structured amorphous materials

Recognized Research Guide for: Physics(Science)

Guided students: Ph.D. 04 Continuing, Masters. 10 M.Phil. (Completed), M.Sc.

Total Research Publications-65

National: 2, International: 63

Conference Proceedings: (29): International:23 National:06

H-Index- 16

Citations data- Total 580 citation Patents (granted in last 5 years) - NA

**National and International Awards :**

DST-INSPIRE Faculty Award from Government of India-2012,  
Young Scientist Award 2015, Orissa Physical Society.





### Dr. SANJIB KUMAR ACHARYA

Ph.D. (Maths)

Assistant Professor in Engineering Mathematics

#### Subjects Taught:

Engineering Mathematics

#### Research Interests:

Numerical methods to solve partial differential equations. Particularly, hybrid FEMs, FDMs, mortar FEMs, penalty methods, iterative domain decomposition methods and multiscale methods.

**Total Research Publications-** International: 4

H-Index- 1

Citations - Total 7

#### National and International Awards:

Institute postdoctoral fellowship at Tata Institute of Fundamental Research, Centre for Applicable Mathematics, Bangalore.

### Dr. RAMBABU DANDELA

B.Sc., M.Sc., Ph.D. (Chemistry)

Postdoctoral fellow (Ben-Gurion University of the Negev, Israel)

Ramanujan Fellow

Assistant Professor in Industrial and Engineering Chemistry



#### Subjects Taught:

Analytical Chemistry, Organic Chemistry and Medicinal Chemistry

#### Research Interests:

My research interests use organic synthesis to make novel small molecules, which can be utilized to understand and exploit biological systems.

Chemical Biology, Bioorganic Synthesis, Quorum Sensing, Chemical proteomics, Pharmaceutical cocrystals, Process Research and Development of Active Pharmaceutical Ingredients (API).

**Recognized Research Guide for:** Chemistry(Science)

**Guided students:** Ph.D. ongoing 0, Masters: 0

**Total Research Publications-** 92

National: 9, International: 83

Citations data- H-Index-23,

**Total 1306 citation, Patents (granted in last 8 years) - 8**

#### National and International Awards :

Ramanujan Fellowship (2017- 2022) by DST, Govt. of India.PBC

program outstanding post-doctoral researcher fellowship (2013-2016) by Government of Israel at Ben-Gurion University of the Negev.



### Dr. LISA ROY

*B.Sc.(Hons.) (Chemistry), M.Sc. (Chemistry), Ph.D.(Chemistry),  
Postdoc (Max Planck Institute for Chemical Energy Conversion,  
Germany)*

**Assistant Professor in Industrial and Engineering Chemistry**

#### Subjects Taught:

Organic/Physical Chemistry

#### Research Interests:

Molecular modelling of bio-inspired catalytic reactions which have implications in the chemistry of metalloenzymes and model complexes, contributing to green and amp; sustainable resources; Understanding catalytic reactions on surfaces related to energy and gas storage; Evaluating the structure-bonding- reactivity relationship of organic and inorganic compounds

**Recognized Research Guide for:** Chemistry (Science)

**Guided students:** NA, Masters: 2

**Total Research Publications-** National: NA, International: 17

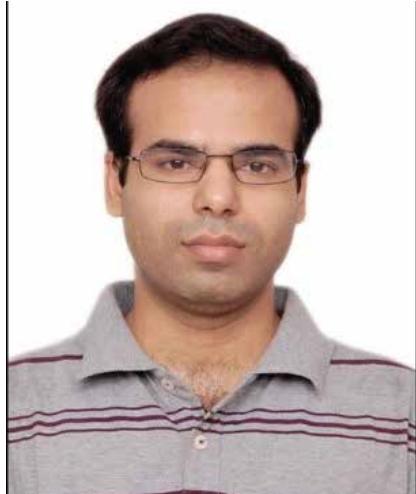
H-Index- 8, Citations data- 232

Patents (granted in last 5 years) - NA

#### National and International Awards:

Postdoctoral Fellowship in the Institute of

Chemistry at The Hebrew University of Jerusalem, Israel, 2018; DST Inspire Faculty Award 2017 by Department of Science and Technology, Government of India; Max Planck Postdoctoral Fellowship in 2015 by the Max-Planck-Gesellschaft, Germany.



### Dr. KASHFULL ORRA

*B.Tech Mechanical Engineering 2008*

*M.Tech Mechanical Engineering 2011*

*Ph.D. Mechanical Engineering IIT Kanpur 2019*

**Assistant Professor in Mechanical Engineering**

#### Subjects Taught:

Engineering and Solid Mechanics

#### Research Interests:

Machining with adaptive control system; Monitoring and control of manufacturing processes; Tool dynamics and control operation strategies; Analysis and control of dynamic systems; Control operation research, Tribology in machining operation; Sustainable manufacturing, Advanced machining of superalloys, Advanced manufacturing process, Mathematical modeling and stochastic state estimation. Friction stir welding.

**Recognized Research Guide for:** Material Science (Science)

**Total Research Publications-** International : 6; National : 1

**H-Index-7**

**Citations data- 105**

**Patents – 1**



**Dr. RITESH S. MALANI**  
Ph.D. from IIT Guwahati (2019)

**Assistant Professor in Petrochemical/  
Energy Engineering Department**

**Subjects Taught:**

Mass transfer operations, Reservoir Engineering

**Research Interests:**

Heterogeneous Catalyst, Green Technology, Biofuels, Process optimization, Process Intensification, Kinetic Modelling, Petrochemicals and Refinery processes

Total Research Publications: National: 0, International: 11

H-Index- 7

Citations data- 287

**National and International Awards:**

Received “Best Paper Award” during LAMSYS-16 in 2016, at SatishDhawan Space Centre (SDSC) SHAR-Indian Space Research Organization (ISRO), Sriharikota, Andhra Pradesh, India

**Dr. DIPAK MAITY**

B.Sc. (Chemistry-Hons), B.Tech., M.Tech.,  
Ph.D. (National University of Singapore)

**Assistant Professor in Biological Engineering and Biotechnology**

**Subjects Taught:**

Chemical Engineering Thermodynamics (I & II); Introduction to Materials Science & Engineering; Engineering Thermodynamics; Nanotechnology for Biomedical Applications; Scientific Studies of Human Consciousness

**Research Interests:**

Nanomaterials, Nanomedicine, Nano-biomaterials, Drug Delivery, Cancer Theranostics (Diagnostics and Therapy), Multifunctional Nanostructured Materials, SPIONS, Magnetic-Polymeric Nanoplatforms, Nanoparticles based Food, Agricultural and Environmental Technology.

**Recognized Research Guide for:** Nanomaterials, Biomaterials, Nano-biotechnology, Nanoscience and Nanotechnology, Materials Science and Engineering

**Guided students:**

Ph.D.: 2 (completed)

**Total Research Publications:**

National: 2, International: 35, H-Index - 14

**Citations data-** Total 1800 citations

**Patents (granted in last 5 years)** – 1

Books and Book Chapters – 5

**Projects (ongoing or completed)** – 1 (DST-Nanomission)



**National and International Awards**

17 - Young Innovator Award (Advanced Materials, 2018); BHARAT VIKAS AWARD (Nanomedicine, 2017); IAAM Medal (Advanced Materials Science and Technology, 2017); Young Scientist Research Award (Nanomaterials, 2015); BEST PAPER (ICONN 2013); UGC Faculty Recharge Award (2012); Best Poster (ICONSAT 2010); Best Poster (MRS-S 2010); MHRD Scholarship (IIT, 2002-2006); GATE (AIR 31, 2002); MERIT Scholarship (Applied Chemistry, 1999); Secured Gold Medal (Chemistry Hons., 1999).



### Dr. SONAL RAVINDRA AYAKAR

Doctor of Philosophy (Ph. D.) Department of Chemical and Biological Engineering, University of British Columbia, Canada

#### Assistant Professor in Biotechnology

#### Subjects Taught:

Introduction to Biological Science and Bioengineering, Bioprocess Engineering I, Bioprocess Engineering II, Harnessing Nature: An Introduction to Biological Engineering

#### Research Interests:

Metagenomic analysis of microbial consortia for biomass valorisation, biosensor development, enzyme engineering; microbial community study and genome mining for food applications in probiotics, proteomic study for marine product processing and bakery goods; synthetic biology and metabolic engineering for natural product biosynthesis; enzyme catalysis and kinetics; fermentation and bioprocess design for bioproducts, functional foods.

#### Recognized Research Guide for: Biotechnology

Total Research Publications- 4

National: 0, International: 4

H-Index- 2

Citations data- Total citations 10

#### National and International Awards:

1. 4 Year Fellowship and Award (2014),
2. International Tuition Award (2014),
3. Junior Research Fellowship funded by Department of Biotechnology (DBT) (2012),
4. Late Shri. H. G. Advani Gold Medal (2012),
5. Dr. J. K. Lalla Award (2012),
6. Mr. Krishna Wadhwani Award (2012),
7. Bharati Kale Memorial Award (2012),
8. Smt. Jethibai Hirdaram Jagtiani Award (2011)

## Staff Profile

### Mr. SATISH KUMAR SARANGI

Associate Dean (Industries and Internship),  
Officer on Special Duty, ICT-IOC Bhubaneswar

M.Tech (IIT Kharagpur), MS (Institute of petroleum and Gas, Romania, UNESCO Programme)

MBA (Faculty of Management Studies, Delhi)

Ex. Executive Director, IndianOil Corporation Ltd,

Consultant (Technical), IndianOil Corporation Ltd,

Short Term Course on Strategic Management in

WHARTON Business School, USA and Universities of

Alberta, CANADA.

Former CEO, IOTUES, Paradip, Ex. Chairman, IndianOil

CREDA Biofuels Ltd, Ex. Chairman IndianOil Ruchi

Biofuels Ltd, Director, Joint venture of NPCIL and IOCL,

Director IndianOil Panipat Power Project















## 6.1 INNOVATIVE PROGRAMMES AT ICTM-IOC BHUBANESWAR

### 6.1.1 PREAMBLE

As was stated elsewhere, ICT has added two campuses from 2018-19, this being one of the two. Because of the Category I and Deemed to be status, it was possible for ICT to go out of Maharashtra. In view of massive investment in energy, petrochemicals, chemicals, polymers, textiles, minerals, materials, biotechnology and pharmaceutical industries in Odisha, ICT was requested to open a campus in Bhubaneswar. Indian Oil Corporation Ltd took a historic decision to support fully a campus of ICT in Bhubaneswar. This is the first of its kind in India where a corporate house has decided to support innovative education and research under its CSR policy to create manpower and job opportunities and entrepreneurs and skill development Centres in Eastern India. The nation at large will benefit.

The campus is equipped modern equipment for carrying out high class research and innovation at Centres of Excellence to develop technology and to support Research & Development in industry and Skill Development in Chemical Engineering, Petrochemicals, Textiles, Polymers, Pharmaceuticals, Energy, etc.

## 6.2 INTEGRATED M. Tech. IN CHEMICAL ENGINEERING (i-M. Tech.)

i-M. Tech. is unique in its content, character, delivery and outcome. It is new and being introduced in India for the first time. The objective to impart industrial training of two years to all students in different areas and develop entrepreneurial skills. CREATING ENTREPRENEURS AND INNOVATORS instead of job seekers is a prime goal. A variety of opportunities are provided to both students and teachers. During the industrial internship the student will receive stipend/or concessions from industry making the education affordable to one and all.

i-M.Tech. starts after completion of 12th Standard (HSSC, 10+2, or equivalent) and is of 5 years duration consisting of 15 trimesters (6 trimesters in industry and 9 in class room on campus) with alternate term in industry, with major degree in Chemical Engineering and minor in 6 different disciplines. It will ensure improved quality and industry-relevance in curricula development for integrated M. Tech. in the field of Chemical Engineering as major branch with minor in Petrochemicals, Textiles, Polymers and Materials, Foods and Pharmaceuticals, and Energy Engineering. The last two trimesters will be for promotion of research problem with experiments which will lead to a design project to promote entrepreneurship and start-up companies. An experience of 2 years in different industries will boost the morale of students, their industry-readiness and placement prospects. Our idea is to place them in all processing industries including software companies, programming, electronics industries, minerals, coal, biotech, etc.

### 6.2.1 REVISE INTAKE CAPACITY AS PER NEW EWS RULES

The admission to this course is based on JEE (Mains). The capacity is 60.

### 6.2.2 SUPERNUMERARY QUOTA

Supernumerary quota for students under Study in India programme has been created. (see Study in India Cell; <https://studyinindia.gov.in/>). Certain number of seats are also created in each programme for NRI, PIO and Foreign students. Students from SAARC countries are also included at a special fee structure. Currently 15% supernumerary seats are created to be distributed equally among three categories adjusting internally.

As stated earlier the programme is a trimester (4-month) system with 3 terms per year. The class of 60 is divided into two batches, Batch A and Batch B with 30 students each. The first trimester in an academic year will begin with 60 students in the class room and will receive training in high level instruments in the fields of Chemistry and Physics, and Mathematics. The syllabus of Chemistry and Physics is so designed as to make the students useful for taking adequate training for industrial internship. The instrumental methods will include theory and experiment

on instrumental methods of analysis, typically taught at M.Sc. level and in Mathematics, they will learn MATLAB, Python, C++, R-programming, CAD/CAM. The first term will make them understand the importance of various industries.

Table 6.1: Schedule of Lecture and Work Terms for Batches A and B

| Trimester # | Term | Lecture term      | Work Term                           | Comments                      |
|-------------|------|-------------------|-------------------------------------|-------------------------------|
| 1           | T1   | Batch A + Batch B | None                                | Both together to learn basics |
| 2           | T2   | Batch B           | Batch A                             | Batch of 30 each              |
| 3           | T3   | Batch A           | Batch B                             | Lectures of T2=T3             |
| 4           | T4   | Batch B           | Batch A                             |                               |
| 5           | T5   | Batch A           | Batch B                             | Lectures of T4=T5             |
| 6           | T6   | Batch B           | Batch A                             |                               |
| 7           | T7   | Batch A           | Batch B                             | Lectures of T6=T7             |
| 8           | T8   | Batch B           | Batch A                             |                               |
| 9           | T9   | Batch A           | Batch B                             | Lectures T8=T9                |
| 10          | T10  | Batch B           | Batch A                             |                               |
| 11          | T11  | Batch A           | Batch B                             | Lectures of T10=T11           |
| 12          | T12  | Batch B           | Batch A                             |                               |
| 13          | T13  | Batch A           | Batch B                             | Lectures of T12=T13           |
| 14          | T14  | Batch A + Batch B | 8-month Research and Design Project | Entire class graduates        |
| 15          | T15  | Batch A + Batch B |                                     |                               |

During T14 and T15 the students will study courses on management, finance, environmental laws, legal issues, entrepreneurship and sustainability and work on a group project called Start-Up Project. The students will be divided in 12 groups with mixture of students from Batch A and B, who would have worked in different industries, and given a project based on research done in ICT. They will repeat experiments to verify data, develop a green process for the given project, collect information on kinetics, reactor design, safety, market, capacity and potential industrial zone, etc. and will prepare a feasibility report to start a company and will be helped to meet venture capitalists.

### 6.2.3 MAJOR AND MINOR (i-M.Tech.) PROGRAMME

100% seats are for students from all over India (all States and Union Territories including Maharashtra)

1. Chemical Engineering (Major)  
Polymer and Materials Engineering (Minor)
2. Chemical Engineering (Major)  
Food Engineering and Technology (Minor)
3. Chemical Engineering (Major)  
Pharmaceutical Technology (Minor)
4. Chemical Engineering (Major)  
Fibre and Textile Processing Technology (Minor)
5. Chemical Engineering (Major)  
Energy Engineering (Minor)
6. Chemical Engineering (Major)  
Petrochemical Engineering (Minor)
7. Chemical Engineering (Major)

Chemical Technology (Minor): The student who takes different subjects from the different minor programmes but could not have enough credits to get the single minor degree will be given chemical technology as minor.

#### **6.2.4 EXAMINATION PATTERN**

The examination pattern is 70% marks for continuous evaluation and 30% weightage will be for the end-trimester examination.

#### **6.2.5 SELECTION OF BATCHES**

The first 30 students in order of merit after the continuous evaluation during the first trimester will be assigned to Batch A and the remaining to Batch B. Thus Batch A goes for the industrial internship during T-2 and Batch A will continue with classes on the campus. Table 6.1 shows the manner in which the terms will be assigned to both batches.

#### **6.2.6 UG RESEARCH COMPONENT FOR STUDENTS ON THE CAMPUS**

Some of the students desirous of getting trained for research will have an opportunity to work with a few professors on the campus during their Lecture Term by putting in extra-hours per week. This training will get adequate credits. A minimum of 20 credits could be so acquired. These extra credits will enable the student to get Honours degree at the end.

#### **6.2.7 CURRENT INDUSTRIES FOR INTERNSHIP**

The very first batch of class 2018-19 from the IOC Bhubaneswar campus has been given internships in the following industries and this list will go on increasing to include industries across the country as well as abroad in future.

|                               |                                |
|-------------------------------|--------------------------------|
| Biofermenta Dahej and Kulu    | Biofermenta Dahej and Kulu     |
| Gujarat Refinery Baroda       | IMMT Bhubaneshwar              |
| IMMT Bhubaneshwar             | IOC Gujarat Refinery           |
| IOC Panipat Refinery          | IOC Paradip Refinery           |
| IOC R&D Faridabad             | Jagannath Polymers Cuttack     |
| Microfilt Umbergaon           | Microfilt Umbergaon            |
| NALCO                         | Oriplast Balasore Odisha       |
| Paradeep Phosphate            | RINL Vizag steel               |
| Galaxy Surfactants Ltd.       | UPL Ltd                        |
| Godrej Industries Ltd.        | Indo Amines Ltd.               |
| Atul Ltd.                     | Anupam Colours Pvt. Ltd.       |
| Rubicon Research Pvt. Ltd.    | Aarvi Encon Pvt. Ltd.          |
| Gujrat Narmada Chemicals Ltd. | Microchem Laboratory Pvt. Ltd. |
| Reliance Industries Ltd.      | Alkyl Amines Chemicals         |
| Aarti Drugs Ltd.              | Aarti Industries Ltd.          |
| Pidilite Industries Ltd.      |                                |

Additional Industries which will take interns during 3rd and 4th Trimesters apart from the above.

|                     |       |
|---------------------|-------|
| Adani Group         | BPCL  |
| Dalmia Group Cement | GAIL  |
| HPCL                | IFFCO |
| OPAL Dahej          |       |

This list is not exhaustive and will continue to grow. Very interestingly the industries have liked the Internship Diary prepared by ICT to monitor the student's Progress and some of the students

are already assigned research oriented assignments, literature search and report writing. The acceptance of the young students has been enthusiastic and speaks volumes about the quality and content of the i-M. Tech. programme

When the steady state of the programme is achieved in the fifth year, 150 students will always in industry throughout the year. Therefore industrial connectivity is a very strong component of i-M.Tech programme.

#### **6.2.8 MINOR DEGREE COMPONENT**

The award of the minor degree will be decided at the end of the programme depending on the number of credits the student has acquired. It will not be decided in the beginning and thus the student will have a chance of learning lessons from different disciplines and developing interest. This is again a unique feature. If no adequate credits are accrued, then the student gets Major degree with mention of Chemical Technology as the Minor degree.

#### **6.2.9 VIBRANT SYLLABUS**

Since the students will be going to industry, they will have to write reports and credits are given to the student for industrial internship. After the 4th trimester, the students can suggest which new topics should be included in the syllabus in tune with the demands of the industry.

### **6.3 EXECUTIVE M. Tech. (e-M.Tech.) FOR INDUSTRIAL PERSONNEL**

#### **(NO INTAKE FOR YEAR 2020-21)**

Executive MBA programmes are run working for professionals by various management institutes which typically cater to management of business, finance, and administration. This programme is distinctly different from them. The idea behind launching this programme is to train executives having at least three industrial experience with managerial experience or responsibilities who could rise to the top to become vice presidents, presidents, managing directors and the like but with training and research in technical field in an industrial set up.

#### **6.3.1 TYPES OF INDUSTRIES**

All processing industries where rate processes of physical, chemical or biological or combinations thereof are involved. Practically all industries are covered. For instance, oil, coal, refinery, coal, petrochemicals, minerals, materials, energy, pharmaceuticals, textiles, polymers, plastics, paints, oleo chemicals, agrochemicals, dyes, fertilizers, surfactants, biochemicals, biotechnology, foods, electronics, etc.

The e-M.Tech. is thus geared at giving training in research, innovation industrial practices, law, sustainability and management to experienced and senior professionals who want to continue to work without losing continuity in the work place but still being a student while pursuing a degree. There is a subtle difference in this program in comparison with other programs. These executives are many times involved in issues related to research, innovation, business expansion, environment, law and human resources, plant operation, design and development, marketing. In many PSUs, it is found that some are transferred to R and D or plant operations, without having any idea of the field resulting into considerable loss of time and resources.

#### **6.3.2 STUDY PATTERN**

They will study in the class room on the campus for a short term of 4 weeks during which s/he will undergo course work in two subjects as well as start do literature search and plan for research. The student will continue to carry out the research activities in the parent industry

during alternate terms. During the parent industry term (PIT), he will continue his research work, home assignments, and other related course work. The student is continuously monitored and participates in class room discussions, home assignments and research project. The e-M. Tech. student is also supposed to mentor one-two students from the Integrated Masters degree students during their industrial internship. The syllabus is prepared in consultation with faculty from ICT and IIT-Kharagpur.

The programme is of two years duration. Refer to Section 6.3.2.2 in this Handbook for further details.

## **6.4 COLLABORATION WITH IIT KHARAGPUR FOR e-M. Tech.**

IIT Kharagpur has signed an MOU for joining hands in the e-M. Tech. and research programmes allowing ICT to use its Extension Centre in Swosti Park, Bhubaneswar. The e-M. Tech. programme has another interesting aspect. It is being conducted jointly in collaboration with IIT-Kharagpur from June 2019. The syllabus for the e-M.Tech. Program has been prepared and also approved by the concerned academic bodies of both the institutes. Subjects such as industrial law, sustainability and process safety and hazard management along with research topic will also be covered. The capacity for this joint degree program is 60 in which 30 students will be from open category. The students will be thus able to spend time on ICT Mumbai IOC Bhubaneswar as well as IIT-KGP campus. There will be two guides for the students in certain cases to co-guide for the students, one from each campus. The facilities for research will be shared. Further details are given in Section 6.3.2.3.

