DEPARTMENT OF CHEMICAL ENGINEERING

The Department of Chemical Engineering aims to become a premier center for Chemical Engineering education and research. Specializing in areas such as Process Engineering, Chemical Reaction Engineering, Biochemical Engineering, Materials Science, and Environmental Engineering, the department provides top-tier training for students from India and around the world. The state-of-the-art Process Engineering laboratory is among the best-equipped in the country, offering extensive research and testing opportunities with commitment to excellence in teaching, research, and innovation, preparing our students for successful careers in academia and industry.

9:53
Faculty Student Ratio

1:5
Gender Strength Ratio

Courses	Strength
B.Tech.	47
M.Tech.	25
M.Sc.	34

2010
Department of Chemical Engineering was established

DOMAINS OF STUDY

- Chemical Process Calculations
- Fluid and Particle Mechanics
- Heat Transfer
- Mass Transfer
- Chemical Thermodynamics
- Chemical Kinetics and Reaction Engineering
- Process Dynamics and Control
- Separation Processes
- Process Design and Economics
- Process Modelling and Simulation
- Advanced Transport Phenomena
- Bioprocess Technology
- Energy Technology
- Nanotechnology

LABORATORIES - UG, PG

- Process Engineering Lab.
- Fluid Mechanics Lab.
- Heat Transfer Lab.
- Process Control Lab.
- Materials Characterization Lab.
- Computational and Simulation Lab.
- Reaction Engineering Lab.
- Energy Technology Lab.

PLACEMENTS & INTERNSHIPS

35+ LPA
Max. CTC

13+ LPA
Median CTC

47k/ mo
Median Stipend during Internship

Core Companies

Reliance Industries Limited
VEOLIA
HALLIBURTON
JSW
Baker Hughes
GAIL (India) Limited
vedanta
ESSAR OIL & GAS
ADITYA BIRLA GROUP

updated data from 23-24'

Meet our Head of Department

DR. ADITYA KUMAR

(Associate Professor)

Jan 2024 - Present

Doctor of Philosophy (Ph.D.) in Materials Science and Engineering from University of Siegen, Germany 12'
Master of Technology in Chemical Engineering from IIT Kanpur 06'
Bachelor of Technology in Chemical Engineering from NIT Warangal 04'

Citations 1987
H-index 31

Primary Areas of Research
Nanotechnology, Surface Science, Interfacial Science, Nanotribology, Coatings

Foreign University Experience
- Doctor of Philosophy (Ph.D.) (Materials Science and Engineering) - University of Siegen, Germany

Achievements
- Young Researcher Award 2023 by World Leadership Academy.
- Awardee of Duo-India fellowship program 2022.
- Invitee lecture in Indo-German workshop on waste to wealth, CSIR-AMPRI Bhopal, India, Feb 2019.
- Inder Mohan Thapar Award 2020 (Life-time researcher award).
- Top 2% of scientist worldwide 2023.
- Invitee lecture in Bioinspired Nanotribology and interfacial science, VIT Vellore, June 2020 .

Ongoing & Completed Departmental Research

- Industrial scale up of biodegradable, non-polymer super-hydrophobic jute fabric exhibiting excellent water repellency & stiffness for shopping/hand bag products; Role - Principle investigator; Funding Agency - National Jute Board, Government of India
- Conservation of the metallic cultural heritage assets by waterborne superhydrophobic and antidust coatings; Role - Principle investigator; Funding Agency - SHRI, Department of Science and Technology, Government of India
- Development of cheap and durable anti-fingerprint and anti-reflective coatings for electronic and optical display panels; Role - Principle investigator; Funding Agency - SERB, Department of Science and Technology, Government of India
- Technical evaluation of REME-PHI Technology for the air-conditioned coaches of the Indian railways and other public air-conditioned transportation; Role - Principle investigator; Funding Agency – Oxive Air LLP & Zeco Aircon Ltd.
- Synthesis rheological and structural properties of thermo responsive hydrogels, under FRS(57)/2013-2014/CHE, December 2013 to July 2018, Rs. 4.00 lakhs.
- Co-PI CMPDI Ltd. High Ash gasification and associated upstream and downstream processes (Coal to Chemicals- CTC), 2160.721 Lakhs, Ongoing
- PI DST (SERB) Development of an efficient Pd-Cu bimetallic catalyst for the catalytic CO2 hydrogenation for Methanol production, 22.15 Lakhs, Completed
- PI Faculty Research Scheme (FRS), ISM Dhanbad CO2 reforming of CH4 over modified Ni based catalysts for synthesis gas production 11.15 Completed
- Project title & Role: Design and Development of a Novel Continuous Photocatalytic Reactor for Wastewater Treatment & PI Funding Agency & amount: Faculty Research Scheme (FRS) of IIT(ISM) & 5.80 lakhs
- Project title & Role: Synthesis and Characterization of Nanocomposite Materials for Photocatalytic Applications & PI Funding Agency & amount: TEQIP-II & 2.00 lakhs
- A project entitled “Leaching of lead from electric arc furnace steel dust using Ultrasound” under FRS for an amount of Rs. 6.50 lakhs

Active Student Run Societies

A Chemical Engineering Society (ChES) IIT (ISM) Dhanbad

- **Aim** : To advance the science and profession of Chemical engineering and enhance student welfare
- O**bjective : T**o impart additional practical knowledge to the Chemical Engineering students, provide more and enhanced technical knowledge, develop leadership skills, teamwork, and all such qualities which will play a major role in their career

ChES has been keen and active in organizing various workshops , competitions and guest lectures by professors and industrial experts having renowned backgrounds for the students of IIT(ISM) Dhanbad.

Alumni Network

- KARANJITH SHARMA - Manager at Arcelormittal Nippon Steel India
- BIMAL B DASH - General manager (operations) @Gchemics.
- ANIRUDDHA MITRA - Scientist, CSIR NIO .
- SHAILABH VERMA- Head of Growth@Pickl.AI
- KUMAR GAURAV - Deputy Manager (Forest & Environment) Odisha Mining Corporation Ltd (State PSU)

Foreign University and industrial Collaborations

HARVARD

THE UNIVERSITY OF CALIFORNIA BERKELEY 1868

Technical University of Munich

GAIL (India) Limited