



Centre for Career Development,  
Indian Institute of Technology Guwahati

**Placement  
Brochure**

**Class of 2024**

**Department  
of Chemical  
Engineering**



## Message from Head of the Department

"The Department of Chemical Engineering at IIT Guwahati has an excellent infrastructure for all round development of its students. The laboratories are well equipped with modern cutting edge instruments for research and development. The department has access to over ten thousand online journals. Students graduating from this institute are motivated, bright and very eager to perform after they graduate. Faculty members and the PhD students have been able to demonstrate substantial intrinsic merit of their research, also some research-activities have excellent connection to Industrial problems. We are well recognized for our research and teaching facilities in India and abroad."

"Our students have continuously been able to display excellent potential and skill in their fields of academics and extra-curricular activities. Many of the students have visited foreign universities of repute to widen their knowledge and experience. The alumni are showing excellence in their respective fields. It is worth mentioning that recruiters from varied fields have responded very enthusiastically and rated our students very high. Their abilities are well attested by the excellent reports we receive from the recruiting companies."

"With this I would like to cordially invite all prospective employers to visit our institute, our department and to participate in the on- campus placement process."







# About The Institute



## Indian Institute of Technology, Guwahati

Established in 1994, as an 'Institute of National Importance', IIT Guwahati has grown into being a preferred destination for people passionate about learning and innovation. IIT Guwahati has been ranked among the Top 100 Young Universities in the world by the Times Higher Education, one of the two Universities from BRICS nations. IIT Guwahati has several factors contributing to how in a short span of time it has established itself as one of the best institutes of its kind in the country. The programmes and courses that are offered at IIT Guwahati are perpetually evolving to adapt to the ever changing global requirements and along with the diversity of the fields of study, this has helped the institute become one of the nation's nerve centres for research and development, and technical education. The faculty ensure that the students of the campus are ready to face the challenges of the professional world by providing them with a sound conceptual understanding of their respective disciplines. The institute also offers a plethora of opportunities to students for their holistic development, through the excellent facilities that it has for sports and general extracurricular activities.