### **6.4.1 RELEVANT COURSES FOR EXECUTIVES**

Some of the optional/additional courses including are as follows:

- Artificial Intelligence and Machine Learning for Chemical Industry
- Chemical Safety and Risk Management
- Corporate Sustainability
- Engineering and Law
- Environment Protection and Law
- Environmental laws
- Environmental Science and Sustainability
- Ethics and Industrial Practices
- Experimental Design
- Finance and Profit Management
- Green Chemistry and Engineering
- Industrial and Labour Laws in India
- Industrial Management
- Intellectual Property Rights, Valuation and Management
- Materials Management
- Operations Research
- Perspective of Global Industry
- Research and Innovation Methodology
- Research Methodology
- Sustainability

Thesis work, seminar, critical analysis of given topic, electives specific to industry of the candidate.

### **6.4.2 TWO YEAR REGULAR MASTERS DEGREE IN ENGINEERING AND TECHNOLOGY**

This regular PG degree programme will be extended to all campuses and students distributed internally taking into account the expertise of faculty and against the sanctioned total strength on the Main Campus.

## 6.5 Ph. D. PROGRAMMES

The Ph.D. programmes in various engineering and technology disciplines including basic sciences (29 Programmes) which are offered on the Main Campus are also offered at this campus.

### COURSES OFFERED

Table 6.2: Different Specializations for Ph.D. Programmes

| Sr. No. | Degree         | Specialization                           |
|---------|----------------|--|
| 1       | Ph. D. (Tech.) | Agrochemical Engineering                 |
| 2       |                | Bioprocess Technology                    |
| 3       |                | Chemical Engineering                     |
| 4       |                | Dyestuff Technology                      |
| 5       |                | Energy Engineering                       |
| 6       |                | Fibres and Textile Processing Technology |
| 7       |                | Food Biotechnology                       |
| 8       |                | Food Engineering and Technology          |
| 9       |                | Green Technology                         |
| 10      |                | Lipid Engineering                        |
| 11      |                | Perfumery and Flavour Technology         |
| 12      |                | Petrochemical Engineering                |
| 13      |                | Pharmaceutical Technology                |
| 14      |                | Plastics Engineering                     |
| 15      |                | Polymer and Materials Engineering        |
| 16      |                | Surface Coating Technology               |
| 17      |                | Civil Engineering                        |
| 18      |                | Electrical Engineering                   |
| 19      |                | Electronics Engineering                  |
| 20      |                | Mechanical Engineering                   |
| 21      | Ph.D. (Sci.)   | Biochemistry                             |
| 22      |                | Biotechnology                            |
| 23      |                | Chemistry                                |
| 24      |                | Food Science                             |
| 25      |                | Mathematics                              |
| 26      |                | Physics                                  |
| 27      |                | Textile Chemistry                        |

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

## 6.6 CENTRE OF EXCELLENCE IN RESEARCH AND INNOVATION

Some Centres of Excellence will be in different areas relevant to the region, nationally and internationally niche areas will be started in a phase wise manner. Currently we have acquired high end characterization equipment to conduct research in all fields of science and technology. These equipment have been located in the premises of College of Engineering and Technology (CET) in the vicinity of our current campus in Bhubanewar.

### 6.6.1 TUTORS-CUM-RESEARCH FELLOWS

All current faculty members have been given Tutor-cum-Research Fellows whose duties include assisting the faculty in home assignments and laboratories.

## 6.7 ADMISSION PROCEDURE

### 6.7.1 ADMISSION TO FIRST YEAR OF INTEGRATED M. Tech. PROGRAM IN FOLLOWING COURSES

#### 6.7.1.1 APPLICATION PROCEDURE

All admissions will be conducted by the Institute of Chemical Technology, Mumbai Campus FOR ONLINE ADMISSION FORM. (<http://www.ictmumbai.edu.in>)

Admission quota for all integrated M. Tech. courses are as follows.

The availability of all the seats for these courses for All India (all States and Union Territories including Maharashtra) shall be based on JEE main paper 1 - 2020.

#### 6.7.1.2 INTEGRATED MASTER COURSES OF STUDIES AND INTAKE CAPACITY

All Integrated courses are passed HSC or its equivalent examination with Physics, Chemistry and Mathematics as compulsory subjects and obtained at least 50% marks in aggregate (at least 45% marks, in case of backward class categories and persons with disability candidates belonging to Maharashtra state only). (Refer Section 6.2.3)

##### **Reservation:**

As per Government of India rules candidates belonging to certain categories are admitted to seats reserved for them based on relaxed criteria. These categories are:

- I. Other Backward Classes (OBC) if they belong to Non Creamy Layer (NCL)
- II. Scheduled Castes (SC)
- III. Scheduled Tribes (ST)
- IV. Persons with Disability (PWD) with 40% or more disability

Benefit of reservation for admission to ICT shall be given only to those classes/castes/tribes which are in the respective central list published by the Govt. of India.

#### 6.7.1.3 COURSE STRUCTURE

(Refer Section 6.2)

#### 6.7.1.4 FEES, CONCESSIONS, CANCELLATIONS AND REFUND:

##### **COURSE FEES PRESCRIBED:**

The candidates admitted during 2020-21 are required to pay fees as prescribed by the State Government. The institutional fees to be paid by all the admitted candidates are as follows:

#### 6.7.1.5 FEES, CONCESSIONS, CANCELLATIONS AND REFUND:

##### **Course Fees prescribed:**

The candidates admitted during 2020-21 are required to pay fees as prescribed by the State Government. The institutional fees to be paid by all the admitted candidates are as follows:

| Sr. No. | Type of Fees    | Open and all reserve category students fee for 1 <sup>st</sup> Year (₹) |
|---------|-----------------|---|
| 1       | Library Deposit | 2,000   |
| 2       | Fees            | 90,000  |
|         | Total           | 92,000  |

\*Research contingency of ₹ 12,000 will be added in the fifth year of fees.

## 6.7.2 EXECUTIVE MASTERS DEGREE PROGRAMMES

### 6.7.2.1 APPLICATION PROCEDURE FOR EXECUTIVE MASTER'S COURSES

All these admissions will be conducted by the Institute of Chemical Technology, Mumbai Campus

FOR ONLINE ADMISSION FORM VISIT <http://www.ictmumbai.edu.in>

### 6.7.2.2 ELIGIBILITY CRITERIA FOR THE ADMISSION TO EXECUTIVE MASTERS IN PROCESS ENGINEERING (e-M. TECH.)

1. The candidate should have passed Bachelor's degree in any branch of Engineering or Technology or Masters degree in any branch of Science. Initially only a certain branches of engineering, particularly Chemical Engineering or equivalent degrees, and technology will be considered depending upon the type of industry.

#### (a) Eligibility, Admission procedure and Results

##### Eligibility

- Only Industry sponsored candidates with minimum three years of industrial experience
- B.Tech./BE in Chemical Engineering / Chemical Technology / Polymer Engineering/ Petroleum Engineering/ Biotechnology/ Food Technology/Environmental Engineering / equivalent of 4 yr B.Tech. / M.Sc. in Chemistry, Physics, Bio-Sciences
- Minimum 60%, or 6.5 CGPA in a 10 point scale in the qualifying examination. If the CGPA is on a different scale, eligibility shall be calculated corresponding to the equivalence of above.

The prospective candidate shall have to clear a test and/or an interview by a committee that may be formed from time to time.

2. This course is meant only for recognised industry sponsored candidates.
3. The candidate should be full time industrial/ R and D employee with at least three years experience in a chemical or allied industry.
4. All processing industries where rate processes of physical, chemical or biological or combinations thereof are involved. Practically all industries are covered. For instance, oil, coal, refinery, coal, petrochemicals, minerals, materials, energy, pharmaceuticals, textiles, polymers, plastics, paints, oleo chemicals, agrochemicals, dyes, fertilizers, surfactants, biochemicals, biotechnology, foods, electronics etc. Kindly note expertise exists in all areas for teaching and research.
5. The industry should undertake the responsibility of releasing the candidate for course work (Theory Classes), experimental work (Laboratory work) or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Head of Department/ Centre Director.
6. A bond in this regard should be signed and approved by the Dean (Academic Programmes) or Director of the Concerned Campus in consultation with the Dean. The Institute is not responsible for the internal mechanism of the concerned industry for selection of the candidates of this program.
7. This is a two-year full time programme where the student has the privilege of working in his own parent industry on a research problem supervised by two supervisors from ICT Mumbai (from all three campuses) and IIT Kharagpur. One of the ideas is also to mentor, if possible, the interns of the Integrated M. Tech. degree students during their work term in their industry. The research project is decided in the very first month of admission.

### **6.7.2.3 COLLABORATION WITH INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR**

The e-M.Tech. programme has another interesting aspect. It is being conducted jointly in collaboration with IIT-Kharagpur from June 2019. The syllabus for the MTech Program has been prepared and also approved by the concerned academic bodies of both the institutes. Subjects such as industrial law, sustainability and process safety and hazard management along with research topic will also be covered. The capacity for this joint degree program is 60 in which the general category students it is 30. The students will be thus able to spend time on ICT Mumbai IOC Bhubaneswar as well as IIT-KGP campus. There will be two guides for the students in certain cases to co-guide for the students, one from each campus. The facilities for research will be shared.

### **6.7.2.4 e-M. Tech. COURSE DELIVERY FEATURES**

- Two year program comprising of 8 quarters
- Each quarter : 3 months
- On campus classroom teaching: 2 courses during first 4 weeks of quarters 1-6
- Remaining period of quarter in parent organisation when the student performs research work, home assignments and other related course work assignments
- Classes at IIT Kharagpur preferably in the quarter covering the summer vacation of the Institute
- Classes at ICT in remaining quarters where IIT faculty to co-teach with ICT faculty members - weekend contacts / NKN /video recording with weekend contacts.
- Quarter 7 and 8 – project work of 12 credits in each quarter
- Project work - in either of the two Institutes / Parent Industry / Recognized Laboratories / Industry approved by the Institutes
- Project work supervision by at least one faculty member from either Institute
- In Q1-6, continuous evaluation system - class room discussions, class tests/quizzes, home assignments, presentations, group or individual projects and mid semester examination of 70% weightage and end quarter examination of 30% weightage
- Mid quarter examination per quarter – to be conducted within class room session and end term examination at the end of each quarter (in the weekend proceeding the next quarter)
- End of quarter examinations of 2 hour duration for 3 credit subject and 3 hour duration for 4 credit subject
- Appearing and passing in end quarter examination mandatory for completing a quarter
- Minimum credit requirement for degree – 88

### **6.7.2.5 FEES, CONCESSIONS, CANCELLATIONS AND REFUND:**

#### **COURSE FEES PRESCRIBED:**

The institutional fees to be paid by all the admitted candidates are as follows:

| Sr. No. | Type of Fees    | Nonrefundable Fee for entire course (Rs.)                                |
|---------|-----------------|--|
| 1.      | Library Deposit | Rs. 5,000/-  |
| 2.      | Fees (2 years)  | Rs. 16,00,000/- (Fees 7.5 Lakh per year + 1 Lakh Accommodation per Year) |
|         | <b>TOTAL</b>    | <b>Rs. 16,05,000/-*</b>  |

\* The total fee to be paid at the time of admission.

\* One time Nonrefundable in case of admission cancellation.

## **6.7.3 DOCTOR OF PHILOSOPHY (Ph.D.) PROGRAMMES**

### **6.7.3.1 APPLICATION PROCEDURE**

All these admissions will be conducted by the Institute of Chemical Technology, Mumbai Campus  
FOR ONLINE ADMISSION FORM VISIT <http://www.ictmumbai.edu.in>

### **6.7.3.2 INTAKE CAPACITY:**

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

### **6.7.3.3 INSPIRE FELLOWSHIP FROM DEPARTMENT OF SCIENCE AND TECHNOLOGY, GOVT OF INDIA**

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

### **6.7.3.4 AICTE NATIONAL DOCTORAL FELLOWSHIP (NDF) SCHEME :**

AICTE offers PhD fellowships of Rs 28000 per month plus HRA in a few selected institutes including ICT in all branches of engineering and technology as well as pharmacy. AICTE QIP will also include ICT for faculty members desirous of enrolling for doctoral degrees. Watch for their advertisement.

Visit the following two websites.

<http://www.aicte-india.org/content/national-doctoral-fellowship-ndf>

<https://ndf.aicte-india.org/appHome.html#!/>

### **6.7.3.5 UGC/CSIR FELLOWSHIPS**

Candidates are requested to visit the websites of these bodies for details of fellowships available with them under different criteria. All PhD students admitted to any branch in ICT must receive fellowship from some funding agency or industry or collaborative programmes or exchange scheme. No full time student is admitted to the Ph.D. programme without full fellowship.

#### **6.7.3.5.1 ELIGIBILITY CRITERIA FOR ADMISSION TO Ph.D. (Tech.)/ Ph.D. (Sci.)**

For Ph.D. (Tech.) course at Sr. No. 1, 3, 5 and 12 in Table 2, the candidate must have passed the Master's degree examination in the Agrochemical Engineering / Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT/ [(M.E in Petrochemical Engineering/ Environmental Engineering) (Provided Bachelor Degree in Chemical Engineering)] or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For PhD (Tech.) course at Sr. No. 2 in Table 2 must have passed Master's degree examination in the Chemical Engineering/Bioprocess Technology/ Chemical Technology (any branch at ICT)/ Pharmacy/M. Tech. Biotechnology/Biochemical Engineering/ or any other UGC recognized university as equivalent there to with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) courses at Sr. No. 4, 6, 9, 10, 11 , 13, 14, 15 and 16 in Table 2, the candidate must

have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) courses at Sr. No. 17-20 in Table 2, the candidate must have passed the Master's degree examination in Mechanical / Production / Industrial / Thermal / Machine design / Machine tools / Automobile / Material Science / Electrical / Power systems / Control systems / Instrumentation / Civil / Structural / Environmental / Civil and Water management / Transportation engineering, construction / construction management / Geotechnical / Water Resources from any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPS (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Tech.) course at Sr. No. 7 in Table 2 must have passed the Master's degree in Food Engineering and Technology / Food Technology/ Biotechnology/ Food Biotechnology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category.

For Ph.D. (Tech.) course at Sr. No. 8 in Table 3.4.1 must have passed the Master's degree in Food Engineering / Food Technology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA 55% marks or equivalent CGPA in case of reserved category

For Ph.D. (Sci.) courses at Sr. No. 21 and 22 in table 2, the candidate must have passed the Master's degree examination in any biological faculty of science of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% MARKS OR EQUIVALENT CGPA in case of reserved category)

For Ph.D. (Sci.) courses at Sr. No. 23, 25 and 26 in Table 2, the candidate must have passed the Master's degree examination in the respective Subject of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 24 in Table 2, in Food Science the candidate must have passed the M. Sc examination in Food Science, Food Processing, Nutrition, Home Science, Post harvest Technology, Horticulture, Dairy Science, Biochemistry, Microbiology, Organic Chemistry of any UGC recognized University as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).

For Ph.D. (Sci.) course at Sr. No. 27 in Table 2, in Textile Chemistry, the candidate must have passed the M. Sc. examination in Textile Chemistry/ Textile Clothing/ Life Sciences/ Biochemistry/ Microbiology/ Chemistry of ICT or of any University recognized by UGC with minimum of 55% marks or equivalent CGPA (50 % marks or equivalent CGPA in case of reserved category).

Further, candidates from any of these streams must clear the written test of the institute which are based on the syllabus.

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

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

Apart from regular full time on- campus candidates, following candidates are also eligible for admission to Ph.D. (Tech.)/ Ph.D. (Sci.):

- (i) Permanent full time teachers of College/ Institute
- (ii) Employees of National laboratories/ Government Institutions
- (iii) Employees of Industry

However, persons qualified in NET/ CSIR/ DBT-JRF and holding valid fellowship obtained from Government funding agencies such as DST, ICMR, UGC, CSIR, etc. are exempted from the entrance written Test. Admissions to such candidates are open throughout the academic year.

#### **6.7.3.5.2 ELIGIBILITY CRITERIA FOR TEACHERS FOR ADMISSION TO Ph. D. (Tech.) / Ph. D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. above.

- a) The candidate should be a permanent teacher having full time teaching experience of at least two years in Degree College or five years in Junior college / Diploma College / Polytechnics (affiliated to statutory bodies).
- b) Teachers who have been in the service of any Engineering and Technology College approved by the UGC/AICTE are entitled for registration for Ph. D. (Tech.) with the faculty of the ICT.
- c) Teachers who have been in the service of any Science College approved by the UGC are entitled for registration for Ph. D. (Sci.) with the faculty of the ICT.
- d) The college management should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- e) Teachers can work in the ICT laboratories during vacations and holidays and after their office hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.
- f) A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who carry out research part time but put in at least 3 months full time work in a year in the ICT labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teachers a hands-on experience and to bring them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.
- g) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- h) Teachers registering themselves as Ph.D. student of ICT should not register any Masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this effect to avoid degeneration of this novel concept into a Ph.D. by unscrupulous means.
- i) If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate may be eligible for the UGC fellowship under our SAP programme, provided he/ she successfully clears the Institutional entrance tests.
- j) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. programme.

#### **6.7.3.5.3 - ELIGIBILITY CRITERIA FOR CANDIDATES WORKING IN NATIONAL LABORATORIES/ GOVERNMENT INSTITUTIONS FOR ADMISSION TO Ph. D. (Tech.) / Ph. D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. above.

- a) The candidate should be a permanent employee working in National Laboratories/ Government Institutions having minimum 2 years of service.
- b) The management of the organisation should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned candidate and his supervisor, which will be approved by the Head of Department/ Centre Co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- c) Such candidates can work in the ICT laboratories during holidays and after their office hours if they come from organisation in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-ordinator.
- d) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- e) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Doctoral programme.

#### **6.7.3.5.4 ADMISSION FOR INDUSTRY -SPONSORED IN-HOUSE CANDIDATES TO Ph.D. (Tech.) / Ph.D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. above.

1. The candidate should have minimum 2 years of industrial experience.
2. Industry should have a well-equipped Research and Development and Quality Control laboratory with at least one Ph.D. employee working in the set up in the relevant area.
3. Industry is required to get recognition from ICT by the following procedure:
  - i. After receiving request from an industry, a Committee appointed by the Vice Chancellor, ICT will make a visit to the industry laboratory. The ICT appointed Committee will consist of Dean (RCRM) as Chairman with a Professor nominated by the Vice Chancellor and the Head of the Department in the area of proposed research.
  - ii. The committee will evaluate the activities and the competence of the R and D of industry following the guidelines of similar to those proposed by DSIR. All the expenses in connection with the visit will be borne by the industry concerned. The ICT committee will make recommendations to the Vice Chancellor, ICT for approval. The industry R and D will be recognized by the approval of the Vice Chancellor, ICT. In case the laboratory is already recognized by DSIR, the visit by ICT committee will not be necessary.
  - iii. Once the R and D laboratory is recognized by the ICT, the industry is required to pay Rs. 5 lakhs for first four years (typical duration of Ph.D. work) and necessary contingency amount of Rs. 50,000/-per candidate per year (in the name of ICT, to be utilized by the Research Guide) for the conduction of the research activity. After

four years, the renewal of the recognition will continue by payment of Rs. 1 lakh per year. Further, the industry should try to get recognition for their R and D set up from DSIR, based on the recommendation of the ICT appointed Committee.

4. During a year, an industry may nominate up to two employees (with required qualification) for registering for the doctoral degree at ICT under the supervision of ICT faculty.
5. The candidate is required to pay all the Ph.D. fees (over and above laboratory eligibility fees) as proposed by the ICT at appropriate time and will not be eligible for any fellowship. Also, the other requirements, like eligibility criteria, qualifying institutional tests, completion of course work, etc. need to be fulfilled by the industry candidate.

## 6.7.4 FEES, CONCESSIONS, CANCELLATIONS AND REFUND

### 6.7.4.1 FEES PRESCRIBED:

The candidates admitted 2020-21 are required to pay fees as prescribed by the State Government. The institutional fees to be paid by all the admitted candidates are as follows :

Ph.D. (Tech.)/ Ph.D. (Sci.)

| Sr. No. | Type of Fees    | Open and All reserve category students Fee for 1 <sup>st</sup> Year (Rs.) |
|---------|-----------------|---|
| 1.      | Library Deposit | Rs. 2,000/-   |
| 2.      | Fees            | Rs. 76,000/-  |
|         | TOTAL           | Rs. 78,000/-*   |

\*In addition to above mentioned fee candidate will have to pay Rs. 20,000/- per year as contingency.

## 6.7.5 EXAMINATION PATTERN

Please refer ICT, Mumbai campus for Examination Pattern

## 6.7.6 ACADEMIC CALENDAR 2020-21

**The following shall be the Academic Calendar:**

(A) INTEGRATED MASTERS COURSES

TRIMESTER 1 : September 01, 2020 to December 31, 2020

TRIMESTER 2 : January 01, 2021 to April 30, 2021

TRIMESTER 3 : May 01, 2021 to August 31, 2021

Note – the above mentioned date are tentative and likely to change based on admission round. The integrated master program is TRIMESTER pattern. Each trimester is of Four month duration.

(B) DOCTORAL COURSES

Academic Year : July 01, 2020 to June 30, 2021

Note – the above mentioned date are tentative and likely to change based on admission round.

## 6.7.7 REQUIREMENT OF ATTENDANCE

Please refer ICT, Mumbai campus for Attendance rule.

## 6.7.8 IDENTITY CARD

At the beginning of each academic year, a regular bonafide student is issued a smart Identity Card with his/ her latest photograph printed it, on payment of the necessary charges. The

students must wear the I-card while on campus. I-card is also necessary for appearing at all tests and examinations. If a student leaves the course halfway, after taking admission, he/she must surrender the I-Card in the Academic office.

