

Placement Brochure



Department of Chemical Engineering



A MESSAGE FROM THE **HOD**

The Department of Chemical Engineering at IIT Kanpur ranks among the best in the nation and commands a very high level of respect both nationally and internationally. Our department has been built over the years by faculty members, who have always been exceptionally hard-working, highly dedicated to research, and committed to providing cutting-edge knowledge and rigorous training to their students. We carry out research in core areas such as Fluid Mechanics, Thermodynamics, Separation Processes, and Controls as well as interdisciplinary areas such as Nano Sciences and Technology, Biosciences, Soft Matter Physics, Advanced Materials, and High-Performance computing. The academic environment in our department is highly vibrant that nurtures creativity. Our students get to grow in an intellectually stimulating environment where the emphasis is not on competition but individual excellence. They continue to excel long after they graduate and distinguish themselves in both academia and industry, both within the country and abroad.



Animangsu Ghatak
Professor and Head
Dept. of Chemical Engineering
IIT Kanpur

About US

The Department of Chemical Engineering at IIT Kanpur is ranked among the nation's top schools in Chemical Engineering. Aside from excellence in fundamental research, the department has made significant contributions to the chemical industry through its expertise in chemical process engineering, simulation, optimization and control, polymers, interfacial phenomena, and separations. Experimental research in the department is supported by **state-of-the-art facilities** which include **Scanning Tunnelling** and **Atomic Force Microscopes, Ellipsometer, Rheometers, Optical Profilometer**, etc.



IIT Kanpur was chosen by the Department of Science and Technology (DST) as one among the five places in India to have an operational state-of-the-art Nano-technology centre, which is located in the Department of Chemical Engineering. Under the auspices of the FIST scheme of DST, several new facilities have been established. We take great pride in our alumni, among whom we have recipients of almost all major national and international recognitions: National Science Medal by the President of the United States of America, Membership of National Academy of Science (USA), National Academy of Engineering (USA), National Medal of Technology and Innovation (USA), Infosys prize, Shantiswaroop Bhatnagar prize, TWAS prize and many more.

Student Demographics

B. Tech

- 78 Students
- 4 Year Programme
- Admission through JEE
- Basic Engineering + Departmental Courses
- Undergraduate Projects

M.Tech MS-R

- 50 Students
- 2 Year Programme
- Admission through GATE
- Compulsory Departmental Courses
- MTech Thesis 1.5 Years

B.Tech-M.Tech. Dual

- 19 Students
- 5 Year Programme
- Admission through JEE
- Basic Engineering + Departmental Courses
- MTech Thesis 1.5 Years

PhD

- Admission through written test and interview
- Compulsory Departmental Courses
- Ph.D Thesis work

In addition, the Unit Operations, Process Control & Design Labs and other course projects involving various tools, like MATLAB, COMSOL, ASPEN PLUS, HYSYS and FLUENT, equip the student with sufficient practical skills.

Laboratory Courses

- ✓ Chemical Process Simulation
- ✓ Unit Operation and Process Control
- ✓ Chemical Engineering Design

Relevant Courses

Specialization Courses

- ✓ Petroleum Refinery Engineering
- ✓ Computer Aided Process Control
- ✓ Molecular Modelling & Simulation
- ✓ Principles of Heterogeneous Catalysis
- ✓ The Structure and Rheology of Complex Fluids
- ✓ Process Engineering & Optimization
- ✓ Chemical Plant Safety & Hazard Assessment
- ✓ Process Engineering Principles
- ✓ Reaction Engineering of Polymers
- ✓ Advanced Fluid Mechanics
- ✓ Environmental Pollution: Control & Modelling
- ✓ Mechanics of Soft Matter
- ✓ Statistical Thermodynamics
- ✓ Nano-sciences & Micro-fluids
- ✓ Modelling & Simulation of Separation Processes
- ✓ Hydrodynamic Stability

Basic Courses

- ✓ Thermodynamics
- ✓ Fluid Mechanics & its Applications
- ✓ Heat Transfer & its Applications
- ✓ Mass Transfer & its Applications
- ✓ Chemical Process Industries
- ✓ Process Dynamics and Control
- ✓ Chemical Reaction Engineering
- ✓ Biochemical Engineering
- ✓ Transport Phenomenon
- ✓ Applied Numerical Methods in Engg.