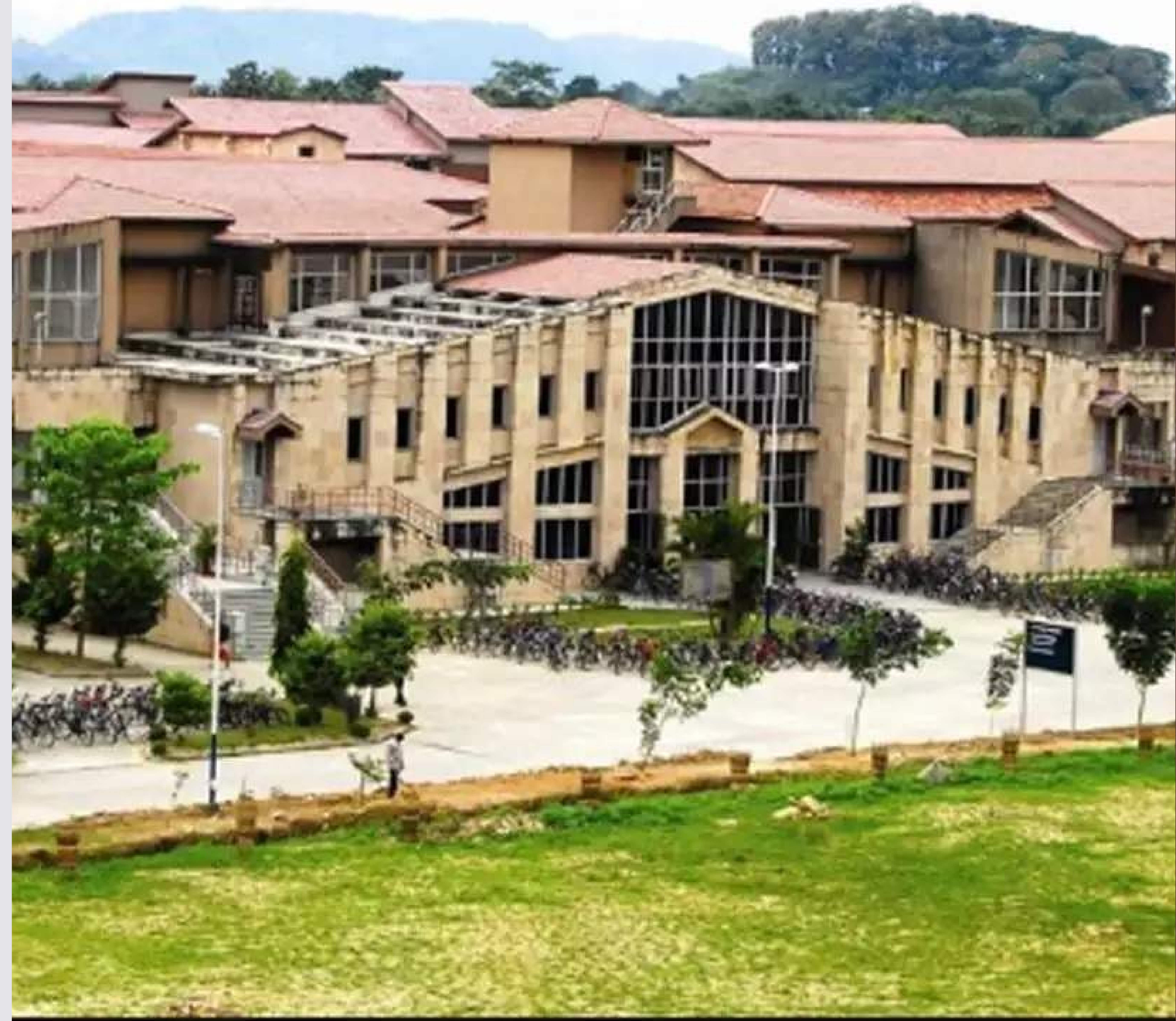


# About The Department

The Department of Chemical Engineering started functioning in 2002. In the academic arena the Department offers Bachelor's, Master's and Doctoral programmes in Chemical Engineering. The faculty members in the Department are experts in traditional and in the interdisciplinary domains ranging from nanotechnology, bio-engineering, complex fluids to molecular simulations.

The total number of students graduating from the Bachelor's, Master's and Doctoral programmes in the last three years (2020-2022) are 188, 172 and 67 respectively. The alumni from the Department are placed at very respectable positions in the academia and industry. The Department hosts a number of undergraduate laboratories, namely: fluid mechanics, mechanical operations, process control, mass transfer, heat transfer, and reaction engineering. The students are given hands on training in the computational domains through the software used in chemical engineering domain such as Accelrys, Amber 12.0, ASPEN Plus, Mathematica, ChemCAD, ANSYS Fluent, COMSOL Multiphysics and Gaussian.

The department also houses the Centre for Sustainable Polymers (Sus-Pol), which is financed by the Ministry of Chemicals and Fertilizers, Government of India. Department of Chemical Engineering at Indian Institute of Technology, Guwahati started functioning in 2002. The department is a major academic host offering B. Tech., M. Tech., and Ph. D. in Chemical Engineering. The Master of Technology (M.Tech.) degree course with specialisation in "Petroleum Refinery Engineering" was started in 2004. viz. Currently, department offers four specialisations in the M.Tech. degree course (since 2011), viz. (1) Petroleum Science and Technology (2) Materials Science and Technology (3) Computer Aided Process Engineering and (4) International Joint M.Tech Degree in Food Science and Technology. The faculty members of the department are working in traditional Chemical Engineering and interdisciplinary domains ranging from petroleum engineering, nanotechnology, bio-engineering, complex fluids to molecular simulations. The department is endowed with young, vibrant and dynamic faculty well qualified to impart high quality teaching and research in Chemical Engineering.