### **6.7.9 WORKING HOURS**

- (a) Academic Timings: The academic working hours of the institute are between 8.30 a.m. to 5.30 p.m., with lunch break from 12.35 to 1.30 p.m.
- (b) Office Hours: 10.30 a.m. to 6.00 p.m., with lunch break from 1.15 to 1.45 p.m. - on all working days. Cash Counter: 11.00 a.m. to 1.15 p.m. and 1.45 p.m. to 4.00 p.m.

The office will remain closed on second and fourth Saturdays of a month, in addition to Sundays and public holidays.

### **6.7.10 GENERAL**

The medium of instruction for all courses is English.

**Physical fitness:** The Vice Chancellor at his discretion may refer any candidate to the appropriate medical authority for ascertaining the physical fitness of the candidate to undergo the requirements of the course.

The report of medical authority and the action taken by the Vice Chancellor shall be submitted to the Regional Head of Technical Education for information. It is to be noted that physically handicapped candidates are not provided with any additional facilities as far as the academic activities pertaining to the course is concerned.

The Vice Chancellor may verify the antecedents of any candidate through the appropriate police authority.

The report received from police authority and the action taken by the Vice Chancellor shall be submitted to the Regional Head of Technical Education for information.

Notwithstanding anything contained in these Rules, if the Govt. / Institute takes any policy decision pertaining to first year admissions, the same shall be brought in to effect at that point of time.

### **6.7.11 CONDUCT AND DISCIPLINE FOR ALL STUDENTS:**

Students while studying at ICT, if found indulging in any anti-national activity contrary to the provisions of Acts and Laws enforced by Government or in any activity contrary to Rules of discipline, will be liable to be expelled from the Institute without any notice by the Vice Chancellor of the Institute.

**Action against ragging:** Maharashtra Prohibition of Ragging Act 1999 which is in effect from 15th May 1999 has the following provisions for Action against Ragging.

- a) Ragging within or outside of any educational institution is prohibited,
- b) Whosoever directly or indirectly commits, participates in, or propagates ragging within or outside any educational institution shall, on conviction, be punished with imprisonment for a term up to 2 years and/ or penalty, which may extend to ten thousand rupees.
- c) Any student convicted of an offence of ragging shall be dismissed from the educational institution and such student shall not be admitted in any other educational institution for a period of five years from the date of order of such dismissal.
- d) Whenever any student or, as the case may be, the parent or guardian or a teacher of an educational institution complains, in writing, of ragging to the head of the educational institution, the head of the educational institution shall, without prejudice to the foregoing provisions, within seven days of the receipt of the complaint, enquire into the matter mentioned in the complaint and if, *prima facie*, it is found true, suspend the student who is accused of the offence, and shall, immediately forward the complaint to the police station having jurisdiction over the area in which the educational institution is

situated, for further action. Where, on enquiry by the head of the educational institution, it is found that there is no substance, *prima facie*, in the complaint received; he/ she shall intimate the fact, in writing, to the complainant. The decision of the head of the educational institution shall be final.

- e) If the head of the educational institution fails or neglects to act in the manner specified in section "d" above when a complaint of ragging is made, such person shall be deemed to have abetted the offence and shall, on conviction, be punished as provided for in section "b" above.

If any of the statement made in application form or any information supplied by the candidate in connection with his or her admission is later on at any time, found to be false or incorrect, his or her admission will be cancelled, fees forfeited and he or she may be expelled from the Institute by the Vice Chancellor.

Note:

The orders issued by the Hon'ble Supreme Court/High Court/Government regarding Prohibition of Ragging Act, will be made applicable as and when issued. The same shall be binding on all concerned.



## 6.8 RULES AND REGULATIONS ABOUT RESERVATION

Reservation in admission only for SC/ST/OBC categories on All India basis is applicable to all the Integrated Masters' courses.

### 6.8.1 CASTE CERTIFICATE AND CASTE/ TRIBE VALIDITY CERTIFICATE.

- a) Caste Certificate: The candidates belonging to the backward class category will be required to submit the Caste Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.
  - b) Caste Validity Certificate: The candidates belonging to the SC/ST/OBC category will be required to submit the Caste/Tribe Validity Certificate at the time of admission, failing which the category claimed will not be granted and the candidate will be treated as a General Candidate.
- 

## 6.9 CANCELLATION OF ADMISSION AND REFUND OF FEES:

Refund of tuition fee, development and other fees after cancellation of admission secured at ICT. Candidate who has been admitted to ICT may cancel admission by submitting an application in duplicate, in the prescribed Pro forma - E and request for refund of fees. The refund of fees as applicable shall be made in due course of time. It is made clear that such application for cancellations will be considered if and only if the admission has been confirmed by paying the prescribed tuition fee and other fees in full and by submitting all the necessary original documents. Refund shall be made after deduction of cancellation charges as shown below -

| Sr. No. | Situation   | Refund  |
|---------|---|---|
| 1       | Request received before the date of start of academic session             | Entire fee less Rs.1000/-   |
| 2       | Request received after the date of start of academic session              | Entire fee less the total fee for one month. (Tuition, development, other and hostel fee) |
| 3       | Request received after 30 days from the date of start of academic session | No refund (except Library Deposit)  |

Notes:

- 1) Academic session means start of lectures, which will be displayed on the ICT website and Notice Board.
- 2) For calculation of amount on the pro-rata basis, one month shall be treated as one unit.
- 3) Students admitted under reserved category are hereby informed that if any student leaves the course in – between, He/She has to pay full fees for that Academic Year.

**All Rights regarding the admissions at the ICT are reserved with the Vice Chancellor, ICT.**

## 6.10 CENTRAL LIBRARY

### 6.10.1 INTRODUCTION

The Central Library, established in the year 2018, is a special library. The Library caters to the educational and research needs of the academic community of the institute. It provides supports to both Academic and Research work. The Central Library is functioning on Ground floor of the academic building. The library provides open-access system to its user community. It is having a good number of collections in basic science, specialized collection in Chemical Engineering, Chemical Sciences, And Chemical Technology, Material Physics, Industrial Chemistry etc. It is also having a number of reference books and Journals. The library is having access to a number of e-resources. The library is currently functioning manually but is in the process of automation.

### 6.10.2 LIBRARY TIMINGS

Monday to Saturday from 9.30 am to 5.30 pm (On Working Days)

The library remains closed on Sundays and Holidays.

### 6.10.3 LIBRARY LAYOUT

The Library is located on the Ground Floor of the Academic building of the institute and is centrally accessible.

### 6.10.4 MEMBERSHIP

The bonafide students and faculty of the institute have book lending facility. Book borrowing facility can be availed against ID card.

### 6.10.5 LIBRARY COLLECTION

#### Printed Resources

- **Books**

The library has substantial number of latest Indian as well as international edition printed books in its collection. The books are in the area of Physics, Chemistry, Mathematics, Applied Chemistry, Chemical Technology, Chemical Engineering, Industrial Chemistry, Material Physics, Environmental Science, Food Technology, Polymer Science, Textile Technology etc.

**Access:** Books can be searched by computerized catalogue using KOHA software.

- **Printed Journals**

The library subscribes to a number of National and International scholarly journals from renowned publishers like Elsevier, STM, Advanced research group and others.

**Access:** Journals can be searched by computerized catalogue using KOHA software.

- **Digital Resources**

The library has a collection of e-resources like e-databases, e-journals, and would soon be able to access digital resources similar to the parent institute that is Prof. M. M. Sharma Library, ICT Mumbai Campus. The digital resources include ejournals from renowned publishers like Elsevier, RSC, Wiley, etc. and e-databases like Scopus, Reaxys, etc.

- **Services**

The library is providing services to its user community like,  
Circulation, Reading room, Reference/referral service

- **Contact:** Rajesh Kumar Malik, Librarian

Central Library, ICT – IOC campus

IIT Kharagpur extension centre, Bhubaneswar, Odisha - 751013

## 6.11 HOSTELS

### 6.11.1 PREAMBLE

ICT have rented room facility in hostel blocks.

Wardens manage all the affairs of the accommodation and are assisted by accommodation office staff.

### 6.11.2 HOSTEL FEES

| Category | Capacity | Fees* Rs.       |
|----------|----------|-----------------|
| Boys     | 60       | 3,750 per month |
| Girls    |          | 3,750 per month |

\*The above mentioned fees subject to change.

### 6.11.3 DISCIPLINE AND DECORUM

1. Smoking and consumption of alcohol is strictly prohibited in rooms and public places in the entire campus of ICT. A strict disciplinary action will be taken against the student involved in misdeemeanour and illegal activities.
2. All the girl students have to be in their respective rooms by 10.00 pm and boys by 11.00 pm. An affidavit to this effect has to be given by students and their parents at the time of admission.
3. Action against ragging: Government Prohibition of Ragging Act is in effect. (See details later from UGC in this regard). Any case of ragging should be reported by the victim in writing within three days of the incident to the respective warden with copies marked to: Warden, Dean: Student Affairs and Human Resource Development and Registrar ([registrar@ictmumbai.edu.in](mailto:registrar@ictmumbai.edu.in)).
4. Detailed rules and regulations will be provided during admission.





#### **6.11.4 TEMPORARY HOSTEL FACILITY FOR STUDENTS**

1. Institute of Chemical Technology- IndianOil Odisha Campus Bhubaneswar (ICT-IOCB) has its temporary hostel in ITER college. ITER college hostel has complete facilities to fulfil academic and personal requirements of the students with a conducive environment to live and learn.
2. Hostel is located inside the ITER college campus, which is in the heart of the city and at a prime location. The hostel is very near to Khandagiri, Bhubaneswar that is almost 9 km from ICT-IOCB campus. Both these places are well connected through public transport around the city.

**AIRPORT:** The Biju Patnaik International Airport is about 4 Km from the transit campus

**RAILWAYSTATION:** The Bhubaneswar Master Canteen Square (Railway Station) is about to 7.5 Km from the campus.

As a temporary arrangement one hostel for boys and one hostel for girls has been made available in the ITER campus.

All ICT-IOCB students are accommodated on one floor [In separate Hostels]. There are 22 rooms on one floor with 2 students accommodated in one room at any point of time.

**Hostel fees: 45,000/- INR**

**Mess fees: 30,000/- INR**

**Total fees: 75,000/- INR (Per Year)**

3. For commuting to the ICT-IOCB campus from ITER hostel bus arrangement has been provided to students.
4. The mess food (breakfast and dinner) has also been made available to the students at the Hostel campus, while lunch is provided at the ICT-IOCB campus. Hostel rooms are regularly cleaned by the housekeeping staff.
5. There are temporary wardens appointed for hostel, separate for Boys and Girls. The hostel life is fully secured and constantly monitored through the vigilant security services.

| Sr. No. | Warden        | Name        | Phone          |
|---------|---------------|-------------|----------------|
| 1       | Boy's Hostel  | Mr. Sangram | +91-7381027660 |
| 2       | Girl's Hostel | Ms. Sonali  | +91-8658386547 |

6. There are indoor games arrangement inside the hostel. For an example: - Table Tennis, Carrom, Chess, Badminton, Basket Ball, Garden Gym and indoor gyms as well.

#### **6.12 AUDITORIUM**

The institute has an elegant state of the art Auditorium equipped with latest hi-tech gadgets and equipment. This auditorium serves as the venue for seminars, workshops, conferences, events, presentations and display of educational videos conducted regularly by the institute.

#### **6.13 COUNSELLING SERVICES**

Counseling services of ICT Mumbai Campus would be extended to ICT IOC Campus.

## 6.14 TRAINING AND PLACEMENT CELL

Integrated M. Tech. (after 12th/HSC with 15 trimesters and alternate trimester in industry leading to 2 years experience). This is an innovative program where students may get stipend from Industry. During the course work student will be trained in an industry leading to two years of total industrial experience. This will help student to acquire better understanding of industrial processes and intern helps in acquiring placement.

There are many chemical and allied industry in the country employ students of the ICT. Alumni are at the helm of affairs of large number of renowned chemical industries. A placement cell is launched with the participation of the UDCT Alumni Association (UAA) to assist campus placement which begins in the month of July, and continues throughout the year, before the students graduate. The Institute's graduates are highly-sought after by the Indian and global chemical industry and their salaries rank among the highest in the country, even dwarfing the salaries of graduates of the premier branded institutes; placements achieved via campus interviews fetch emoluments ranging from Rs. 3.50 to Rs 14.00 lakhs per annum. What is most striking is that these placements are in hard-core industries relevant to the students training and education, and not in the software industry, which has been a major source for employment post graduates of some of the best institutes in India. With regards to post-graduate research opportunities, a good number of our students are offered admission by some of the world's best universities to pursue graduate studies. The Institute is one of the few institutions in Asia that is regularly represented in the graduate student bodies of prestigious institutes such as the Massachusetts Institute of Technology, Stanford University, University of California, Berkeley, Caltech, UCSB, Princeton, University of Michigan, Ann Arbor, University of Texas, Carnegie Mellon University, Purdue University, University of Massachusetts, Cambridge University, Imperial College, Manchester University, Twente University, Monash University, to name a few. All of them receive full financial support. Several universities write to us to recommend good students. Leading foreign universities have signed MOUs for student exchange through proper support for the exchange. On an average, about 75 students from various degree programmes get such fellowships. Quite a few Ph.D. holders go abroad for post-doctoral studies in reputed institutes; this is directly linked to the quality of research produced and personal standing of the faculty in international community.



# ICT Mumbai- Marathwada Campus, Jalna



## MESSAGE FROM THE DIRECTOR



*Dear Aspiring students and parents,*

The year 2020 so far has seen very unusual situation across the world due to COVID19 fear and lockdowns. Hence at the outset, I congratulate you for showing courage and performing well in the competitive exams. You must have heard and read about Institute of Chemical Technology, now a Deemed to be University, with programs focusing on “Chemical Engineering and Chemical Technology”. ICT is nationally and internationally renowned for imparting world class education and carrying out cutting edge research. Chemistry touches all parts of life- food, pharmaceuticals, plastics, paints, textiles and so on. Biotechnology, environmental science and energy are also inherent part while studying the Chemical Technology.

With the desire of industry, ICT Mumbai came into existence on 1st October 1933 as University Department of Chemical Technology (UDCT), Bombay University. It

started with the B.Sc. Tech programs in Chemical Engineering and Textile. In these 87 years, ICT has grown, evolved and emerged as an eminent institute. It has become an independent university in 2008 and got recognition from the State Assembly of Government of Maharashtra as “Institute of Eminence”- at par with IITs and IISERs. In 2018, ICT opened 2 more campuses- one at Bhubaneswar (Odisha) and the other one at Jalna, Marathwada. History repeats! Indeed, these off-campuses were also born with the desire of the industry. Hon’ble Chief Minister Devendraji Phadanvis on 3<sup>rd</sup> March 2016 in the 5<sup>th</sup> Convocation of ICT announced that the State Government would like to support ICT (Mumbai) to open a sub-center in the Marathwada region. In the record time of 14 months, on 12<sup>th</sup> May 2017, the Government allotted 203-acre land in Siraswadi, Jalna. The Hon’ble Chief Minister also participated in the Bhoomi Poojan ritual on 4<sup>th</sup> May 2018.

Five Years Integrated M. Tech. in Chemical Engineering with trimester pattern is designed under the able leadership of visionary personality, Padma Shri Prof. G.D. Yadav, former ICT Vice chancellor. This innovative trimester pattern enables students to study at the campus and go on Industry Internship on alternate trimesters. Another novel feature is that the student gets a minor degree in selected Chemical Technology in parallel. Currently the campus is running at the rented premises of Beej Sheetal in MIDC area. The hostel facilities are provided in the Jalna city (we rented flats in Tejomay Apartments, Yogeshwari colony, Jalna). This Marathwada Campus at Jalna is abbreviated as Marj Campus. The first batch of 60 students got admission. Mahaguru Padma Vibhushan Prof. M.M. Sharma inaugurated the academic endeavor in Jalna Campus on 28<sup>th</sup> August 2018. His inaugural lecture was a mesmerizing overview of global scenario, history and the role of Chemistry in day-to-day life (it is available on you-tube). Simultaneously, 25 doctorate students in various subjects are also admitted and they work as Teaching Assistant- Research Associate (who are fondly called as TARA). They form a soft bridge between the young undergraduate students and the faculty members. Now 16 faculty members (including Associate Dean, Industry) and 2 senior adjunct professors make the MARJ Campus team. Pep talks, seminars, skill development programs, visits by senior faculty from ICT Mumbai, video conferencing with foreign scientists is a regular feature at Jalna campus.

Co-curricular activities involve celebrations of Teachers' day, National Science day, Sankranti and Kite flying, Pi day, Water day, other cultural events, and sports events like Dhamaka and Urja. Also, Science Quiz and competition on Industry Defined Problems (IDP) are very popular activities where other college students also participate. A large number of factory visits at the beginning of trimester is a routine feature. A Local Advisory Committee is in place to guide as well as assist to overcome local problems if any. Library (and e-library too), outdoor sports facilities are set up along with other facilities such as gym, mess and canteen. Campus publishes MARGJAL, a quarterly e-newsletter, regularly to capture happenings at Marj campus and also to give opportunity for creativity of students (all the old copies are available on ICT Mumbai website).

My dear prospective students and parents, I look forward to have you enrolled for various programs offered at ICT MARJ and assure you that after 5 years you will pat your own back for taking the right decision of getting admission in ICT Jalna Campus. My best wishes to all readers!

**Prof. S.S.Lele**  
Director



## IMPORTANT INSTRUCTIONS

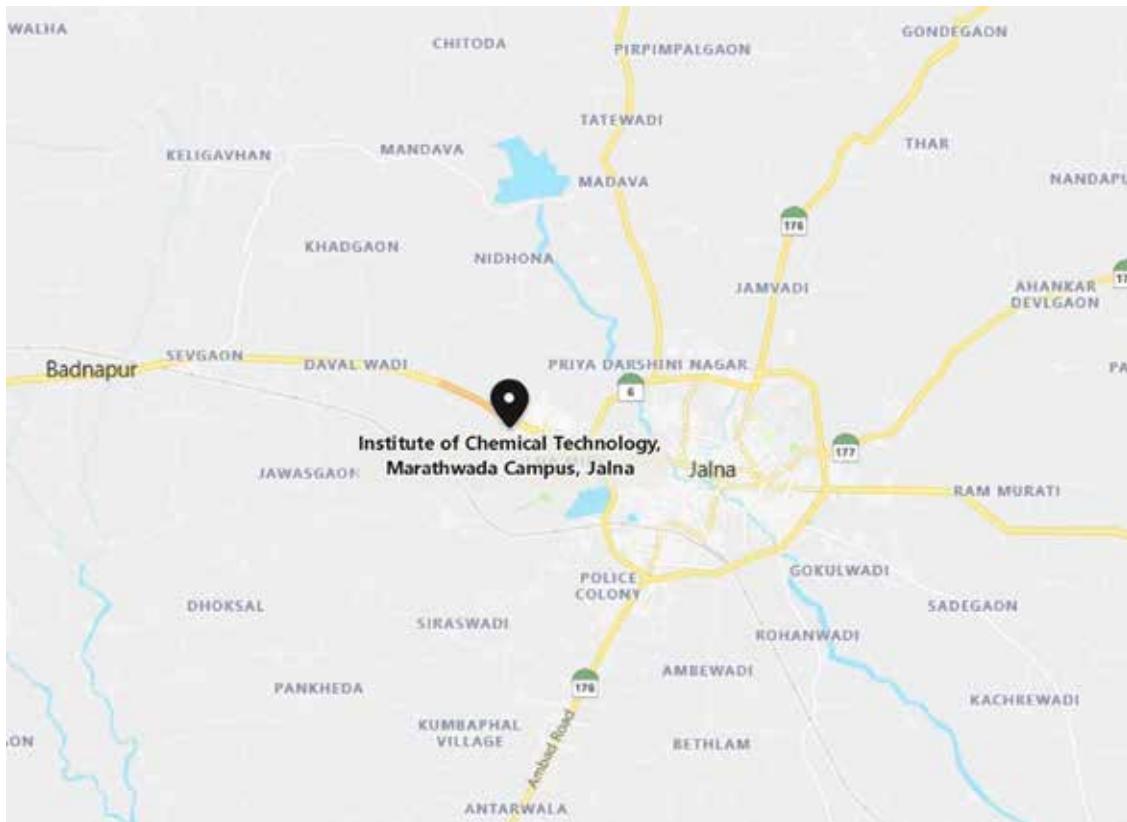
1. The fees for the submission of a single form for a particular course at ICT are as follows

| Course                           | Open Category | Reserved Category ** |
|----------------------------------|---------------|----------------------|
| Under graduate and Post graduate | Rs. 1000/-*** | Rs. 500/-***         |

\*\* Fees for Reserved Category candidates are applicable to the candidates from the State of Maharashtra only.

\*\*\* The payment for the same should also be made online (extra online charges may apply)

3. The admission form for the academic year 2020-21 may be filled online on the ICT website, <http://www.ictmumbai.edu.in/DisplayPage.aspx?page=geandItemID=5>
4. Anybody, not belonging to the Reserved Category, is found applied under that category will be disqualified.
5. Please read the Handbook carefully before filling the admission form.
6. Due to circumstances beyond control of authorities, the schedule of admission may change and it will be notified on the website. Candidates are advised to watch the website regularly.
7. Merit list/ schedule of admission rounds for all PG courses will be displayed on www.ictmumbai.edu.in and the ICT Notice Board. Please note that no individual correspondence will be made in this regard and it is the responsibility of the candidates to visit the webpage regularly. PG candidate must visit ICT website time to time to check the timetable for written test and interview and changes if any.
8. Pleading ignorance about information displayed on the web shall not be entertained.
9. Admission to hostel on the Marathwada Campus, Jalna is as per the rules laid down and the quota for various courses.
10. Merit is the only criterion for admission to any course and seats are reserved as per Government of Maharashtra's directives in this connection for campuses in Mumbai and Jalna. The Bhubaneswar campus will follow the all India criterion.
11. Biometric attendance system is adopted for all classrooms and lectures are recorded. An auto generated message is sent to the student and his/her registered parent/guardian at 9.00 pm if the student has missed any lecture. Thus, a record is available to ICT authorities on real time basis.
12. There are no agencies operating on behalf of the institute and there is no capitation fee or donation in regard of admissions. Be careful of any persons claiming to offer admission to the ICT or knowing authorities. No extraneous considerations should be brought to exert pressure on the Admission Committee. It will be strictly dealt with. We take pride in fairness and openness in admissions and all matters and give justice to one and all.
13. All correspondence regarding admissions should be addressed to the Registrar, Institute of Chemical Technology, Nathalal Parekh Marg, Matunga, Mumbai-400019 (admission@ictmumbai.edu.in; +91-22-33611111/ 2222; Fax: +91-22-33611020).