Department Activities



Chemineers society :

- A student body aiming to **promote intellectual and cultural activities** of students of the Department of Chemical Engineering, IIT Kanpur
- Helps students identify campus resources, and **foster harmonious relationship among students, faculty, staff and administrators.**
- The activities are aimed at **grooming student personality** so as to make them responsible citizens dedicated to the development of the nation as a whole.



SimuTech group:

- Conducts **workshops** and offers **projects** related to the field of simulation in Chemical Engineering to the students
- Workshops introduce simulation and modelling software like **COMSOL, AspenPlus, AspenDynamics** and **AspenHYSYS** to the students
- The group has also offered various projects to students on topics like **Computational fluid dynamics, Computational heat transfer, Modelling of chemical reactors** and **Plant control and design.**

Dr. Goutam Deo

(Catalysis and reaction engineering, Supported metal catalysts, Reaction kinetics)

Dr. Animangsu Ghatak

(Adhesion and friction on soft interfaces, Fracture of soft thin sheets, Bio-inspired approaches for design of engineering materials)

Dr. Raghvendra Singh

(Stochastic Processes, Systems Biology, Signal transduction, Biophysics)

Dr. Naveen Tiwari

(Hydrodynamic stability, Transport Phenomena, Dynamics of thin liquid films, Droplet dynamics, Flow through porous media)

Dr. Nitin Kaistha

(Chemical process modelling, Simulation and control, Economic plantwide control, Reactive distillation modelling)

Dr. Yogesh M. Joshi

(Structure and dynamics of colloidal glasses & gels, Soft matter, Rheology of complex fluids, Polymer nanocomposites)

Dr. Nishith Verma

(Adsorption, synthesis of nanoparticles including adsorbents and catalyst, carbon-based electrodes, Environmental Pollution Control)

Dr. Siddhartha Panda

(Chemical sensors, Flexible electronics, Functional sensing materials, Nano fabrication, Transport and reactions)

Dr. Anurag Tripathi

(Modelling and simulation of complex fluids, Rheology and segregation of granular mixtures, Wet granular flows)

Dr. Vishal Agarwal

(Catalysis, Biofuels, Gas-surface and Liquid surface interactions, Nucleation, Molecular simulation and quantum chemical calculations)

Dr. Jayant K. Singh

(Nanotribology, Selective adsorption & separation, Hydrogen storage & fuel cell development, Thermophysical behavior of complex fluids, Nanoscale crystallization)

Dr. Himanshu Sharma

(Flow through porous media, Enhanced oil recovery, Colloids & interfaces, Nanotechnology)

Dr. Raj Ganesh Pala

(Electrochemical and Reaction Engineering, Sustainable Energy and Environment, Electro Catalysis, Fuel Cells and Photoelectrochemical Systems)

Dr. V. Shankar

(Hydrodynamic stability, Viscoelastic and non-Newtonian flows, Colloidal and Interfacial phenomena, Electrohydrodynamics)

Dr. Indranil Saha Dalal

(Modelling of simulation of the dynamics of polymer chains in flow, Mesoscale and molecular dynamics simulation, Flow induced effects in biomolecules)

Dr. Ashutosh Sharma

(Confined soft materials, Nanomechanics, meso patterning, Colloids and interfaces, Wetting and adhesion, Functional interfaces)

Dr. Sri Sivakumar

(Lanthanide-doped nanodevices, Multifunctional nanomaterials for drug delivery & bio-imaging, Nanocatalysts, Nanomaterials for solar hydrogen generation, Photonic crystals)

Dr. Rahul Mangal

(Active Matter, Polymer Nano-Composites, Soft Matter, Rheology of Composites & Complex Fluids)

Dr. Raju Kumar Gupta

(Photocatalysis, Green synthesis of nanomaterials, Perovskite solar cells, High dielectric constant materials, surface chemistry, supercapacitors)

Dr. Pankaj A. Apte

(Statistical Mechanics, Interfacial Thermodynamics, Phase equilibria and nucleation)

Dr. Dipin S. Pillai

(Stability theory, Reduced-Order Modelling, Non-Linear Dynamics, Thin Films Electrohydrodynamics, Multiphase Flows)