## APPROACH ROUTES TO ICT MARATHWADA CAMPUS AND LANDMARKS

A location map of the ICT, available on Google maps, is provided above and the various access routes are described from nearby railway stations, bus stops and the airport of Aurangabad

### Landmarks in the vicinity of ICT

M/s Beej Sheetal Innovations Centre Pvt. Ltd, BT-5 Biotechnology Park, Jalna Industrial Area MIDC, Additional MIDC, Aurangabad Road, Jalna, Maharashtra 431213 is a rented building by ICT, Marathwada Campus Jalna. It is on Aurangabad Highway near Sunrise Rajasthani Dhaba.

- A From Jalna Railway Station:** -Directions from Railway Station road to ICT, Marathwada Campus, Jalna. The ICT can be reached in about 15 minutes on foot following Bhagyanagar, Moti Talab, and Chandanzira, take a left turn from Sunrise Rajasthani Dhaba.
- B From Bus Stand Jalna:** -Directions from Jalna Bus Stand to ICT, Jalna Campus via Bhokaradan Naka straight on Priyanka Motors road, Hotel Flora inn and take a left turn from Sunrise Rajasthani Dhaba.
- C From Aurangabad Airport:-** Directions from Aurangabad Airport to ICT Marathwada Campus Jalna, via Aurangabad - Nagpur Rd/Jalna - Aurangabad Rd/Nagpur - Aurangabad - Mumbai Highway can be reached in 51 min. From Jalna toll, the Institute is about 1 km on the right turn from Sunrise Rajasthani Dhaba.

<https://www.google.com/maps/search/ict+jalna+marathwada/@19.90499,75.8848323,11z>

## ABOUT ICT MARATHWADA CAMPUS JALNA:

Category I status enabled Institute of Chemical Technology, Mumbai to have additional off-campuses apart from that in Mumbai. Institute of Chemical Technology (Mumbai) Marathwada campus Jalna, fondly known as ICT-MARJ, was established on 4<sup>th</sup> May 2018 with the assistance of the Government of Maharashtra. It was entrusted with the legacy of ICT and has paved a distinctive and innovative path. Mahaguru Padma Vibhushan Professor M.M Sharma inaugurated the Academic endeavor of MARJ on 28th August 2018. The MARJ campus is running with the students from two academic batches from 2018-19 and 2019-20.

### **VISION**

To be a vibrant educational institute with innovative programs and research culture in the field of chemical and allied sciences.

### **MISSION**

- Produce trained engineers and problem solver research fellows.
- Develop science and technologies of global standards having relevance to India as well as to local Industry from Marathwada region.
- Develop entrepreneurship and provide incubation centres for encouraging Start-ups in Marathwada Region. Catalyse the process of generating wealth from knowledge creating bridge among industry, agriculture, environment and society.

## **LOCAL ADVISORY COMMITTEE**

LAC is formed to guide and facilitate solving local problems on the Campus. The current members are as follows:

| Sr. No. | Name                     | Designation                                |
|---------|--------------------------|--|
| 1.      | Prof. S.S Lele, Chairman | Campus Director                            |
| 2.      | Shri. Govardhan Agarwal  | President, UAA Marathwada Chapter          |
| 3.      | Shri. Prasad Kokil       | President, CMIA/Nominee                    |
| 4.      | Shri. Kishore Agarwal    | President, Jalna Entrepreneurs Association |
| 5.      | Shri. Vinod Lahoti       | President, Rotary Club of Jalna            |
| 6.      | Shri. Ravindra Binvade   | Collector, Jalna                           |
| 7.      | Shri. Santosh Khandekar  | Municipal Chief Officer, Jalna             |
| 8.      | Shri. Mahesh Shivankar   | Jt. Director, DTE, Aurangabad Region       |
| 10.     | Shri. Ashish Mantri      | VC's Nominee                               |
| 11.     | Shri. Ranjeet Gulati     | VC's Nominee                               |
| 12.     | Dr. Parag Nemade         | Member Secretary                           |

Hostel is set up by renting suitable premises and also some new buildings are under construction. Students activities such as cultural events, sports Dhamaka, National Sc. Day Celebration, Science Quiz, Industry Defined Problems competition are being organized in addition to visit to ICT Mumbai main campus. Several factory visits are organized in every trimester beginning. Pep talks by Industry experts, seminars by academic experts, visit by foreign scientist, video conferencing feature regularly at Jalna campus popularly abbreviated as MARJ. Good library, sports facilities are set up along with other facilities such as gym, mess and canteen. A quarterly newsletter Margjal is published regularly to capture happenings at Jalna campus and also to give opportunity for creativity of students. In January 2019, 30 students have been placed in 14 different industries in Jalna as IPT 1. Others are studying Term 2 subjects and on weekly off days entire class has common activities. Doctorate candidates have also joined, and research culture of ICT is set in !



## ICT MARJ HIGHLIGHTS

Despite being a two years young campus, ICT MARJ showed commitment and encouraged student involvement in various co- and extra- curricular activities. Right from its inception, various academic, non-academic, extra-curricular and social activities have been part of academic life.

1. **MOUs** with prestigious Institutes- it signed MOUs on research and academic cooperation with various academic institutes:
  - i. University of Castilla-La Mancha, Spain
  - ii. Shri Guru Govind Singhji Institute of Engineering and Technology, Nanded
  - iii. MSS's College of Engineering and Technology, Jalna
  - iv. Jalna Education Society

- 2. Projects, Consultancies and Publication-**
  - i. Project on the utilization of wastes from TPA production process.
  - ii. It is involved in the Consultancy Assignments with Garware Polyester, Jayraj Industries.
  - iii. Over 20 manuscripts have been accepted for publication in high quality peer reviewed journals.
- 3. Faculty Achievements-** ICT Marj faculty published 18 papers, organized skill development programs, conferences, and delivered 32 invited talks at various academic and research fora.
  - i. The Director has given several orations to students and general public in Marathwada region to develop scientific temper.
  - ii. Two Faculty members have been selected as Fellows of prestigious societies, Association of Food Scientists & Technologists (INDIA) and Maharashtra Academy of Sciences.
  - iii. One faculty member received National Award, DST-Awsar Award from the President of India.
  - iv. Two faculty members' publications were cited to be highest cited/downloaded publications by respective journals, (a) Advanced Materials, Wiley; (b) Advanced Composites and Hybrid Materials, Springer.
- 4. Achievements of ICT TARA:** Teaching Assistant and Research Associates (TARA) have been cited with awards at national and International seminars, Conferences, workshops.
5. Pep talks, industry visits, seminars and interactions with industry experts is a routine practice on the campus.
6. **MARGJAL:** ICT MARJ publishes its e-newsletter at the end of every trimester. e-newsletter that caters different activities occurring at Marj campus (for details and past issues visit on ICT Marj website).
7. **Merit and Leadership Awards:** A series of merit and leadership awards are given every year for growing interest and giving encouragement to the students.
  - i. Prof. Smita Lele endowment namely “Dr. Smita Lele Merit Award” has been activated through her personal donation for getting highest marks at Trimester 1 of iMTech.
  - ii. Dr. M. Sriram announced “Vedaalli Vaidyanathan Award” for the First Year Girl Student of ICT MARJ.
8. **ISR & PSR:** Campus has significantly contributed as Institutional Social Responsibility (ISR) and personal social responsibility (PSR) by organizing several campaigns such as Swachh Bharat Abhiyan, Unnat Bharat Abhiyan, Water Day, National Science Day, Education Day etc.
9. **URJA:** Every year a sport event is organized to cheer students, faculties and support staff. It includes various indoor and outdoor games such as Chess, Carrom, Table-Tennis and Cricket, Volleyball, Kabaddi etc.
10. **Tarang:** Makar Sankranti is celebrated with locally made til-gurh laddoos and distributed among the students. In this time students, staff and faculty show their enthusiasm by flying the kites.
11. **Pranamya:** An official welcome of 1st year students, every year a Freshers' day is organized by senior students of ICT MARJ. Freshers Day of ICT MARJ is a day that is filled with excitement, joy, music, enthusiasm, laughter, and happiness.
12. **Online Assistance:** To increase the knowledge and passion for a subject beyond the classroom and boardroom, the following YouTube channels are established by our distinguished professors:

- i. Prof. M. M. Sharma  
(<https://www.youtube.com/channel/UCHSQoS2utYOcVADZ6yMwTYg>)
- ii. Prof. G. D. Yadav  
(<https://www.youtube.com/playlist?list=PLclyJH91-TvvTScCVrcih3nrrPGgf8U8R>)
- iii. Prof. Smita Lele  
(<https://www.youtube.com/channel/UCZBLRumLxPWUMwcQLKhIj0w>)

ICT Marathwada Campus offers a vibrant environment with a very unique structure of fractal academics wherein students are engaged in various co-curricular activities without increasing any academic load. The institute offers ample openings for the holistic development of young minds who are imbued with the spirit of scientific enquiry and who will take up the mantle of scientific venture in the years to come.

## OUR FACULTY TEAM:

A nutshell structure of the faculty members of ICT -Marathwada Campus, Jalna has been portrayed here with a quick view. The details are given later.

| Sr. No | Name                          | Designation                             | Peer-reviewed publications | Patents | H-Index | Citations |
|--------|-------------------------------|---|----------------------------|---------|---------|-----------|
| 1      | Prof. Smita S. Lele           | Director of ICT- Marathwada Campus      | 142                        | 03      | 29      | 3779      |
| 2      | Dr. Parag R. Nemade           | Deputy Director- ICT- Marathwada Campus | 19                         | 03      | 11      | 608       |
| 3      | Dr. Girish Joshi              | Associate Professor                     | 102                        | 01      | 17      | 887       |
|        | Prof. Sharad Lahoti           | Associate Dean, Industry                |                            |         |         |           |
| 4      | Dr. Manoj B. Gawande          | Associate Professor                     | 105                        | 03      | 38      | 7000      |
| 5      | Dr. Manoj Kumar Jadhao        | Assistant Professor                     | 12                         | 00      | 06      | 101       |
| 6      | Dr. Sandeep Bhairat           | Assistant Professor                     | 10                         | 00      | 06      | 97        |
| 7      | Dr. Nagsen P. Meshram         | Assistant Professor                     | 11                         | 00      | 05      | 104       |
| 8      | Dr. Kapil Irwantrao Sagrolkar | Assistant Professor                     | 04                         | 00      | NA      | NA        |
| 9      | Dr. Somen Mondal              | Assistant Professor                     | 21                         | 00      | 09      | 196       |
| 10     | Dr. Debashis Kundu            | Assistant Professor                     | 15                         | 00      | 05      | 86        |
| 11     | Dr. Saurav Raj                | Assistant Professor                     | 12                         | 00      | 04      | 90        |
| 12     | Dr. Joyita Sarkar             | Assistant Professor                     | 07                         | 00      | 05      | 83        |
| 13     | Dr. Sushobhan Ghosh           | UGC Assistant Professor                 | 24                         | 00      | 13      | 678       |
| 14     | Dr. Ritika Joshi              | Assistant Professor (Temporary)         | 16                         | 00      | 07      | 130       |
| 15     | Dr. Atul H. Bari              | Assistant Professor (Temporary)         | 08                         | 00      | 04      | 68        |



# INSTITUTE OF COMPUTER TECHNOLOGY

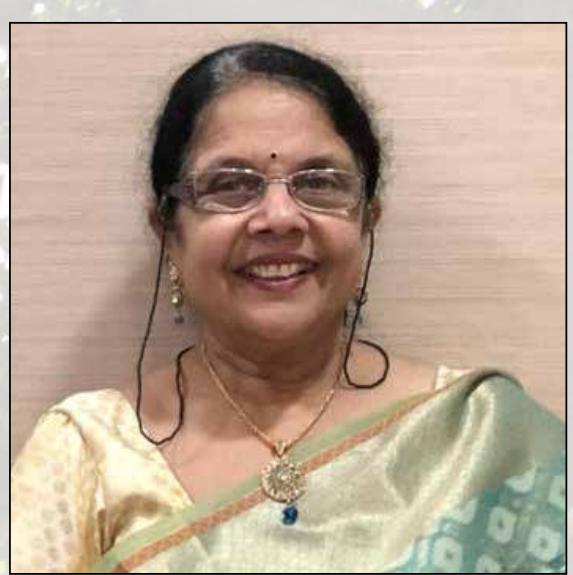
Category I Deemed be University (MHRD/UGC) Elite Status and Candidate of NAAC

# MARATHWADA CAMPUS

Website: [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)

# FACULTY PROFILE

ICT Mumbai,  
Marathwada Campus, Jalna



**PROF. S. S. LELE**

*B. Chem. Eng., M.Chem.Eng., Ph.D. (Tech.)  
Fellow of AFST, Fellow of BRSI, Fellow of  
Maha. Acad. of Sc.*

**DIRECTOR,  
ICT-Mumbai Marathwada Campus,  
Jalna**





### PROF. S. S. LELE

B. Chem. Eng., M. Chem. Eng., & Ph.D. (Tech)  
Fellow, Maharashtra Academy of Sciences,  
Fellow, Biotech Research Society of India (BRSI)  
Fellow, Asso. Of Food Sc. And Tech. (AFST)

**Director of ICT-Marathwada Campus Jalna and Professor of Biochemical Engineering**

### RESEARCH INTERESTS :

Food product/process development, fruit and vegetable processing to reduce post-harvest losses, fruit wines, holistic utilization of fruit and vegetable wastes, food allergy

**Recognized Research guide for:** Ph.D. (Tech.) Food Engineering and Technology, Food Biotechnology, Ph.D. (Sci.) in Food Science, Biotechnology

**Guided students:** Ph.D. 32, Masters: 71, Ongoing Ph.D.: 06

**Total Research Publications:** National: 11, International: 131, Patents granted: 03, H-index: 29, Citations: 3779

**H-index as per scopus:** 22; **Citations as per scopus :** 2093

Cumulative impact factor for the last 5 years : 63

**Patents granted :** 02

### NATIONAL AND INTERNATIONAL AWARDS:

VASVIK award (2018), "Uncha Maza Zoka" Zee Marathi, (2016), Distinguished Alumnus Award of UAA under Academics (2015)

### Dr. PARAG R. NEMADE

B. Chem. Eng., M. S. and Ph.D. (University of Colorado)

UGC Assistant Professor, Department of Chemical Engineering and Department of Oils, Oleochemicals and Surfactants Technology

**Deputy Director, Infrastructure and Lab Development, ICT, Mumbai, Marathwada Campus, Jalna (on deputation)**

### SUBJECTS TAUGHT :

Advanced Membrane Separations, Nanotechnology, Advanced Momentum Transfer, CE Lab, Introduction to Chemical Engineering, Materials and Energy Balance Calculations, Chemical Engineering Thermodynamics I, Momentum Transfer

### RESEARCH INTERESTS :

My group works on membrane separation processes, on development of new polymeric and graphene-based materials for membranes, catalysts, and sensors applications. My research group also works on sustainability engineering in areas such as sustainable sanitation, development of new applications for industrial wastes, etc

**Recognized Research guide for** PPhD. (Tech) in Chemical Engineering, Oils, Oleochemicals and Surfactant Technology, Ph.D. (Sci) in Chemistry

Guided students: Ph.D. 04, Masters: 28

**Total Research Publications-** National: 01, International: 18

**Patents granted:** 03, H-Index: 11; Citations: 608

### National and International Awards:

DAE Young Scientist Award, 2013, Reinvent the Toilet Challenge 2013 (Bill and Melinda Gates Foundation), Chevening Rolls - Royce science, Innovation and Leadership Fellowship 2016, Newton-Bhabha Fellowship 2017





**Dr. GIRISH JOSHI**

B.Sc. (Physics), M.Sc. (Physics), Ph.D., B.Ed.

Associate Professor, Engg. Physics and Materials

**SUBJECTS TAUGHT :**

Engineering Physics, Material Science, Semiconductor Devices and Applications.

**RESEARCH INTERESTS :**

Polymer Nanocomposites- Battery Electrolyte Applications, Dielectric Properties, Graphene Oxide, Quantum dots, thermistor, capacitor Applications, Polymer Blends- Engg. Applications, thermal conductivity, Tribology, High performance composites, Metal Precursor- Electrical and optical properties

**Recognized Research guide for:** Ph.D. Plastics and Polymer (Technology), Ph.D. (Science) in Physics

**Guided students:** Ph.D. 06, Masters: 03

**Total Research Publications** - National: 02, international: 100+, Patents: 01, H-Index: 17; Citations: 887

**National and International Awards:**

National Best Teacher Award, 2017 (by Krishnmurty Trust, Tirupati), Maharashtra Academy of Sciences Fellow Award 2019, Associate Editor, MMSE Journal Ukraine.

**Mr. SHARAD LAHOTI**

B.Sc., M.B.A., L.L.B.

Associate Dean Industry

**SUBJECTS TAUGHT :**

Industrial Psychology, Financial Management and Project Finance.

**RESEARCH INTERESTS :**

Financial Management in Enterprises. Psychology, Financial Management and Project Finance. He has a working experience of more than 40 years in Private sector industries in Electronic, Plastics, Fertilizers, Agro Inputs etc. and in Banking sector. He has good experience in day today administration of industrial units, including all management functions, ISO and Ecocert Certifications, DSIR approval, Projects grants, Industrial promotion schemes of Government.





**Dr. MANOJ KUMAR JADHAO**

B.Sc. (Chem), M.Sc. (Anal. Chem),  
Ph.D. Physical Chem.,

**Assistant Professor of Advance  
Instrumentation**

**SUBJECTS TAUGHT :**

Chemistry-I, Chemistry-II, Spectroscopic and Chromatographic methods of Analysis.

**RESEARCH INTERESTS:**

Protein aggregation, Phytochemical Isolation.

Guided Students: Ph.D. 04 (Ongoing)

Total Research Publications :

International: 12, Book Chapter: 2

H-Index: 06; Citations: 101

**NATIONAL AND INTERNATIONAL AWARDS:**

National Postdoc Fellowship, 2017 (DST-SERB,  
Government of India)

**Dr. SANDEEP BHAI RAT**

B.Sc. (Maths), M.Sc. (Applied Maths),  
Ph.D. (Applied Maths)

**Assistant Professor of Engineering Mathematics and  
Computer Science.**

**SUBJECTS TAUGHT :**

Calculus, Differential Equations and Integral Transforms, Numerical Techniques, Scientific Computational Tools Lab- MATLAB, R Studio.

**RESEARCH INTERESTS:**

Qualitative Study of Fractional Differential Equations, Integral Inequalities, Mathematical Modelling and Numerical Simulations.

Guided Students: Ph.D. 01 (On going)

TOTAL RESEARCH PUBLICATIONS : National: 02,  
International: 08; H-Index: 06; Citations: 97





### DR. MANOJ B. GAWANDE

FRSC, docent (habil) M.Sc., Ph.D. (Chemistry)  
Associate Professor in Chemistry  
Ph.D. (Science), ICT Mumbai  
Docent (Habilitation), Palacky University, Olomouc  
Fellow of Royal Society of Chemistry, London (UK)  
Visiting Professor, Nanyang Technological University, Singapore

#### SUBJECTS TAUGHT :

Organic Chemistry, Physical Chemistry, General Chemistry,  
Green Chemistry, Nanomaterials, Heterogeneous Catalysis

#### RESEARCH INTERESTS:

Nanotechnology, Nanocatalysis, Sustainable Organic Transformations, Single Atom Catalysts, Environmental Remediation and Energy.  
Recognized Research Guide for Ph.D. (Sci) in Chemistry  
Guided students: 04 (ongoing); 3 (co-guided)  
Total Research Publications: International: 105, Patents: 03  
H-Index: 38, Citations: 7000 +  
Patents Granted: 01

#### NATIONAL AND INTERNATIONAL AWARDS:

Docent (habilitation)/ "Associate Professor" nominated by Palacky University; FRSC 2017: Fellow of Royal Society of Chemistry (FRSC), United Kingdom; Deans Award-2016 and 2017: By Dean of Palacky University, Olomouc; Mahatma Gandhi Pravasi Samman-2014: Ministry of Overseas Indian Affairs; Visiting Professor grant by FCT Lisbon, Portugal; BK-21 (Brain Korea) Research Fellowship Award South Korea; FCT Research Associate Fellowship; Associate Editor of Current Catalysis; Editorial Board Member of Nature- Scientific Reports; Guest Editor of Small and Advanced Materials Interfaces (Wiley Publication).

### Dr. NAGSEN P. MESHRAM

B.Sc. (Physics, Chemistry, Mathematics),  
M.Sc. (Physics),  
Ph.D. (Materials Science)

Assistant Professor of Applied Physics

#### SUBJECTS TAUGHT :

Applied Physics

#### RESEARCH INTERESTS:

Photo electrocatalysis, Photovoltaics, Nanomaterial Synthesis, Thin films, 2D-materials  
Total Research Publications:  
National:1, International: 10  
H-Index: 05; Citations: 104





**Dr. KAPIL IRWANTRAO SAGROLIKAR**

B.A. (English, History & Public Administration),  
M.A. (English),  
Ph.D. (English/Interdisciplinary)

**Assistant Professor of Communication Skills  
and Humanities (English)**

**SUBJECTS TAUGHT :**

Communication Skills, Technical Communication &  
Human Values

**RESEARCH INTERESTS:**

English Literature, Oral Narratives, Women Studies,  
Bhasha Literature, Cultural Studies

Total Research Publications:  
National: 04.

**NATIONAL AND INTERNATIONAL AWARDS:**

National: (Institutional Doctoral Research Fellowship offered by CWDS (Centre for Women's Development Studies) ICSSR, New Delhi (01 October 2015- 16 August 2018)

**Dr. SOMEN MONDAL**

B.Sc. (Chem.), M.Sc. (Phy. Chem.), Ph.D. (Chem)

**Assistant Professor of Physical Chemistry**

**SUBJECTS TAUGHT :**

Chemical kinetics, Electrochemistry, Catalysis, Surface and interfacial chemistry.

**RESEARCH INTERESTS:**

Ultrafast Spectroscopy, Photo-induced electron transfer and proton transfer dynamics, Conductive biopolymer for protonic and electronic transistor.

Total Research Publications:

National: 1, International: 20, Book Chapter: 1

H-Index: 09; Citations: 196

DATE OF JOINING: 23/12/19

**NATIONAL AND INTERNATIONAL AWARDS:**

2019: The Lady Davis fellowship, Technion IIT-Israel. (declined), 2018-2019: Planning and Budgeting committee (PBC) Fellowship program, Technion IIT-Israel. 2017-2018: Grand Technion Energy program (GTEP) Fellowship program, Technion IIT-Israel. 2017 (Feb-Nov): National postdoctoral fellowship (NPDF)-India. 2013 - 2017: Senior Research Fellowship (SRF), IISR Kolkata. 2011 - 2013: Junior Research Fellowship (JRF), IISR Kolkata. 2009 - 2011: West Bengal Govt. Merit-Cum-Means Scholarship Scheme (WBG M-C-M) for pursuing M.Sc. NIT Durgapur.





**Dr. DEBASHIS KUNDU**  
B.E. (Chemical Engineering), M.Tech. (Chemical Engineering),  
Ph.D. (Chemical Engineering)  
Assistant Professor of Chemical Engineering

**SUBJECTS TAUGHT :**

Thermodynamics-I, Chemical Engineering  
Thermodynamics-II

**RESEARCH INTERESTS:**

Molecular dynamics simulation; Phase Equilibria;  
Hydrogel; Hydrogen energy

GUIDED STUDENTS: Master: 5 (Ongoing)  
TOTAL RESEARCH PUBLICATIONS:

International: 15; H-Index: 05; Citations: 86

**NATIONAL AND INTERNATIONAL AWARDS:**

2012: Ambuja's Young Researcher's Awards for doing post graduate studies in India. 2018: Best Poster Award in Research Conclave'18, IIT Guwahati, India.

**Dr. SAURAV RAJ**

B.Sc Engg.(Electrical and Electronics Engineering)  
Ph.D. (Electrical Engineering)

Assistant Professor of Electrical engineering.

**SUBJECTS TAUGHT :**

Basic Electrical Engineering, Computer Application in Power System, FACTS, Electronics Instrumentation.

**RESEARCH INTERESTS:**

Power System optimization, FACTS Devices, Renewable Energy, Distributed Generation, Swarm and evolutionary optimization techniques.

Guided Students: UG-13, PG-00, Ph. D-00

Total Research Publications: National: 01, International: 11; H-Index: 04; Citations: 90



**NATIONAL AND INTERNATIONAL AWARDS:**

Best paper presentation awarded in 1st International Conference on Innovation in Electrical Power Engineering, Communication, and Computing Technology, Springer on 13th-14th December, 2019.



### Dr. JOYITA SARKAR

B.Sc. Microbiology (Hons.), M.Sc. Biotechnology,  
Ph.D. Biological Sciences & Bioengineering

**Assistant Professor**

#### SUBJECTS TAUGHT :

Biological Sciences & Engineering

#### RESEARCH INTERESTS:

Biomaterials: Effect of mechanical properties of scaffolds on differentiation of stem cells and reconditioning of cancer cells, Drug metabolism and Toxicity: Development of 3D in vitro cell culture system for high throughput metabolism and toxicity, Tissue Engineering and cancer nano-theranostics

Total Research Publications: International: 7, H-Index: 05;  
Citations: 83

#### NATIONAL AND INTERNATIONAL AWARDS:

Outstanding DST-AWSAR Award 2019 (PDF category).

### Dr. SUSHOBHAN GHOSH

B.Sc. (Chem.), M.Sc. (Chem.),  
Ph.D. (Supramolecular Chem.)

**UGC Assistant Professor**

#### SUBJECTS TAUGHT :

Modern methods of analysis including Light microscopy and electron microscopy, X ray diffraction; Supramolecular Chemistry including Self-assembly and supramolecular catalysis; Spectroscopic techniques including NMR spectroscopy, Mass spectroscopy and Infrared spectroscopy; Organic synthesis including C-C bond formation, reagents in organic synthesis, Retrosynthetic analysis, Organic Reduction reactions.

#### RESEARCH INTERESTS:

Transition metal complexes as potential anticancer agents (project under Royal Society Newton International Fellowship Alumni grant); Designing suitable host molecules as enzyme mimics for supramolecular catalysis (Project under UGC startup grant) Synthesis of Polycarbonates from the Greenhouse Gas CO<sub>2</sub> by Supramolecular Catalysts Designed via Co-ordination Driven Self-assembly (Project under DST SERB Early Career Research Award)

GUIDED STUDENTS: PhD: 1 (on going with joint supervision), Masters: 7

Total Research Publications: National: 1, International: 23; H Index: 13, Citations: 678

DATE OF JOINING: 05/05/2020

#### NATIONAL AND INTERNATIONAL AWARDS:

Alexander Von Humboldt international fellowship; Royal Society Newton Fellowship.





**Dr. RITIKA JOSHI**

B.Sc. (Chem.), M.Sc. (Chem), Ph.D. (Chem.).

**Assistant Professor (Temporary)**

**Subjects TAUGHT :**

Organic Chem (Lab & Theory); Physical Chem (Theory);  
Analytical Chem (Lab)

**RESEARCH INTERESTS:**

Fluorescence Spectroscopy, Cancer Theranostics,  
Photophysics, smFluorescence & Imaging, Biosensing  
Total Research Publications:

International: 16, Book Chapters: 2; H-Index: 07;  
Citations: 130

**NATIONAL AND INTERNATIONAL AWARDS:**

CSIR NET JRF-SRF fellowship, Bronze Medal &  
Certificate from the Royal Society of Chemistry, London.

**Dr. ATUL H. BARI**

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

**Assistant Professor (Temporary)**

**SUBJECTS TAUGHT :**

Mathematical Modelling and Simulation, Chemical  
Kinetics, Crystallization, Nanomaterial synthesis.

Total Research Publications:

International: 08; H-index: 4; Citations: 68

**NATIONAL AND INTERNATIONAL AWARDS:**

2019: DST-SERB National post-doctoral fellowship.



ADJUNCT PROFESSOR



**Dr. KISHORE M PAKNIKAR**

MSc, PhD

Ex. Director, Agharkar Research Institute, Pune

**SUBJECTS TAUGHT :**

Nanobiotechnology, Environmental biotechnology.

**RESEARCH INTERESTS:**

Applications of nanotechnology in biology, medicine, agriculture and environment

**Guided Students:** 39 PhD, 1 MD, 2 MSc

**Total Research Publications:** National: 10, International:

>140, Patents: 33 granted + 10 applied, H-Index: 41;

Citations: 8524

**NATIONAL AND INTERNATIONAL AWARDS:**

Biotech Research Society of India Industrial Medal Award-2007, Society for General Microbiology UK Third World Microbiology Fund award-1987, United Nations Environment Program (UNEP) scholarship-1982, Fellow, National Academy of Agricultural Sciences (FNAAS)-2010, Fellow, Association of Microbiologists of India (FAMI)-2007, Fellow, Biotech Research Society of India (FBRS)-2004, Fellow, Maharashtra Academy of Sciences (FMAS)-1996, Marico Industries Visiting Fellow, Institute of Chemical Technology, Mumbai- 2009.

**Dr. NANDKUMAR KUNCHGE**  
Director (Biotechnology)  
Kalash Seeds Pvt. Ltd.

**SUBJECTS TAUGHT :**

Bioengineering

**RESEARCH INTERESTS:**

Plant Biotechnology

GUIDED STUDENTS: Four B. Tech Semester Students & 2 Ph.D students (ICT)

Other: Twelve BCIL trainee students (Six months Industrial project)

Total Research Publications:

National: 02, International: 01



## VISITING FACULTY



**Mr. R. J. SHEREPATIL**  
*B.E. (Mechanical), M.E (Mechanical)*  
**Visiting Faculty**

### SUBJECTS TAUGHT :

Engineering mechanics, Strength of materials, Engineering and solid Mechanics, Automobile Engineering.

### RESEARCH INTERESTS:

Process optimization, Six sigma

**Mr. GUNWANT D. SHELAKHE**  
*B.E. (Production Engineering), ME (Manufacturing)*  
**Visiting Faculty**

### SUBJECTS TAUGHT :

Engineering Graphics, Elements of Mechanical Engineering, Machine Design I, Machine Design II.

### RESEARCH INTERESTS:

Modelling and analysis of surface grinding, LASER Micro drilling, Static Analysis of Steering Arm using FEA.

Total Research Publications:  
International: 06



VISITING FACULTY



**Dr. MRUDULA BELE**

Ph.D. (Pharmaceutical sciences), LL.B., LL.M.  
(Intellectual Property Law).

**Visiting Faculty**

**SUBJECTS TAUGHT :**

Intellectual Property Rights, Pharmaceutics

**RESEARCH INTERESTS:**

Solubility enhancement of poorly soluble drugs.

Guided Students: Masters: 26, PhD: 03

Total Research Publications:

National: 12, International: 08, Patents: 03

H-Index: 12, Citations: 870

**NATIONAL AND INTERNATIONAL AWARDS:**

State government's CD Deshmukh literature award for the book '*Katha Aklechya Kaydyachi*.' This is a book written on various aspects of Intellectual Property law for lay persons in Marathi.

**Mr. VIVEK V PHADKE**

DEE, AIS, BA, MPM, PGDHRM, DLL & LW, DCM, DSMM, MS  
(Psychotherapy and Career Counselling), MSc (Psychotherapy and Counselling)

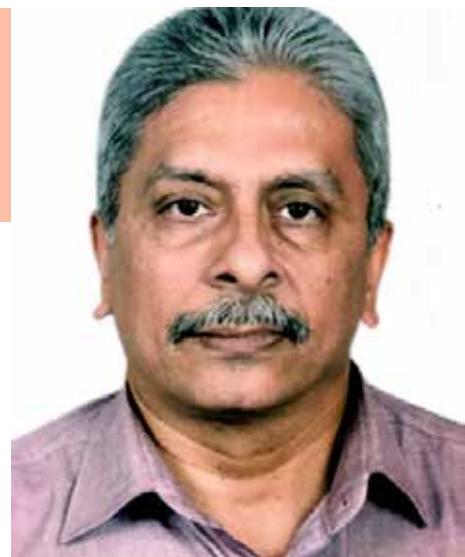
**Visiting Psychometrician**

**SUBJECTS TAUGHT:**

MS Excel General and Advance. MS Excel For Research. Communication and Personality Development

**RESEARCH INTERESTS:**

Data Analytics





**Ms. MALINI SHAH**

*PG (Counselling)*

**Visiting counselor**

Ms. Malini Shah is visiting counselor at ICT Mumbai Marathwada Campus Jalna on trimester basis. Counseling services are available for the benefit of all the students of the Institute - right from First year to those doing their doctorate. For new batches of students, she conducts orientation and workshop for them on building self-esteem and confidence, emotional intelligence, handling changes, time management, Study Techniques and Adaptability. Telecounseling and counseling through emails for various student concerns is taken.

**Dr. HITENDRA PATIL**

*B.Sc. (Comp. Sci.), M.L.I.Sc.  
Ph.D. Library and Information Science*

**Librarian**

**RESEARCH INTERESTS:**

Information Seeking Habits, Citation Analysis,  
Authorship Pattern.

Total Research Publications:  
National: 4, International: 11,



## 7.1 COURSES OFFERED AND CRITERIA OF ELIGIBILITY FOR ADMISSION

### 7.1.1 COURSES OFFERED

#### INTEGRATED MASTERS COURSES

| Sr. | Course             | Major                | Minor   | Intake |
|-----|--------------------|----------------------|---|--------|
| 1.  | Integrated M.Tech. | Chemical Engineering | Energy Engineering<br>Food Engineering and Technology<br>Lipid Engineering<br>Petrochemical Engineering<br>Pharmaceutical Technology<br>Polymer and Materials Engineering | 60     |

\* 5 years after 12th Std. or equivalent

#### DOCTORAL COURSES OFFERED

Table 2 : Different Specializations of Doctoral Degrees

| Sr. No. | Degree        | Specialization                           |
|---------|---------------|--|
| 1.      | Ph.D. (Tech.) | Agrochemical Engineering                 |
| 2.      |               | Bioprocess Technology                    |
| 3.      |               | Chemical Engineering                     |
| 4.      |               | Dyestuff Technology                      |
| 5.      |               | Energy Engineering                       |
| 6.      |               | Fibres and Textile Processing Technology |
| 7.      |               | Food Biotechnology                       |
| 8.      |               | Food Engineering and Technology          |
| 9.      |               | Green Technology                         |
| 10.     |               | Lipid Engineering                        |
| 11.     |               | Perfumery and Flavour Technology         |
| 12.     |               | Petrochemical Engineering                |
| 13.     |               | Pharmaceutical Technology                |
| 14.     |               | Plastics Engineering                     |
| 15.     |               | Polymer and Materials Engineering        |
| 16.     |               | Surface Coating Technology               |
| 17.     |               | Civil Engineering                        |
| 18.     |               | Electrical Engineering                   |
| 19.     |               | Electronics Engineering                  |
| 20.     |               | Mechanical Engineering                   |
| 21.     | Ph. D (Sci.)  | Biochemistry                             |
| 22.     |               | Biotechnology                            |
| 23.     |               | Chemistry                                |
| 24.     |               | Food Science                             |
| 25.     |               | Mathematics                              |
| 26.     |               | Physics                                  |
| 27.     |               | Textile Chemistry                        |

All Ph.D. programs have course work as per UGC regulations.

## 7.1.2 ADMISSION PROCEDURE

### ADMISSION TO FIRST YEAR OF INTEGRATED M.Tech PROGRAM IN FOLLOWING COURSES

#### Application Procedure

All admissions will be conducted by the Institute of Chemical Technology, Mumbai Campus

For online admission form visit <http://www.ictmumbai.edu.in>

#### Admission Quota For All Integrated M. Tech. Courses Are As Follows.

Please note that a separate online application on ICT website is necessary for admission.

Admission rounds will be carried out by ICT, Mumbai.

The availability of seats (60) for these courses shall be as:

- A) 70% for state of Maharashtra (through MHT CET - 2020) and
- B) 30% for all India (all states and union territories including Maharashtra) through JEE main paper 1 - 2020

#### Integrated Master Courses of Studies and Intake Capacity

All integrated courses are passed hsc or its equivalent examination with physics, chemistry and mathematics as compulsory subjects and obtained at least 50% marks in aggregate (at least 45% marks, in case of backward class categories and persons with disability candidates belonging to Maharashtra state only).

#### Integrated Master of Technology (M. Tech.) in :

| Sr. | Specialization               | Minor                             | Intake |
|-----|------------------------------|-----------------------------------|--------|
| 1.  | Chemical Engineering (Major) | Polymer and Materials Engineering | 10     |
| 2.  |                              | Food Engineering and Technology   | 10     |
| 3.  |                              | Pharmaceutical Technology         | 10     |
| 4.  |                              | Lipid Engineering                 | 10     |
| 5.  |                              | Energy Engineering                | 10     |
| 6.  |                              | Petrochemical Engineering         | 10     |

#### Reservations:

All the reservations given below shall be applicable to candidates belonging to Maharashtra state only subject to the fulfilment of the eligibility criteria specified by respective authorities from time to time.

Reservation for backward class category candidates: the percentage of seats reserved for candidates of backward class categories belonging to Maharashtra state is as given below. The percentage of reservation is the percentages of the seats available for Maharashtra candidates. Backward class candidates shall claim the category to which they belong to at the time of submission of application form.

| Sr. | Category of Reservation                                       | Percentage of Seats Reserved |
|-----|---|------------------------------|
| 1.  | Scheduled Castes and Schedule Caste converts to Buddhism (SC) | 13.0%                        |
| 2.  | Schedule Tribes (ST)  | 7.0%                         |
| 3.  | Other Backward Classes (OBC)                                  | 19.0%                        |

#### MH-CET Based Seats :

| Available Seats | Intake | Open | SEBC (12%) | OBC (19%) | SC (13%) | ST (7%) | VJ/DT-NT-A (3%) | NT-B (2.5%) | NT-C (3.5%) | NT-D (2%) |
|-----------------|--------|------|------------|-----------|----------|---------|-----------------|-------------|-------------|-----------|
|                 | 17     | 5    | 8          | 5         | 3        | 1       | 1               | 1           | 1           | 1         |
|                 | Total  | G L  | G L        | G L       | G L      | G L     | G L             | G-3 / L-1   |             |           |
|                 | 42     | 12 5 | 3 2        | 6 2       | 3 2      | 2 1     |                 | 4           |             |           |

#### JEE Based Seats :

| Available Seats | Intake | Available seats |
|-----------------|--------|-----------------|
|                 | 18     | 18              |

**Course structure**

Integrated M. Tech (Passed HSC or its equivalent examination with 15 trimesters and alternate trimester in industry leading to two years of experience).

The alternate industry and class room teaching module is given below

| Trimester | Classroom Learning | Industry training | Comments                          |
|-----------|--------------------|-------------------|-----------------------------------|
| 1         | Batch A + Batch B  |                   | Both together to learn basics     |
| 2         | Batch B            | Batch A           |                                   |
| 3         | Batch A            | Batch B           |                                   |
| 4         | Batch B            | Batch A           |                                   |
| 5         | Batch A            | Batch B           |                                   |
| 6         | Batch B            | Batch A           |                                   |
| 7         | Batch A            | Batch B           |                                   |
| 8         | Batch B            | Batch A           |                                   |
| 9         | Batch A            | Batch B           |                                   |
| 10        | Batch B            | Batch A           |                                   |
| 11        | Batch A            | Batch B           |                                   |
| 12        | Batch B            | Batch A           |                                   |
| 13        | Batch A            | Batch B           |                                   |
| 14        | Batch A + Batch B  |                   | 8-month industrial design project |
| 15        | Batch A + Batch B  |                   | Both together to graduate         |

**Fees, Concessions, Cancellations And Refund:****Course Fees Prescribed:**

The candidates to be admitted during 2020-21 are required to pay fees as prescribed by the state government. The institutional fees to be paid by all the admitted candidates are as follows:

| Sr. | Type of Fees    | Open And All Reserve Category<br>Students Fee For 1 <sup>st</sup> Year (₹) |
|-----|-----------------|--|
| 1.  | Library Deposit | Rs. 2,000/-  |
| 2.  | Fees            | Rs. 90,000/-   |
|     | Total           | Rs. 92,000/-   |

\*Note: contingency amount for M. Tech. students admitted under various fellowships will be as per the norms of respective sponsoring funding agencies. Research contingency of Rs. 12,000/- will be added in the fifth year of fees.

**Eligibility Criteria For The Admission To Executive Masters M. Tech**

- The candidate should have passed bachelor's degree in any branch of engineering or technology or masters degree in any branch of science.
- These courses are meant only for industry sponsored candidates. Candidates must possess eight years of relevant industrial experience.
- In addition, for such candidates, the following shall be applicable:
- The candidate should be a full time industrial/ R&D employee with at least eight years experience in a chemical or allied industry.
- The industry should undertake the responsibility of releasing the candidate for course work (theory classes), experimental work (laboratory work) or discussions with the concerned research guide from time to time. A proper timetable should be prepared by the concerned teacher and his supervisor, which will be approved by the head of department/ centre director. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- The candidates willing to take admission to these courses will have option to attend the lectures/ practicals over a total span of two years and clear the examinations.

- Candidates can work in the ICT laboratories during holidays (with a prior permission to work on holiday/ late working) and also after their office hours. They must indicate on which date they wish to avail the research facilities at ICT. A proper log book must be maintained by the candidate duly signed by his/ her supervisor which will be authenticated by the head of department/ centre director.
- Part of the experimental work could be allowed to be done in their premises (concerned industry/ institute) for which their management will provide them with necessary facilities.

### Fees, Concessions, Cancellations And Refund:

#### Course Fees Prescribed:

The Institutional fees to be paid by all the admitted candidates are as follows:

| Sr. | Type of fees    | Nonrefundable Fee For Entire Course (₹) |
|-----|-----------------|---|
| 1.  | Library deposit | 5,000/-                                 |
| 2.  | Fees            | 5,05,000/-                              |
|     | Total           | 5,10,000/-*                             |

\* The total fee to be paid at the time of admission.

\* One time nonrefundable in case of admission cancelled.

## DOCTOR OF PHILOSOPHY (Ph.D.) PROGRAMMES

#### Application Procedure

There is single application for all three campuses. All rules are same for the three campuses. Please see relevant section under Mumbai Campus.

For online admission form visit <http://www.ictmumbai.edu.in>

#### Intake capacity:

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

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

First rank holders in Master's degree in engineering/ technology/ pharmacy/ science of any UGC/ AICTE recognized Indian university or institute/ statutory body in India can apply for award of inspire fellowship, a scheme of the government of India to avail research grants for a period of five years for doing research leading to Ph.D. Degree. Application format and necessary documents for application are available on the website <http://www.inspire-dstgov.in>. Eligible candidates should apply directly to DST and after getting provisional acceptance, they may be considered for admission at ICT, subject to fulfillment of other criteria.

#### Eligibility Criteria For Admission to Ph.D. (Tech.)/ Ph.D. (Sci.)

- For Ph.D. (Tech.) Course at Sr. No. 1, 3, 5 & 12 in Table 2, the candidate must have passed the Master's degree examination in the Agrochemical Engineering/ Chemical Engineering/ Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT/ [(M.E. in Petrochemical Engineering/ Environmental Engineering) (Provided Bachelor Degree in Chemical Engineering)] or any other UGC recognized university as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).
- For Ph.D (Tech.) Course at Sr. No. 2 in Table 2 must have passed Master's degree examination in the Chemical Engineering/ Bioprocess Technology/ Chemical Technology (any branch at ICT)/ Pharmacy/ M. Tech. Biotechnology/ Biochemical Engineering/ or any other UGC recognized university as equivalent there to with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).
- For Ph.D. (Tech.) Courses at Sr. No. 4, 6, 9, 10, 11 , 13, 14, 15 & 16 in Table 2, the candidate must have passed the Master's degree examination in the Chemical Engineering / Chemical Technology (any branch at ICT)/ Pharmacy/ Plastic Engineering of ICT or any other UGC recognized university as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category ).