Dr. Sanjeev Garg

(Bioinformatics, Bioremediation, RNA interference, Computer-aided product and process design)

Dr. Harshwardhan H. Katkar

(Soft matter, Biophysics, Nanopores, Bacterial Assemblies, Multiscale modelling, Bottom-up coarse-graining)

Collaborators and Sponsors


Sterlite


UNITED PHOSPHORUS LIMITED


इसरो ISRO

 Shell


TATA
TATA CONSULTANCY SERVICES


हिन्दुस्तान पेट्रोलियम
HP

Dr.Reddy's 


TRANS-INTEGRA™
HEALTH CARE


SAINT-GOBAIN


आयोगिक अनुसंधान परिषद भारत
CSIR INDIA


Hindustan Unilever Limited


TEPL


सत्यमेव जयते
Department of Sciences
& Technology
Government of India


सत्यमेव जयते

Department of Biotechnology
Ministry of Science & Technology
Government of India

State of the Art Facilities

- ✓ Rheometer
- ✓ Polarized Optical Microscope
- ✓ Micro-PIV
- ✓ Atomic Force Microscope
- ✓ Optical Profilometer
- ✓ Real time PCR
- ✓ Confocal laser scanning microscope
- ✓ Atomic Absorption Spectroscopy
- ✓ Dispersive Raman Spectrometer
- ✓ Nano Imprint Lithography
- ✓ 3D Bioprinter
- ✓ ICP-Mass Spectrometer
- ✓ Surface Area Analyzer
- ✓ Universal Testing Machine

and many more..

Past Recruiters



Distinguished Alumni



Dr. Ashutosh Sharma
Secretary to Government of India
Department of Science and
Technology



Dr. K. Vijay Raghavan
Secretary, Department of
Biotechnology
Former Director NCBS



Nifash Balsara
Senior Faculty Scientist
Professor of Chemical Engg.
University of California Berkeley



Neera Tandon
Principal Co-owner and
Member, Telecom Ventures
Board



Dr. Kamal Kishore Sharma
Managing Director, Lupin
Laboratories Ltd., Mumbai



Mahesh Bihari Lal
Ex. Chairman and M.D.
HPCL



Dr. Jagjeet Singh Bindra
Director - Edison International
Ex-President, Chevron



Dr. Ashok Misra
Ex. Director, IIT Mumbai



Dr. Rakesh K. Jain
Professor, Tumour Biology,
Harvard Medical School



Dr. Rakesh Agarwal
Professor of Chemical
Engineering, Purdue University



Muktesh Pant
Chief Marketing Officer,
Yum! Brands



Dr. Rathin Datta
Founder & Past Chairman,
Vertec Bio-Solvents



Viney P. Aneja
Air Quality Professor, North
Carolina State University



Umang Gupta
Chairman and CEO, Keynote
Systems



Suril Singhal
President, Chemical System
Technologies



Sudhakar Keshvan
Chairman and Chief
Executive officer, ICF
International



Dr. Arup Kr. Chakraborty
Professor Biological
Engineering, MIT, USA



Dr. S.P.S. Chauhan
Senior Program Director,
Battelle, USA

...and many more

Contact Details



Dr. Animangsu Ghatak
Professor and Head
Dept. of Chemical Engineering
IIT Kanpur
Email: aghatak@iitk.ac.in
Phone: 0512-2597146



Dr. Himanshu Sharma
Faculty Coordinator
Dept. of Chemical Engineering
IIT Kanpur
Email: sharmah@iitk.ac.in
Phone: 0512-2592073



Rakshit Kajala
Placement Coordinator
Dept. of Chemical Engineering
IIT Kanpur
Email: rkajala@iitk.ac.in
Phone: +91-8003496709



Debanjan Dutta
Placement Coordinator
Dept. of Chemical Engineering
IIT Kanpur
Email: deb20@iitk.ac.in
Phone: +91-8981243540



Sagar Chaudhari
Placement Coordinator
Dept. of Chemical Engineering
IIT Kanpur
Email: sagarkpgms20@iitk.ac.in
Phone: +91- 8652830453



Student Placement Office
109, Outreach Building,
IIT Kanpur-208016 (UP)
+91-512-2594433/34



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<http://spo.iitk.ac.in/>



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