- For Ph.D. (Tech.) Courses at Sr. No. 17-20 in Table 2, the candidate must have passed the Master's degree examination in Mechanical / Production / Industrial / Thermal / Machine Design / Machine Tools / Automobile / Material Science / Electrical / Power Systems / Control Systems / Instrumentation / Civil / Structural / Environmental / Civil And Water Management / Transportation Engineering, Construction / Construction Management / Geotechnical / Water Resources from any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPS (55% marks or equivalent cgpa in case of reserved category).
- For Ph.D (Tech.) course at Sr. No. 7 in Table 2 must have passed the Master's degree in Food Engineering and Technology / Food Technology/ Biotechnology/ Food Biotechnology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category).
- For Ph.D (Tech.) Course at Sr. No. 8 in Table 3.4.1 must have passed the Master's degree in Food Engineering / Food Technology/ Food and Biochemical Engineering/ Chemical Technology (any branch at ICT)/ Chemical Engineering of any UGC recognized university as equivalent thereto with 60% marks or equivalent CGPA (55% marks or equivalent CGPA in case of reserved category)
- For Ph. D. (Sci.) Courses at Sr. No. 21 And 22 in Table 2, the candidate must have passed the Master's degree examination in any biological faculty of science of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category)
- For Ph.D. (Sci.) Courses at Sr. No. 23, 25 And 26 in table 2, the candidate must have passed the Master's degree examination in the respective subject of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).
- For Ph.D. (Sci.) Course at sr. No. 24 In table 2, in Food Science the candidate must have passed the M.Sc. examination in food Science, Food Processing, Nutrition, Home Science, Post Harvest Technology, Horticulture, Dairy Science, Biochemistry, Microbiology, Organic Chemistry of any UGC recognized university as equivalent thereto with 60% marks or equivalent cgpa (55% marks or equivalent CGPA in case of reserved category).
- For Ph.D. (Sci.) Course at Sr. No. 27 In table 2, in Textile Chemistry, the candidate must have passed the M.Sc. Examination in Textile Chemistry/ Textile Clothing/ Life Sciences/ Biochemistry/ Microbiology/ Chemistry of ICT or of any university recognized by UGC with minimum of 55% marks or equivalent CGPA (50% marks or equivalent CGPA in case of reserved category).
- Further, candidates from any of these streams must clear the written test of the institute which are based on the syllabus.
- The candidates who have passed the Master's degree by research of any university recognized by UGC may be considered for admission only if they hold fellowship from any recognized funding agency.
- The candidates qualified in NET/ GATE/ GPAT/ CSIR/ DBT/ - JRF examinations or other equivalent examinations and holding valid fellowship will be preferred.

**Apart from regular full time on- campus candidates, following candidates are also eligible for admission to Ph.D. (Tech.)/ Ph.D. (Sci.):**

- (I) Permanent full time teachers of college/ institute
- (II) Employees of National Laboratories/ Government Institutions
- (III) Employees of Industry

However, persons qualified in NET/ CSIR/ DBT-JRF and holding valid fellowship obtained from Government funding agencies such as DST, ICMR, UGC, CSIR, etc. are exempted from the entrance written test. Admissions to such candidates are open throughout the academic year.

**Eligibility criteria for teachers for admission to Ph.D. (Tech.) / Ph.D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. Above.

- A) The candidate should be a permanent teacher having full time teaching experience of at least two years in degree college or five years in Junior College/ Diploma College / Polytechnics (affiliated to statutory bodies).
- B) Teachers who have been in the service of any engineering and technology college approved by the UGC/AICTE are entitled for registration for Ph. D. (Tech.) with the faculty of the ICT.
- C) Teachers who have been in the service of any science college approved by the UGC are entitled for

registration for Ph.D. (Sci.) With the faculty of the ICT.

- D) The college management should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned teacher and his supervisor, which will be approved by the head of department/ centre co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- E) Teachers can work in the ICT laboratories during vacations and holidays and after their office hours if they come from colleges in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the head of department/ centre co-ordinator.
- F) A maximum period of 5 years extendable by 1 year will be allowed in case of teachers who carry out research part time but put in at least 3 months full time work in a year in the ICT labs. In such cases, part of the experimental work could be allowed to be done in their premises for which their management will provide them with necessary facilities. The characterization and other sophisticated analysis must be done in ICT. Exclusive theoretical work should be discouraged as much as possible to give the teachers a hands-on experience and to bring them into an environment of research. However, this will be left to the individual supervisor's discretion, who should take abundant precaution to avoid unethical practices.
- G) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- H) Teachers registering themselves as Ph.D. student of ICT should not register any masters students with themselves in his/her own college to avoid research by proxy. The candidate as well as his/her supervisor must give an undertaking, with a counter signature of the concerned principal to this effect to avoid degeneration of this novel concept into a Ph.D. By unscrupulous means.
- I) If the teacher intends to join the ICT on leave without pay for a period of three years, then the candidate may be eligible for the UGC fellowship under our SAP programme, provided he/ she successfully clears the institutional entrance tests.
- J) All regular admissions criteria are applicable to these candidates and they must also do the course work required for Ph.D. Programme.

### **Eligibility Criteria for Candidates Working in National Laboratories/ Government Institutions for Admission to Ph. D. (Tech.) / Ph. D. (Sci.)**

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. Above.

- A) The candidate should be a permanent employee working in National Laboratories/ Government Institutions having minimum 2 years of service.
- B) The management of the organisation should undertake the responsibility of releasing the candidate for course work, experimental work or discussions with the concerned research guide from time to time. A proper time table should be prepared by the concerned candidate and his supervisor, which will be approved by the head of department/ centre co-ordinator. A bond in this regard should be signed and approved by the Vice Chancellor, ICT.
- C) Such candidates can work in the ICT laboratories during holidays and after their office hours if they come from organisation in the city or nearby. They must indicate on which date they will avail of the research facilities in ICT. A proper log book must be maintained by the candidate duly signed by his supervisor which will be authenticated by the Head of Department/ Centre Co-Ordinator.
- D) The registered candidates will be required to publish or patent some part of their work within two years of the registration otherwise this registration will not be continued. The publication must be done in peer reviewed international journals. Multi-authored papers without much input from the teacher should be avoided. Conference proceedings which are not peer reviewed will not be considered as publications.
- E) All regular admissions criteria are applicable to these candidates and they must also do the course work required for doctoral programme.

### Admission for Industry-Sponsored In-house Candidates to Ph.D. (Tech.) / Ph.D. (Sci.)

Following are the requirements in addition to the criteria mentioned under heading 3.3.3.1. Above.

1. The candidate should have minimum 2 years of industrial experience.
2. Industry should have a well-equipped research & development and quality control laboratory with at least one Ph.D. Employee working in the set up in the relevant area.
3. Industry is required to get recognition from ICT by the following procedure:
  - i. After receiving request from an industry, a committee appointed by the Vice Chancellor, ICT will make a visit to the industry laboratory. The ICT appointed committee will consist of Dean (RCRM) as Chairman with a Professor nominated by the Vice Chancellor and the Head of the Department in the area of proposed research.
  - ii. The committee will evaluate the activities and the competence of the R&D of industry following the guidelines of similar to those proposed by DSIR. All the expenses in connection with the visit will be borne by the industry concerned. The ICT committee will make recommendations to the Vice Chancellor, ICT for approval. The industry R&D will be recognized by the approval of the Vice Chancellor, ICT. In case the laboratory is already recognized by DSIR, the visit by ICT committee will not be necessary.
  - iii. Once the R&D laboratory is recognized by the ICT, the industry is required to pay Rs. 5 Lakhs for first four years (typical duration of Ph.D. Work) and necessary contingency amount of Rs. 50,000/- per candidate per year (in the name of ICT, to be utilised by the research guide) for the conduct of the research activity. After four years, the renewal of the recognition will continue by payment of Rs. 1 Lakh per year. Further, the industry should try to get recognition for their R&D set up from DSIR, based on the recommendation of the ICT appointed committee.
4. During a year, an industry may nominate up to two employees (with required qualification) for registering for the doctoral degree at ICT under the supervision of ICT faculty.
5. The candidate is required to pay all the Ph.D. Fees (over and above laboratory eligibility fees) as proposed by the ICT at appropriate time and will not be eligible for any fellowship. Also, the other requirements, like eligibility criteria, qualifying institutional tests, completion of course work, etc. Need to be fulfilled by the industry candidate.

### Fees, Concessions, Cancellations and Refund:

**Fees prescribed:** The candidates admitted 2020-21 are required to pay fees as prescribed by the state government. The institutional fees to be paid by all the admitted candidates are as follows: Ph.D. (Tech.)/ Ph.D. (Sci.)

| Sr.          | Type of fees       | Open and All Reserve Category Students Fee for 1 <sup>st</sup> Year (₹) |
|--------------|--------------------|---|
| 1.           | Tuition fees       | 15,000/-  |
| 2.           | Development fees   | 25,000/-  |
| 3.           | Other fees         | 20,000/-  |
| 4.           | Alumni association | 1250/-  |
| <b>Total</b> |                    | <b>61,250/-*</b>  |

\* Note: contingency amount for Ph.D. Students admitted under various fellowships will be as per the norms of respective sponsoring funding agencies, other candidates have to pay Rs. 20,000/- For use as contingency in addition to the above fees.

### Examination Pattern

Please refer ICT, Mumbai campus for examination pattern

### Academic Calender 2020-2021

The following shall be the academic calendar\*:

**(A) INTEGRATED MASTERS COURSES**

Trimester 1: September 01, 2020 to December 31, 2020

Trimester 2: January 01, 2021 to April 30, 2021

Trimester 3: May 01, 2021 to August 30, 2021

**(B) DOCTORAL COURSES**

Academic Year: July 01, 2020 to June 30, 2021

\* Note: the above-mentioned dates are tentative and likely to change based on admission round. The int. M. Tech, and executive masters programs are based on trimester pattern. Each trimester is of four-month duration.

## 7.2 ICT-MARJ CENTRAL LIBRARY

### Introduction

The central library was established in the year 2018. It is a special library. The library caters to the educational and research needs of the academic community of the institute. It provides supports to both academic and research work. At present the central library is functioning on the first floor of the academic building. The library provides open-access system to its user community. It has a good number of collections in basic science, specialized collection in chemical engineering, chemical sciences, and chemical technology, material physics, and industrial chemistry etc. It is also having a number of reference books and journals. The library has access to a number of e-resources. The library is fully automated with the help of koha software. Users can login freely, web-opac which is currently on the intranet gives detailed information about library books. Users can find out the real-time availability of library materials from their own computer terminals. The library also has a separate collection of reference book.

### Library Timings

Monday to Saturday from 9.00 am to 6.30 pm (on working days)

The library remains closed on Sundays and holidays.

### Library layout

The library is located on the first floor of the academic building of the institute and is centrally accessible.

### Membership

The bonafide students and faculty of the institute have book lending facility. Book borrowing facility can be availed against ID card.

### Library collection: Printed Resources

- **Books**

The library has substantial number of latest Indian as well as international edition printed books in its collection. The books are in the area of Physics, Chemistry, Mathematics, Applied Chemistry, Chemical Technology, Chemical Engineering, Industrial Chemistry, Material Physics, Environmental Science, Food Technology, Polymer Science, Textile Technology etc.

- **Printed Journals**

The library subscribes to a number of national and international scholarly journals from renowned publishers like Elsevier, STM, Advanced Research Group and others.

- **Digital Resources**

Library has a collection of e-resources like e-databases & e-journals, accessible through remotexs software from their parent institute i.e. Prof. M.M. Sharma library, ICT Mumbai Campus. All digital library resources available at the ICT, Mumbai are available in ICT, MARJ. The digital resources include e-journals from renowned publishers like Elsevier, Royal Society of Chemistry, Wiley etc. And e-databases like Scopus, Web of Science, Reaxys, etc.

- **Library Services**

The library provides services to its user community like,

- Circulation
- CAS (current awareness service)
- SDI (selective dissemination service)
- Reprography service
- Scanning service
- New books arrival
- OPAC (open public access catalogue)
- Reference service
- Reading room
- Digital library
- Suggestion & feedback

### Contact:

Dr. Hitendra J. Patil, Librarian,

Email : [hj.patil@marj.ictmumbai.edu.in](mailto:hj.patil@marj.ictmumbai.edu.in) / [librarian@staffmarj.ictmumbai.edu.in](mailto:librarian@staffmarj.ictmumbai.edu.in)

## 7.3 HOSTELS



### Preamble

ICT, marathwada, has rented residential flats which are currently used as hostel for all students of integrated M.Tech course. This facility will be continued to be used as first year boys hostel. In the same premises in separate wing girls hostel arrangement is made. At present these hostels accommodate 46 boys and 21 girl students. Guest house facility and wardens residence is also located in the same building. Note that the number of seats in the hostel may change based on the social distancing and other regulation from the government. Wardens manage all the affairs of the hostel and are assisted by hostel office staff. Laundry facilities and housekeeping is arranged for.

### Process of Allocation of Hostels

1. Hostel no. 1 is allotted to girls from all years of M.Tech integrated course. Girls from other courses will be accommodated subject to vacancy. Hostel No. 2 is for boys mainly from the first year M.Tech integrated course. All the hostels are unaided and maintained by the Institute.
2. Bus conveyance is arranged from hostel No. 1 & 2 (Bus for all students) to reach ICT, MARJ, campus which is about 3.5 kms away.
3. Hostel No. 3 is under construction and located in the vicinity of ICT, MARJ Campus. Accommodation in this hostel will be provided to senior boys students.
4. Only bonafide full time students of ICT, MARJ are entitled for hostel admission.
5. Admission will be offered on merit basis. Preference will always be given to out-station students who come from places beyond the limits of Jalna. As a proof of stay beyond the limits of Jalna, they are required to upload scan copies of ration card/ aadhar card and school-leaving certificate. Any false representation in this regard will be strictly dealt with.
6. Student who have taken admission to ICT can register on-line through ICT log in portal ([www.ictmumbai.co.in](http://www.ictmumbai.co.in)). Students need to upload a residence proof, a medical certificate from your family doctor (with clearly mention about chronic health problem or allergy if any). Hostel authority will approve the form and will give call for admission depending upon the availability of seats.
7. Students must confirm the hostel admission by paying the required fee ICT, MARJ hostel account.
8. The warden of the respective hostel has all the rights to change/transfer a student from one room to other within the hostel for convenience of the administration. Also, every year the student may be shifted from the accommodation provided in earlier year.
9. In case of the year-drop, the candidate will have no claim for hostel accommodation and will have to vacate the hostel. Readmission for such student on clearing the year-drop will not be guaranteed.

**Hostel Fees:****Accommodation fees:**

| <b>Hostel</b> | <b>Category</b> | <b>Type of Accommodation</b> | <b>Hostel Capacity</b> | <b>Annual Fees, Rs. <sup>++</sup></b> |
|---------------|-----------------|------------------------------|------------------------|---------------------------------------|
| Hostel no. 1  | Girls           | Double Seated & More         | 21*                    | 30,000                                |
| Hostel no. 2  | Boys            | Double Seated & More         | 46**                   | 30,000                                |
| Hostel no. 3  | Boys            | Multi-Seated                 | 40***                  | 30,000                                |

Note: If social distancing norms imposed by the govt are applicable-number of seats may get reduced.

Accommodation fees should be paid online following the procedure detailed on [www.ictmumbai.co.in](http://www.ictmumbai.co.in)

\* Flexible, can be increased if needed, for all girl students.

\*\* Flexible, can be increased if needed, all first year Int. M.Tech. boys students who are from outside Jalna will be accommodated.

\*\*\* For senior students (boys).

++ M.Tech integrated course structure is different, there are no long vacations, there are 4 months ipt trainings every other trimester and flat annual fees will be charged for all students.

**Hostel Messes**

It is desirable for all hostel students to join the respective hostel mess. Typical mess charge includes breakfast and two meals a day. All the mess members are required to pay to ICT, MARJ Hostel account Rs. 18,000/ Trimester towards advance mess charges. Mess deposit of Rs. 5,000/- is required to be paid at the time of joining of mess which will be refunded (part) only if annual mess expenditure is less than Rs. 25,000.

**Hostel Management****Wardens at ICT hostels**

| <b>Hostel No.</b>    | <b>Warden</b>   |
|----------------------|---|
| 1                    | <b>Dr. P. R. Nemade (Head Warden)</b><br>Deputy Director, Infrastructure and Lab Development<br>email: <a href="mailto:pr.nemade@ictmumbai.edu.in">pr.nemade@ictmumbai.edu.in</a> |
| 2                    | <b>Dr. Kapil Sagrolkar</b><br>Warden to hostel no. 2 (Boys Hostel)  |
| 3                    | <b>Dr. Ritika Joshi</b><br>Warden hostel no. 1  |
| <b>Hostel office</b> | <b>Mr. Rahul Vyas:</b> in-charge, hostel maintenance<br><b>Mr. Sainath Alsatwar:</b> mess related matters   |

**General**

1. Limited guest house facility is available at Hostel No. 1 & 2 only for parents who wish to meet their wards studying at ICT on payment basis.
2. Hostels are equipped with mess, T.V. room and essentials.
3. All students are covered under accident policy of the Institute.

**Discipline and Decorum**

1. Smoking and consumption of alcohol is strictly prohibited in hostels and public places in the entire campus of ICT. A strict disciplinary action will be taken against the student involved in misdemeanor and illegal activities.
2. All the students have to report in their respective hostel premises by 8:00 pm and should be in their respective rooms by 10:00 pm.
3. **Action against ragging:** Maharashtra Prohibition of Ragging Act 1999 is in effect from 15<sup>th</sup> May 1999. (See details later from UGC in this regard). Any case of ragging should be reported by the victim in writing within three days of the incident to the respective Warden with copies marked to:  
Associate Dean ([assodean.ind@marj.ictmumbai.edu.in](mailto:assodean.ind@marj.ictmumbai.edu.in)) and  
Director ([director@marj.ictmumbai.edu.in](mailto:director@marj.ictmumbai.edu.in)).

**Anti-Ragging Committee (ICT Marathwada Campus):**

|                      |                       |
|----------------------|-----------------------|
| Head Warden          | Dr. Parag R. Nemade   |
| Ladies Hostel Warden | Dr. Ritika Joshi      |
| Professor            | Dr. Manojkumar Jadhao |
| Associate Dean       | Shri. Sharad Lahoti   |
| Data Executive       | Shri. Ajay Patil      |

**Anti-Ragging Squad Members (ICT Marathwada Campus):**

|                      |                     |
|----------------------|---------------------|
| Associate Dean       | Shri. Sharad Lahoti |
| Professor            | Dr. Girish M. Joshi |
| Ladies Hostel Warden | Dr. Ritika Joshi    |
| Data Executive       | Shri. Sandip Pawar  |
| Associate Dean       | Shri. Sharad Lahoti |

4. Detailed rules and regulations will be provided during admission.

**7.4 INDUSTRIAL PLACEMENTS****ICT-Marathawada, Jalna Campus**

A group of 60 students from ICT-Marathawada, Jalna campus were placed for 4-month industrial trainings in different companies. The companies are as follows:

| SN | Name of Industrial Unit IPT        | Address                          |
|----|------------------------------------|----------------------------------|
| 1  | Abhay Proteins Pvt Ltd             | Jalna                            |
| 2  | Ajanta Pharma Ltd                  | Waluj, Aurangabad                |
| 3  | Apollo Plastic Industries          | Phase I Addl. Midc, Jalna        |
| 4  | Approcopp Engineering Pvt Ltd      | Phase II Addl. Midc, Jalna       |
| 5  | AU Valves Pvt Ltd                  | Chennai, Tamilnadu               |
| 6  | Bengal Surgicals Ltd               | Kalyani, Kolkata                 |
| 7  | Bhakti Solvent Extractions Pvt Ltd | Phase II Addl. MIDC, Jalna       |
| 8  | Century Rayon Ltd                  | Kalyan, Maharashtra              |
| 9  | Concept Pharmaceuticals Pvt Ltd    | Chikalthana, Aurangabad          |
| 10 | Divya Srij Foods LLP               | Mantha Road, Jalna               |
| 11 | Envirocare Lab Pvt Ltd             | Thane, Maharashtra               |
| 12 | Exotic Fruits Pvt Ltd              | Krishnagiri, Tamilnadu           |
| 13 | Garware Polyesters Ltd             | Waluj, Aurangabad                |
| 14 | Gauri Agro Tech Industries Pvt Ltd | Gundewadi, Bhokardan Road, Jalna |
| 15 | Glenmark Pharmaceuticals Ltd       | Ambad, Nasik                     |
| 16 | Godrej Industries Ltd              | Valiya, Gujarat                  |
| 17 | Haffkine Bio-Pharmaceuticals Ltd   | Mumbai                           |
| 18 | HPCL Ltd                           | Chembur, Mumbai                  |
| 19 | Kalash Seeds Pvt Ltd               | Jalna                            |
| 20 | Mahalaxmi Cotspin Ltd              | Samangaon, Ambad Road, Jalna     |
| 21 | Mehta Pharmaceuticals Pvt Ltd      | Mumbai                           |
| 22 | Metarolls Steels Group             | Phase II Addl Midc, Jalna        |
| 23 | Metalman Industries Pvt Ltd        | Waluj, Aurangabad.               |
| 24 | Monk Foods                         | Indore                           |

|    |                               |                                   |
|----|-------------------------------|-----------------------------------|
| 25 | Mylan Pharmaceuticals Ltd     | Waluj, Aurangabad                 |
| 26 | Polaad Steels Group           | Phase II Addl Midc, Jalna         |
| 27 | Rajuri Steels Group           | Phase II Addl Midc, Jalna         |
| 28 | RCF Ltd                       | Chembur, Mumbai                   |
| 29 | Roopam Steels Group           | Phase II Addl Midc, Jalna         |
| 30 | Sanjay Techno Pvt Ltd         | Waluj, Aurangabad                 |
| 31 | Sasmira                       | Worli, Mumbai                     |
| 32 | Shree Tubes Pvt Ltd           | Waluj, Aurangabad                 |
| 33 | Smoothline Cable Industries   | Phase II Addl Midc, Jalna         |
| 34 | SSD Refineries Pvt Ltd        | Daregaon, Jalna                   |
| 35 | Tanmay Plastic Films          | Devmurti, Sindkhed Road, Jalna    |
| 36 | Tata Motors Ltd               | Dharwad, Karnataka                |
| 37 | Thakurji Solvex Pvt Ltd       | Jalna                             |
| 38 | Vibfast Pigments & Dyes P Ltd | Ahmedabad, Gujarat                |
| 39 | Vinodrai Engineering Pvt Ltd  | Dawalwadi, Aurangabad Road, Jalna |
| 40 | Wockhardt Pharmaceuticals Ltd | Shendra, Aurangabad               |



## Glimpses of Student Activities





Former Director  
Padmabhushan  
Prof. J. B. Joshi  
being felicitated by  
Padma Vibhushan  
Prof. R. R.  
Mashelkar



Staff members  
of ICT  
Marathwada  
Jalna Campus  
with the former  
Vice Chancellor  
of ICT Prof G D  
Yadav (5<sup>th</sup> from  
left)



Vice Chancellor  
Prof. A. B. Pandit  
being felicitated by  
Shri Lahoti



# ANTI-RAGGING LAWS AND NOTIFICATIONS OF UGC



# REGULATIONS ON CURBING THE MENACE OF RAGGING IN HIGHER EDUCATION INSTITUTIONS, 2009

NO. F 1-16/2007 (CPP-II)

*April, 2009*

In exercise of the powers conferred by Clause (g) of Sub-Section (1) of Section 26 of the University Grants Commission Act, 1956, the University Grants Commission hereby makes the following Regulations, namely-

## **8.1 TITLE, COMMENCEMENT AND APPLICABILITY**

- 8.1.1. These regulations shall be called the “UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009”.
- 8.1.2. They shall come into force with immediate effect.
- 8.1.3. They shall apply to all the universities established or incorporated by or under a Central Act, a Provincial Act or a State Act, to all institutions deemed to be university under Section 3 of the UGC Act, 1956, to all other higher educational institutions, including the departments, constituent units and all the premises (academic, residential, sports, canteen, etc) of such universities, deemed universities and other higher educational institutions, whether located within the campus or outside, and to all means of transportation of students whether public or private.

## **8.2 OBJECTIVE**

To root out ragging in all its forms from universities, colleges and other educational institutions in the country by prohibiting it by law, preventing its occurrence by following the provisions of these Regulations and punishing those who indulge in ragging as provided for in these Regulations and the appropriate law in force.

## **8.3 DEFINITIONS FOR THE PURPOSES OF THESE REGULATIONS**

- 8.3.1 “college” means any institution, whether known as such or by any other name, which provides for a programme of study beyond 12 years of schooling for obtaining qualification from a university and which, in accordance with the rules and regulations of such university, is recognized as competent to provide for such programme of study and present students undergoing such programme of study for the examination for the award of such qualification.
- 8.3.2 “Head of the institution” means the ‘Vice-Chancellor’ in case of a university/deemed to be university, ‘Principal’ in case of a college, ‘Director’ in case of an institute.
- 8.3.3 “institution” means a higher educational institution (HEI), like a university, a college, an institute, etc. imparting higher education beyond 12 years of schooling leading to a degree (graduate, postgraduate and/or higher level) and/or to a university diploma.
- 8.3.4 “Ragging” means the following:  
Any conduct whether by words spoken or written or by an act which has the effect of teasing, treating or handling with rudeness any other student, indulging in rowdy or undisciplined activities which causes or is likely to cause annoyance, hardship or psychological harm or to raise fear or apprehension thereof in a fresher or a junior student or asking the students to do any act or perform something which such student will not in the ordinary course and which has the effect of causing or generating a sense of shame or embarrassment so as to adversely affect the physique or psyche of a fresher or a junior student.

- 8.3.5 “Statutory/Regulatory body” means a body so constituted by a Central/ State Government legislation for setting and maintaining standards in the relevant areas of higher education, such as the All India Council for Technical Education (AICTE), the Bar Council of India (BCI), the Dental Council of India (DCI), the Distance Education Council (DEC), the Indian Council of Agricultural Research (ICAR), the Indian Nursing Council (INC), the Medical Council of India (MCI), the National Council for Teacher Education (NCTE), the Pharmacy Council of India (PCI), etc. and the State Higher Education Councils.
- 8.3.6 “University” means a university established or incorporated by or under a Central Act, a Provincial Act or a State Act, an institution deemed to be university under Section 3 of the UGC Act, 1956, or an institution specially empowered by an Act of Parliament to confer or grant degrees.

## **8.4. PUNISHABLE INGREDIENTS OF RAGGING**

Abetment to ragging;  
 Criminal conspiracy to ragging;  
 Unlawful assembly and rioting while ragging; Public nuisance created during ragging;  
 Violation of decency and morals through ragging; Injury to body, causing hurt or grievous hurt; Wrongful restraint;  
 Wrongful confinement; Use of criminal force;  
 Assault as well as sexual offences or unnatural offences; Extortion;  
 Criminal trespass; Offences against property; Criminal intimidation;  
 Attempts to commit any or all of the above mentioned offences against the victim(s);  
 Physical or psychological humiliation;  
 All other offences following from the definition of “Ragging”.

## **8.5 MEASURES FOR PROHIBITION OF RAGGING AT THE INSTITUTION LEVEL**

- 8.5.1 The institution shall strictly observe the provisions of the Act of the Central Government and the State Governments, if any, or if enacted, considering ragging as a cognizable offence under the law on a par with rape and other atrocities against women and ill-treatment of persons belonging to the SC/ST, and prohibiting ragging in all its forms in all institutions.
- 8.5.2 Ragging in all its forms shall be totally banned in the entire institution, including its departments, constituent units, all its premises (academic, residential, sports, canteen, etc.) whether located within the campus or outside and in all means of transportation of students whether public or private.
- 8.5.3 The institution shall take strict action against those found guilty of ragging and/or of abetting ragging.

## **8.6 MEASURES FOR PREVENTION OF RAGGING AT THE INSTITUTION LEVEL**

### **8.6.1 BEFORE ADMISSIONS:**

- 8.6.1.1 The advertisement for admissions shall clearly mention that ragging is totally banned in the institution, and anyone found guilty of ragging and/or abetting ragging is liable to be punished appropriately (for punishments, ref. section 8 below).
- 8.6.1.2 The brochure of admission/instruction booklet for candidates shall print in block letters these Regulations in full (including Annexures).
- 8.6.1.3 The ‘Prospectus’ and other admission related documents shall incorporate all directions of the Supreme Court and /or the Central or State Governments as applicable, so that

the candidates and their parents/ guardians are sensitized in respect of the prohibition and consequences of ragging. If the institution is an affiliating university, it shall make it mandatory for the institutions under it to compulsorily incorporate such information in their 'Prospectus'.

- 8.6.1.4 The application form for admission/ enrolment shall have a printed undertaking, preferably both in English/Hindi and in one of the regional languages known to the institution and the applicant (English, Hindi and Marathi versions appended), to be filled up and signed by the candidate to the effect that he/she is aware of the law regarding prohibition of ragging as well as the punishments, and to the effect that he/she has not been expelled and/or debarred from admission by any institution and that he/she, if found guilty of the offence of ragging and/or abetting ragging, is liable to be punished appropriately.
- 8.6.1.5 The application form shall also contain a printed undertaking, preferably both in English/ Hindi and in one of the regional languages known to the institution and the parent/ guardian (English Hindi and Marathi versions appended), to be signed by the parent/ guardian of the applicant to the effect that he/ she is also aware of the law in this regard and agrees to abide by the punishment meted out to his/ her ward in case the latter is found guilty of ragging and/or abetting ragging.
- 8.6.1.6 The application for admission shall be accompanied by a document in the form of the School Leaving Certificate/Transfer Certificate/ Migration Certificate/ Character Certificate which shall include a report on the behavioral pattern of the applicant, so that the institution can thereafter keep intense watch upon a student who has a negative entry in this regard.
- 8.6.1.7 A student seeking admission to the hostel shall have to submit additional undertaking in the form of 6.1.4 (both Parts) along with his/ her application for hostel accommodation
- 8.6.1.8 At the commencement of the academic session the Head of the Institution shall convene and address a meeting of various functionaries/agencies, like Hostel Wardens, representatives of students, parents/ guardians, faculty, district administration including police, to discuss the measures to be taken to prevent ragging in the Institution and steps to be taken to identify the offenders and punish them suitably.
- 8.6.1.9 To make the community at large and the students in particular aware of the dehumanizing effect of ragging, and the approach of the institution towards those indulging in ragging, big posters (preferably multicolored with different colours for the provisions of law, punishments, etc.) shall be prominently displayed on all Notice Boards of all departments, hostels and other buildings as well as at vulnerable places. Some of such posters shall be of permanent nature in certain vulnerable places.
- 8.6.1.10 The institution shall request the media to give adequate publicity to the law prohibiting ragging and the negative aspects of ragging and the institution's resolve to ban ragging and punish those found guilty without fear or favour.
- 8.6.1.11 The institution shall identify, properly illuminate and man all vulnerable locations.
- 8.6.1.12 The institution shall tighten security in its premises, especially at the vulnerable places. If necessary, intense policing shall be resorted to at such points at odd hours during the early months of the academic session.
- 8.6.1.13 The institution shall utilize the vacation period before the start of the new academic year to launch wide publicity campaign against ragging through posters, leaflets, seminars, street plays, etc.
- 8.6.1.14 The faculties/ departments/ units of the institution shall have induction arrangements (including those which anticipate, identify and plan to meet any special needs of any specific section of students) in place well in advance of the beginning of the academic year with a clear sense of the main aims and objectives of the induction process.

**8.6.2 ON ADMISSION:**

- 8.6.2.1 Every fresh student admitted to the institution shall be given a printed leaflet detailing when and to whom he/she has to turn to for help and guidance for various purposes (including Wardens, Head of the institution, members of the anti-ragging committees, relevant district and police authorities), addresses and telephone numbers of such persons/authorities, etc., so that the fresher need not look up to the seniors for help in such matters and get indebted to them and start doing things, right or wrong, at their behest. Such a step will reduce the freshers dependence on their seniors.
- 8.6.2.2 The institution through the leaflet mentioned above shall explain to the new entrants the arrangements for their induction and orientation which promote efficient and effective means of integrating them fully as students.
- 8.6.2.3 The leaflet mentioned above shall also inform the freshers about their rights as bona fide students of the institution and clearly instructing them that they should desist from doing anything against their will even if ordered by the seniors, and that they have nothing to fear as the institution cares for them and shall not tolerate any atrocities against them.
- 8.6.2.4 The leaflet mentioned above shall contain a calendar of events and activities laid down by the institution to facilitate and complement familiarization of freshers with the academic environment of the institution.
- 8.6.2.5 The institution shall also organize joint sensitization programmes of ‘freshers’ and seniors.
- 8.6.2.6 Freshers shall be encouraged to report incidents of ragging, either as victims, or even as witnesses.

**8.6.3 AT THE END OF THE ACADEMIC YEAR:**

- 8.6.3.1 At the end of every academic year the Vice-Chancellor/ Dean of Students Welfare/ Director/ Principal shall send a letter to the parents/ guardians of the students who are completing the first year informing them about the law regarding ragging and the punishments, and appealing to them to impress upon their wards to desist from indulging in ragging when they come back at the beginning of the next academic session.
- 8.6.3.2 At the end of every academic year the institution shall form a ‘Mentoring Cell’ consisting of Mentors for the succeeding academic year. There shall be as many levels or tiers of Mentors as the number of batches in the institution, at the rate of 1 Mentor for 6 freshers and 1 Mentor of a higher level for 6 Mentors of the lower level.

**8.6.4 SETTING UP OF COMMITTEES AND THEIR FUNCTIONS:**

- 8.6.4.1 The Anti-Ragging Committee:- The Anti-Ragging Committee shall be headed by the Head of the institution and shall consist of representatives of faculty members, parents, students belonging to the freshers’ category as well as seniors and non-teaching staff. It shall monitor the anti-ragging activities in the institution, consider the recommendations of the Anti-Ragging Squad and take appropriate decisions, including spelling out suitable punishments to those found guilty.
- 8.6.4.2 The Anti-Ragging Squad:- The Anti-Ragging Squad shall be nominated by the Head of the institution with such representation as considered necessary and shall consist of members belonging to the various sections of the campus community. The Squad shall have vigil, oversight and patrolling functions. It shall be kept mobile, alert and active at all times and shall be empowered to inspect places of potential ragging and make surprise raids on hostels and other hot spots. The Squad shall investigate incidents of ragging and make recommendations to the Anti-Ragging Committee and shall work under the overall guidance of the said Committee.
- 8.6.4.3 Monitoring Cell on Ragging:- If the institution is an affiliating university, it shall have a Monitoring Cell on Ragging to coordinate with the institutions affiliated to it by calling for reports from the Heads of such institutions regarding the activities of the Anti-Ragging Committees, Squads, and Mentoring Cells, regarding compliance with the instructions on conducting orientation programmes, counseling sessions, etc., and regarding the incidents of ragging, the problems faced by wardens and other officials, etc. This Cell shall also

review the efforts made by such institutions to publicize anti-ragging measures, cross-verify the receipt of undertakings from candidates/students and their parents/guardians every year, and shall be the prime mover for initiating action by the university authorities to suitably amend the Statutes or Ordinances or By-laws to facilitate the implementation of anti ragging measures at the level of the institution.

In accordance with the regulations set by UGC, an Anti-Ragging Committee and Anti-Ragging Squad has been constituted by the institute.

#### **Anti-Ragging Committee (ICT Mumbai)**

|  |  |
|--|--|
| Dean (HRD)                                 | Professor P. A. Mahanwar   |
| Head Warden                                | Dr. P. D. Vaidya   |
| Three Professors/Associate Professors      | Professor (Smt.) P. V. Devarajan<br>Professor Radha Jayaram<br>Professor G. S. Shankarling |
| Support Staff                              | Dr. Satish Mane  |
| Counsellor                                 | Ms. Malini Shah  |
| A. R. (Admin)/OSD                          | Shri Deepak Jadiye   |
| VP, Technological Association (Ex-officio) | Professor P. D. Amin   |
| GS, Technological Association (Ex-officio) |  |
| Concerned HOD (Invitee)                    |  |
| Registrar                                  | Professor R.R. Deshmukh  |

#### **Anti-Ragging Squad members (ICT Mumbai)**

|                    |  |
|--------------------|--|
| Dean (HRD)         | Professor P. A. Mahanwar   |
| All Hostel Wardens | Dr. A. Vijay Kumar, Mrs. Madhavi Wadkar,<br>Dr. Jyotsna T. Waghmare,<br>Dr. P. D. Vaidya |

#### **Anti-Ragging Committee (ICT Marathwada Campus):**

|                        |                       |
|------------------------|-----------------------|
| Head Warden            | Dr. Parag R. Nemade   |
| (Ladies Hostel Warden) | Dr. Ritika Joshi      |
| Professor              | Dr. Manojkumar Jadhao |
| Associate Dean         | Shri. Sharad Lahoti   |
| Data Executive         | Shri. Ajay Patil      |

#### **Anti-Ragging Squad Members (ICT Marathwada Campus):**

|                      |                     |
|----------------------|---------------------|
| Associate Dean       | Shri. Sharad Lahoti |
| Professor            | Dr. Girish M. Joshi |
| Ladies Hostel Warden | Dr. Ritika Joshi    |
| Data Executive       | Shri. Sandip Pawar  |

#### **Anti-Ragging Committee members (ICT-IOC Bhubneshwar Campus):**

|   |                         |
|---|-------------------------|
| Director  | Prof. B. N. Thorat      |
| Faculty   | Dr. Rupesh Malani       |
| Faculty   | Dr. Saurabh Patankar    |
| Assistant Registrar                                   | Mr. Sunil Kumar Mohanty |
| General Secretary (Technological Association ICT-IOC) |                         |

**Anti-Ragging SquD members (ICT-IOC Bhubneshwar Campus):**

|                 |  |
|-----------------|--|
| Deputy Director | Dr. Rambabu Dandela  |
| All Faculties   | Dr. Sankha Karmakar, Dr. Dipak Maity, Dr. Ramakanta Naik, Dr. Saikat Bhaumik, Dr. Lisa Roy |

**8.6.5 OTHER MEASURES:**

- 8.6.5.1 The Annexures mentioned in sub-clauses 6.1.4, 6.1.5 and 6.1.7 of these Regulations shall be furnished at the beginning of each academic year by every student, that is, by freshers as well as seniors.
- 8.6.5.2 The institution shall arrange for regular and periodic psychological counseling and orientation for students (for freshers separately, as well as jointly with seniors) by professional counselors during the first three months of the new academic year. This shall be done at the institution and department/ course levels. Parents and teachers shall also be involved in such sessions.
- 8.6.5.3 Apart from placing posters mentioned in sub-clause 6.1.9 above at strategic places, the institution shall undertake measures for extensive publicity against ragging by means of audio-visual aids, by holding counseling sessions, workshops, painting and design competitions among students and other methods as it deems fit.
- 8.6.5.4 If the institution has B.Ed, and other Teacher training programmes, these courses shall be mandated to provide for anti-ragging and the relevant human rights appreciation inputs, as well as topics on sensitization against corporal punishments and checking of bullying amongst students, so that every teacher is equipped to handle at least the rudiments of the counseling approach.
- 8.6.5.5 Wardens shall be appointed as per the eligibility criteria laid down for the post reflecting both the command and control aspects of maintaining discipline, as well as the softer skills of counseling and communicating with the youth outside the class-room situations. Wardens shall be accessible at all hours and shall be provided with mobile phones. The institution shall review and suitably enhance the powers and perquisites of Wardens and authorities involved in curbing the menace of ragging.
- 8.6.5.6 The security personnel posted in hostels shall be under the direct control of the Wardens and assessed by them.
- 8.6.5.7 Private commercially managed lodges and hostels shall be registered with the local police authorities, and this shall be done necessarily on the recommendation of the Head of the institution. Local police, local administration and the institutional authorities shall ensure vigil on incidents that may come within the definition of ragging and shall be responsible for action in the event of ragging in such premises, just as they would be for incidents within the campus. Managements of such private hostels shall be responsible for not reporting cases of ragging in their premises.
- 8.6.5.8 The Head of the institution shall take immediate action on receipt of the recommendations of the Anti-Ragging Squad. He/ She shall also take action suomoto if the circumstances so warrant.
- 8.6.5.9 Freshers who do not report the incidents of ragging either as victims or as witnesses shall also be punished suitably.
- 8.6.5.10 Anonymous random surveys shall be conducted across the 1<sup>st</sup> year batch of freshers every fortnight during the first three months of the academic year to verify and cross-check whether the campus is indeed free of ragging or not. The institution may design its own methodology of conducting such surveys.
- 8.6.5.11 The burden of proof shall lie on the perpetrator of ragging and not on the victim.
- 8.6.5.12 The institution shall file an FIR with the police / local authorities whenever a case of ragging is reported, but continue with its own enquiry and other measures without waiting for action on the part of the police/ local authorities. Remedial action shall be initiated and completed within the one week of the incident itself.

- 8.6.5.13 The Migration / Transfer Certificate issued to the student by the institution shall have an entry, apart from those relating to general conduct and behaviour, whether the student has been punished for the offence of committing or abetting ragging, or not, as also whether the student has displayed persistent violent or aggressive behaviour or any inclination to harm others.
- 8.6.5.14 Preventing or acting against ragging shall be the collective responsibility of all levels and sections of authorities or functionaries in the institution, including faculty, and not merely that of the specific body/ committee constituted for prevention of ragging.
- 8.6.5.15 The Heads of institutions other than universities shall submit weekly reports to the Vice-chancellor of the university the institution is affiliated to or recognized by, during the first three months of new academic year and thereafter each month on the status of compliance with anti-ragging measures. The Vice Chancellor of each university shall submit fortnightly reports of the university, including those of the Monitoring Cell on Ragging in case of an affiliating university, to the Chancellor.
- 8.6.5.16 Access to mobile phones and public phones shall be unrestricted in hostels and campuses, except in class-rooms, seminar halls, library etc. where jammers shall be installed to restrict the use of mobile phones.

#### **8.6.6 MEASURES FOR ENCOURAGING HEALTHY INTERACTION BETWEEN FRESHERS AND SENIORS:-**

- 8.6.6.1 The institution shall set up appropriate committees including the course-in-charge, student advisor, Warden and some senior students to actively monitor, promote and regulate healthy interaction between the freshers and senior students.
- 8.6.6.2 Freshers' welcome parties shall be organized in each department by the senior students and the faculty together soon after admissions, preferably within the first two weeks of the beginning of the academic session, for proper introduction to one another and where the talents of the freshers are brought out properly in the presence of the faculty, thus helping them to shed their inferiority complex, if any, and remove their inhibitions.
- 8.6.6.3 The institution shall enhance the student-faculty interaction by involving the students in all matters of the institution, except those relating to the actual processes of evaluation and of faculty appointments, so that the students shall feel that they are responsible partners in managing the affairs of the institution and consequently the credit due to the institution for good work/ performance is due to them as well.

### **8.7 MEASURES AT THE UGC/ STATUTORY/ REGULATORY BODY LEVEL**

#### **8.7.1 REGULATORY MEASURES:**

- 8.7.1.1 The UGC and other Statutory /Regulatory bodies shall make it mandatory for the institutions to compulsorily incorporate in their 'Prospectus' the directions of the Supreme Court and/or the Central or State Governments with regard to prohibition and consequences of ragging, and that non-compliance with the directives against ragging in any manner whatsoever shall be considered as lowering of academic standards by the erring institution making it liable for appropriate action.
- 8.7.1.2 The UGC (including NAAC and UGC Expert Committees visiting institutions for various purposes) and similar Committees of other Statutory/Regulatory bodies shall cross-verify that the institutions strictly comply with the requirement of getting the undertakings from the students and their parents/ guardians as envisaged under these Regulations.
- 8.7.1.3 The UGC and other funding bodies shall make it one of the conditions in the Utilization Certificate for sanctioning any financial assistance or aid to the institution under any of the general or special schemes that the institution has strictly complied with the anti-ragging measures and has a blemish-less record in terms of there being no incidents of ragging during the period pertaining to the Utilization Certificate.
- 8.7.1.4 The NAAC and other accrediting bodies shall factor in any incident of ragging in the institution while assessing the institution in different grades.

**8.7.2 INCENTIVES FOR CURBING RAGGING:**

- 8.7.2.1 The UGC shall consider providing special/ additional annual financial grants-in-aid to those eligible institutions which report a blemish-less record in terms of there being no incidents of ragging.
- 8.7.2.2 The UGC shall also consider instituting another category of financial awards or incentives for those eligible institutions which take stringent action against those responsible for incidents of ragging.
- 8.7.2.3 The UGC shall lay down the necessary incentive for the post of Warden in order to attract the right type of eligible candidates, and motivate the incumbents.

**8.7.3 MONITORING MECHANISM TO ENSURE COMPLIANCE:**

- Apart from the monitoring mechanism built in under different sub-clauses of these Regulations, there shall also be the following monitoring mechanism:
- 8.7.3.1 The UGC shall constitute an Inter-Council Committee for prevention of Ragging consisting of representatives of the AICTE, the IITs, the NITs, the IIMs, the MCI, the DCI, the NCI, the ICAR and such other bodies which have to deal with higher education to coordinate and monitor the anti-ragging movement across the country and to make certain policy decisions. The said Committee shall meet at least twice a year in the normal course.
  - 8.7.3.2 The UGC shall also have an Anti-Ragging Cell within the Commission as an institutional mechanism to provide secretarial support for collection of information and monitoring, and to coordinate with the State level and university level Committees for effective implementation of anti-ragging measures.

**8.8 PUNISHMENTS****8.8.1 AT THE INSTITUTION LEVEL:**

Depending upon the nature and gravity of the offence as established by the Anti-Ragging Committee of the institution, the possible punishments for those found guilty of ragging at the institution level shall be any one or any combination of the following:

- 8.8.1.1 Suspension from attending classes and academic privileges
- 8.8.1.2 Withholding/ withdrawing scholarship/ fellowship and other benefits.
- 8.8.1.3 Debarring from appearing in any test/ examination or other evaluation process.
- 8.8.1.4 Withholding results
- 8.8.1.5 Debarring from representing the institution in any regional, national or international meet, tournament, youth festival, etc. .
- 8.8.1.6 Suspension/ expulsion from the hostel.
- 8.8.1.7 Cancellation of admission
- 8.8.1.8 Rustication from the institution for period ranging from 1 to 4 semesters
- 8.8.1.9 Expulsion from the institution and consequent debarring from admission to any other institution for a specified period ,
- 8.8.1.10 Fine ranging between Rupees 25,000/- and Rupees 1 lakh .
- 8.8.1.11 Collective punishment: When the persons committing or abetting the crime of ragging are not identified, the institution shall resort to collective punishment.

**8.8.2 AT THE UNIVERSITY LEVEL IN RESPECT OF INSTITUTIONS UNDER IT:**

If an institution under a university (being constituent of, affiliated to or recognized by it) fails to comply with any of the provisions of these Regulations and fails to curb ragging effectively, the university may impose any one or any combination of the following penalties on it:

- 8.8.2.1 Withdrawal of affiliation/ recognition or other privileges conferred on it
- 8.8.2.2 Prohibiting such institution from presenting any students then undergoing any programme of study therein for the award of any degree/diploma of the university
- 8.8.2.3 Withholding grants allocated to it by the university, if any
- 8.8.2.4 Withholding any grants channelised through the university to the institution
- 8.8.2.5 Any other appropriate penalty within the powers of the university.

### **8.3 AT THE APPOINTING AUTHORITY LEVEL:**

The authorities of the institution, particularly the Head of the institution, shall be responsible to ensure that no incident of ragging takes place in the institution. In case any incident of ragging takes place, the Head shall take prompt and appropriate action against the person(s) whose dereliction of duty lead to the incident. The authority designated to appoint the Head shall, in its turn, take prompt and appropriate action against the Head.

### **8.4 AT THE UGC/STATUTORY/REGULATORY BODY LEVEL:**

If an institution fails to curb ragging, the UGC/Statutory/Regulatory body concerned may impose any one or any combination of the following penalties on it:

- 8.8.4.1 Delisting the institution from section 12B of the UGC Act or any similar provision in the Act of the Statutory/Regulatory body concerned
- 8.8.4.2 Withholding any grants allocated to it
- 8.8.4.3 Declaring the institution ineligible for consideration for any assistance under any of the general or special assistance programmes of the UGC/Statutory/ Regulatory body concerned
- 8.8.4.4 Declaring that the institution does not have the minimum academic standards and warning the potential candidates for admission accordingly through public notice and posting on the UGC Website/ Website of the Statutory/Regulatory body concerned.
- 8.8.4.5 Taking such other action within its powers as it may deem fit and impose such other penalties as provided till such time as the institution achieves the objective of curbing ragging.
- 8.8.4.6 Collaborating with one another to work out other possible deterrents.

*NOTE : To fill an online Anti Ragging undertaking please log on to <https://anitragging.in>*



# [UNDERTAKINGS]

## UNDERTAKING TO BE GIVEN BY ALL STUDENTS

I have read all the Rules of Admission and after understanding these rules thoroughly, I have filled in the application form for admission for the current year. The information given by me in my application is true to the best of my knowledge and belief. I understand that if any of the statements made by me in the application form or any information supplied by me in connection with my admission is later on at any time, found to be false or incorrect, my admission will be cancelled, fees forfeited and I may be expelled from the ICT by the Vice Chancellor.

- a) I have not been debarred from appearing at any examination held by any Government constituted or statutory examination authority in India.
- b) I fully understand that the allotment of a course will be made to me depending on my interest merit, order of preferences given by me and the number of seats available at that point of counseling.
- c) I understand that no document after the last date of submission will be entertained for the purpose of claims or concessions, etc. in connection with my admission unless otherwise mentioned in the rules.
- d) I am fully aware that the Vice Chancellor, ICT or his representative will not make any correspondence with me regarding admission. I am also aware that it is entirely my responsibility to see the notifications in the newspaper(s) and notices on the notice board and website of the ICT.
- e) I am aware that any rule imposed by the Institute such as ‘imposing limits on the number of attempts permissible to pass any examination shall be binding on me.
- f) I hereby agree to conform to any Rules, Acts and Laws enforced by Government and I hereby undertake that, I will do nothing either inside or outside the Institute which may result in disciplinary action against me under these rules, acts and laws referred to.
- g) I fully understand that the Vice Chancellor, ICT has a right to expel me from the institute for any infringement of the rules of conduct and discipline prescribed by the Institute or Government and the undertaking given above.
- h) I am fully aware that, I will not be allowed to appear for the examination if I do not attend minimum 75 per cent classes of theory, practical, drawing etc. separately. I am also aware that I will not be allowed to appear for the examination, if I fail to submit satisfactorily all the assignments, jobs, journals, drawings, reports as required within the stipulated period.

### **Course**

Date:

Name and Signature of the Student

## DECLARATION /UNDERTAKING BY HOSTEL RESIDENTS

I, Mr. /Ms.....,

Programme:....., Dept. ....,

student of **Institute of Chemical Technology (ICT)**, permanent resident of

.....  
.....

..... Phone No: .....  
(Give permanent home address with telephone no.),

do hereby undertake on this the ..... (Day), of ..... (Month)..... (Year),

that as a hosteller at ICT Mumbai, I hereby solemnly promise that:-

1. That I shall obey in word and spirit the rules and regulations of the Hostel and any amendments thereof.
2. I shall at all times maintain the discipline and decorum of the Hostel.
3. I shall preserve, tend and safeguard the property of the hostel, and shall not knowingly or otherwise destroy, damage, or deface Hostel property.
4. I shall keep my room and the common grounds of the hostel clean and unsullied at all times and will make it available for inspection as and when required.
5. I understand that ragging is strictly prohibited and is an offence. Any involvement will lead to disciplinary action from the hostel & institute authorities. I, hereby declare that, both I will not indulge in, nor tolerate ragging, in any form, even in words or intentions.
6. I understand that use of any addictive substance like tobacco, alcohol, narcotic or habit forming drugs, etc., is strictly prohibited in the hostel / Institute. I will be liable for any disciplinary action for indulgence in such activity, viz., smoking, consumption of alcoholic drinks or any other intoxicating substance in the hostel and Institute premises and found under its influence at any point of time / place during my studies in the Institute.
7. I will maintain my valuables in my own custody. The management is not responsible for any loss or damage.
8. I agree that no entry or exit will be made by me from 11:30 PM to 6:00 AM in the Institute, unless specific permission is taken.
9. I understand that prior permission has to be obtained from the competent authority to visit outside campus for bonafide purpose; I will be solely responsible for my safety and protection during my departure and return to the Institute. In case I leave the Institute /hostel without prior permission, Institute can initiate the disciplinary action against me and Institute authorities are not responsible for my safety.
10. In the event, when I take a leave (with permission) to visit hometown or other places, I will be solely responsible for my safety and protection during my departure and return to the Institute.
11. In the event of my parents / guardians or relatives are visiting me, I will inform the Warden in advance and access / contact with them, meeting in the hostel or going out for local visit will be with the consent of the Warden (Written permission).

12. I understand that no friends or outsiders are allowed in the hostel premises. Also, men cannot go to the women's hostel or vice versa if not otherwise stipulated and any such visit will be seen as a serious misconduct, inviting penalty.
13. I will play a proactive role as a student and suggestions / feedback for improvement or any concerns about aspects of hostel life will be brought to the notice of hostel incharge immediately.
14. I will strive to play a proactive role in keeping gender amity and maintain cordial & harmonious relations with all, group, individual and authorities on the campus. I understand that the Institute observes a non-negotiable stand with regard to issues of caste, creed and communal harmony.
15. I understand that my involvement in any unacceptable behavior under the code of conduct and above and any violation of hostel rules will lead to my immediate expulsion from the hostel / Institute.
16. I will not change my allotted room without permission from the authority.
17. I shall ensure that all dues, including any fines or penalties that may have been imposed against me, are paid in time to the Institute.
18. I shall strictly observe and abide by the code of conduct the Hostel.
19. I, hereby declare that, I will neither join in any coercive agitation/strike for the purpose of forcing the authorities of the Institute to solve any problem, nor I will participate in any activity which has a tendency to disturb the peace and tranquility of life of the ICT Hostel premises.
20. I, hereby declare that, I shall be solely responsible for my involvement in any kind of undesirable/indisciplinary activities outside the campus, and shall be liable for punishment as per the law of the land. I, further understand that, the Institute shall in no way provide any support to me and will not be held responsible for my any such action.
21. I, also declare that, I am not suffering from any serious/contagious ailment and/or any psychiatric/psychological disorder.
22. I will take all precautionary measures related to COVID-19 and will follow all the instructions laid down related to COVID-19 by the institute authority and by Government authorities from time to time.
23. I, further declare that, my admission may be cancelled, at any stage, if I am found ineligible and/or the information provided by me are found to be incorrect.
24. I, hereby undertake to inform the Institute, about any changes in information submitted by me, in the Application Form and any other documents, including change in addresses and phone nos., from time to time.

**Date:****Signature of Student****DECLARATION BY PARENT/ GUARDIAN**

I .....  
 ...., (Mother / Father / Guardian) hereby fully endorse the above undertaking/declaration given by my child/ward. And I will endeavour to induce my child/ward to do his/her best to observe the above stated undertaking in words and spirit.

**Place: .....****Signature of Mother / Father / Local Guardian****Date: .....**

## INSTITUTE OF CHEMICAL TECHNOLOGY

(UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)

MATUNGA, MUMBAI - 400 019

### UNDERTAKING TO BE GIVEN BY POSTGRADUATE STUDENTS (MASTER'S AND DOCTORAL)

1. I, the undersigned, understand that confirmation of my admission is subject to passing the qualifying examination i.e. \_\_\_\_\_ with at least \_\_\_\_% ( \_\_\_ CGPA) of the aggregate marks and hence my admission will be effective only when I submit the proof to that effect. If I fail to produce the result of the qualifying examination before the end of first semester for any reasons, I shall be declared ineligible for the said admission and all the fees which I have paid shall be forfeited.
2. After declaration of the result of the qualifying examination, I shall obtain the Eligibility Certificate of the ICT as per the Rules. For M.Chem.Engg. M.Pharm. M.Tech. Courses and M.E. Plastic the last date for applying for Eligibility is 31<sup>st</sup> August (every year). (For other than ICT students only)
3. **Attendance:**
  - (a) I am required to attend the research related activities from the first day of joining the institute and if I fail to do so my admission will stand cancelled.
  - (b) I shall sign regularly the muster kept in the office of respective Department / Research Supervisor.
  - (c) I shall take prior permission of my Research Supervisor for any leave in writing.
4. **Fellowship:**
  - (i) I am aware that fellowship is available only for the GATE/GPAT/NET/CSIR/DBT qualified students for master's programmes and for all Doctoral programmes.
  - (ii) I am aware that my fellowship commences from the date of confirmation of my admission or date of joining the course, whichever is later.
  - (iii) I am also aware that institute shall not be held responsible for non-receipt of the respective fellowship amount from the funding agency in time. I undertake that I shall pay all the Institute's fees, charges and deposits by the due date declared and in no case I shall give any excuse of non-receipt of the fellowship for non-payment of the same.
  - (iv) I am given to understand that the institute does not have any budgetary provision for the payment of either part of full fellowships. The Institute will disburse the fellowship when the Institute receives the same.

5. As a doctorate student, I am aware that I am required to contribute to the academic / administrative activities of the Institute as per the prescribed norms without expecting any remuneration and the continuation of my fellowship will depend on my satisfactory participation and performance in such activities. Also, I shall abide by the Safety Rules of the Institute and shall undergo required training for the purpose.

**Course and Branch:** \_\_\_\_\_

**Mobile No.:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Date:**

**Name and Signature of the Student**

## INSTITUTE OF CHEMICAL TECHNOLOGY

(UNIVERSITY UNDER SECTION 3 OF UGC ACT 1956)

MATUNGA, MUMBAI - 400 019

### UNDERTAKING TO BE GIVEN BY UNDER GRADUATE, POSTGRADUATE STUDENTS (MASTER'S AND DOCTORAL)

#### USAGE POLICY:

- Electronic resources such as e-journals, e-databases, e-books etc. made available by the Prof. M. M. Sharma Library, ICT Mumbai are for academic use.
- These resources can be searched, browsed and material may be downloaded and printed as single copies of articles as is done in the case of printed library material. Downloading or printing of a complete book or an entire issue or a volume of one or more journals (called systematic downloading) is strictly prohibited.
- Use of robots, spiders or intelligent agents to access, search and/or systematically download from these resources is also prohibited.
- Any violation of this policy will result in penal action as per the rules and regulations of the Institute.
- Please be aware that systematic downloading will cause the publisher to block to the entire community of users @ ICT Mumbai from accessing these resources.

#### USER-UNDERTAKING:

I understand the policy outlined above and undertake to abide by it. I understand that any violation of the policy will result in loss of my library privileges and/or other action as deemed appropriate by the Institute

**Course and Branch:** \_\_\_\_\_

**Mobile No.:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Date:**

**Name and Signature of the Student**

## PROFORMA - B

**(For P1/ P2/ P3 Candidates)**

**(For Physically Handicapped Candidates)**

### CERTIFICATE

Photograph  
of the candi-  
date showing  
the Physical  
disability

This is to certify that I have examined Mr./Ms \_\_\_\_\_  
 \_\_\_\_\_ on date \_\_\_\_\_ . He/She has

(Name of the Physical Disability)

which comes under the sub category

Blindness (P1)/ Speech and Hearing impaired (P2)/ Orthopaedic disorder(P3)

**Certified that :**

1. The percentage of handicap is not less than 40% and is equal to .....%.
2. The disability is permanent in nature.
3. The candidate is capable of carrying out all activities related to theory and practical works as applicable to degree course in Engineering/ Technology without any special concessions and exemptions.
4. This certificate is issued as per the provisions given in the Person with Disability Act, 1995 and its amendments.

This certificate is issued for the purpose of his/ her admission to first year of four years degree course in Technical education for the academic year 2020-21.

Outward No. and Date :

Place :

(Name and Signature)

Director,

All India Institute of

Physically Handicapped, Mumbai

(Or) Dean/ Civil Surgeon of Government Hospital

Seal of the office

(Name of the issuing Authority)

## PROFORMA - B-1

**(To be issued on the printed letterhead of the concerned office)**

**(For Physically Handicapped Candidates)**

**P3 (Learning Disability) Candidates**

**LEARNING DISABILITY CLINIC**

**L.T.M.G, HOSPITAL, SION, MUMBAI 400 022**

### CERTIFICATE

Photograph of  
the candidate

Name : Date:

Age :

Date of Birth :

Date of Registration: L.D. No.

Father's Name :

Std. : School/ College Name:

Physical and Neurologic Assessment (Date) :

Psychological Assessment (Date) :

WISC (R) Verbal IQ :

Performance IQ :

Global IQ :

Interpretation :

Educational Assessment (Date) : WRAT: R

S

A

**Certified that :**

1. The percentage of handicap is not less than 40% and is equal to .....%.
2. The disability is permanent in nature.
3. The candidate is capable of carrying out all activities related to theory and practical works as applicable to degree course in Engineering/ Technology without any special concessions and exemptions.
4. This certificate is issued as per the provisions given in the Person with Disability Act, 1995 and its amendments.

This certificate is issued for the purpose of his/ her admission to first year of four years degree course in Technical education for the academic year 2020-2021.

Recommendations

Outward No. and Date :

Place :

(Name and Signature of Issuing authority)

## PROFORMA- E

**(Specimen Application form for Cancellation of Admission) (To be submitted in duplicate)**

Date:.....

To

The Vice Chancellor,  
ICT, Mumbai

Respected Sir,

Full name of candidate : \_\_\_\_\_

Course : \_\_\_\_\_ Branch : \_\_\_\_\_ Date of Admission : \_\_\_\_\_

ICT Merit Number : \_\_\_\_\_ Amount of fees paid: Rs. : \_\_\_\_\_

Fee Receipt Number and Date : \_\_\_\_\_ (Attach Photocopy)

I request you to kindly return my original documents and refund the fees paid as per the rules.

\_\_\_\_\_  
Signature of candidate

**For Office use only:**

Full address of the candidate :

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---

Tel./Mobile No. : \_\_\_\_\_

E mail : \_\_\_\_\_

|                      |       |
|----------------------|-------|
| Amount Paid, Rs.     | _____ |
| Amount Deducted, Rs. | _____ |
| Amount Refunded, Rs. | _____ |
| Cheque No. and date  | _____ |
| Bank particulars     | _____ |

\_\_\_\_\_  
Signature of Accounts Officer

Received the following original documents from the Admission Authority, along with the cheque towards refund of fees after deductions.

- 1
- 2
- 3

\_\_\_\_\_  
Signature of the Candidate

# विद्यापीठ गीत

## श्री रसायन देविका

उद्घोष तुझा जयघोष तुझा

उत्कर्ष तुझा जल्लोष तुझा

संघर्ष नको संहार नको

संदेश तुझा उपदेश असे

रसायन देविके श्री रसायन देविके ॥ १ ॥

विज्ञानाची एकच भाषा

विज्ञानाच्या दाही दिशा

नकोत सीमा विज्ञानाच्या

जैव रसायन मीलना

दे ध्यास हा मतिवर्धिने

रसायन देविके श्री रसायन देविके ॥ २ ॥

नको प्रदूषित भूजलवायु

विपुल अन्न अन् उदंड आयु

रोग नको अन् नको त्रुटीही

अखंड ऊर्जा निर्मळ पाणी

अक्षर हरिते जगन्माते

रसायन देविके श्री रसायन देविके ॥ ३ ॥

मूर्तीवंत तू कीर्तिरक्षिके

जगन्मान्य तू महन्मंगले

अभियंती अन् रत्नपारिखे

शतप्रणाम हो तुज नायिके

नवदितीजे तव चेतना ही

रसायन देविके श्री रसायन देविके ॥ ४ ॥

गणगणश्री तणतणश्री

जैवशिवश्री सृष्टिधारिके

रसायन देविके श्री रसायन देविके

वंदू गणनायिके श्री रसायन देविके ॥ ५ ॥

कवी : प्राध्यापक डॉ. जी. डी. यादव

दि. २७ फेब्रुवारी २०१२

कुलगुरु, रसायन तंत्रज्ञान संस्था

(प्रथम दीक्षांत समारंभ दिनी प्रकाशित.

दिनांक ६ मार्च, २०१२)

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INSTITUTE OF CHEMICAL TECHNOLOGY, MUMBAI

Mumbai, Bhubaneswar, Jharsuguda

Deemed to be University under Section 3 of UGC Act 1956

Elite Status and Centre of Excellence - Govt. of Maharashtra

TEQIP Phase - III Funded, From The Top Category

I Institute (MHRD/UGC), NAAC A++, CGPA 3.77/4.00

Nathalal Parekh Marg, Matunga, Mumbai - 400 019, India

Tel: +91-22-33611111/2222, Fax: +91-22-33611020

Website: [www.ictmumbai.edu.in](http://www.ictmumbai.edu.in)



Annual Day 2019 , March 19  
Chief Guest :Dr. M.P. Poonia, Vice Chairman,  
All India Council for Technical Education  
Delhi , Shri Aneel Murarka, Managing  
Director, Mirachem Industries Ltd.



**ISCMA Award function – 22 January, 2020** Chief Guest – Mr. Adille J. Sumariwalla, Vice-President of Indian Olympic Association ▼



▼ Foundation Day – October 10, 2019 Chief Guest - Professor Bhushan Patwardhan, Vice-Chairman, University Grants Commission.

Dr. R. Vinu, Department of Chemical Engineering, Indian Institute of Technology Madras delivered Alkyl Amines – ICT Foundation Day Young Scientist Award Lecture ►



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