# PROGRAMMES OFFERED

## Undergraduate

Bachelor of Technology (B.Tech.) degree in Chemical Engineering follows an eight semester system. The curriculum is designed to impart fundamental principles as well as recent advancements in Chemical Engineering. The syllabi include Humanities, Computer, Mechanical, and Chemical engineering sciences.

LINK : <https://iitg.ac.in/acad/CourseStructure/Btech2018/CL.htm>

## Postgraduate

The Master of Technology (M.Tech) degree course with specialisation in "Petroleum Refinery Engineering" was started in 2004. Currently, the department offers four specialisations in the M.Tech. degree course (since 2011), viz.

Petroleum Science and Technology([Coure Structure Link](#))

Materials Science and Technology([Coure Structure Link](#))

Computer Aided Process Engineering([Coure Struture Link](#))

International Joint M.Tech Degree in Food Science and Technology

to the candidates selected through GATE (Graduate Aptitude Test in Engineering). The masters degree courses follow a four-semester system. In the first two semesters, the postgraduate students are exposed to advanced common courses of Chemical Engineering as well as specialization related courses. The curriculum involves one year of thesis work (semesters III and IV) which includes fundamental and applied research.

LINKS : [https://iitg.ac.in/chemeng/docs/cl\\_mtech\\_2020\\_09\\_07\\_2021.pdf](https://iitg.ac.in/chemeng/docs/cl_mtech_2020_09_07_2021.pdf) <https://www.iitg.ac.in/chemeng/pdf/ec4126de6da7b1b02c1b2131603e4e62-03-53-42.pdf> [https://www.iitg.ac.in/chemeng/imdfst/assets/docs/IMDFST\\_InformationBrochure.pdf](https://www.iitg.ac.in/chemeng/imdfst/assets/docs/IMDFST_InformationBrochure.pdf)

## Doctoral Degree

The doctoral programme requires a minimum necessity of taking four course work in the first two semesters. After the completion of course work, the doctoral students have to appear for the Ph.D. comprehensive examination. The research scholar is further allowed to carry out his/ her research work after successful completion of the Ph.D. comprehensive examination. The maximum duration for the doctoral programme is about five years.

LINK : [https://www.iitg.ac.in/acad/academic\\_prog.php#Doctoral](https://www.iitg.ac.in/acad/academic_prog.php#Doctoral)



# CHEMICAL ENGINEERING AND FOOD SCIENCES & TECHNOLOGY (UG, PG & PHD)

## KEY COURSES OFFERED

- Chemical Process Calculations
- Fluid Mechanics
- Solid Fluid Operations
- Chemical Engineering Thermodynamics (incl. Advanced level)
- Mass Transfer
- Heat Transfer
- Chemical Reaction Engineering (incl. Advanced level)
- Process Equipment Design
- Process Control and Instrumentation (incl. Advanced level)
- Process Engineering and Economics
- Computer Aided Numerical Methods (incl. Advanced level)
- Characterization of Materials
- Fundamentals of Material Science and Engineering
- Smart Materials
- Transport Phenomena (incl. Advanced level)
- Fluidization Engineering
- Catalysts and Adsorbents
- Multiphase Flow
- Applied Rheology
- Artificial Intelligence and Machine Learning in Chemical Engineering
- Polymer Science and Technology
- Petroleum Refinery Engineering
- Petroleum Production Engineering
- Petroleum Reservoir Engineering
- Computational Fluid Dynamics
- Energy Resources
- Colloid and Interface Science
- Molecular Simulation
- Fundamentals of Micro Nano Fluids and Microfabrication
- Applied Statistics for Chemical Engineers
- Data Science for Chemical Engineers
- Advanced Clean Fuel Technologies
- Natural Gas Engineering
- Optimization Techniques
- Process Modelling and Simulation
- Advanced Food Processing
- Bioprocess Engineering
- Membranes
- Composite Materials

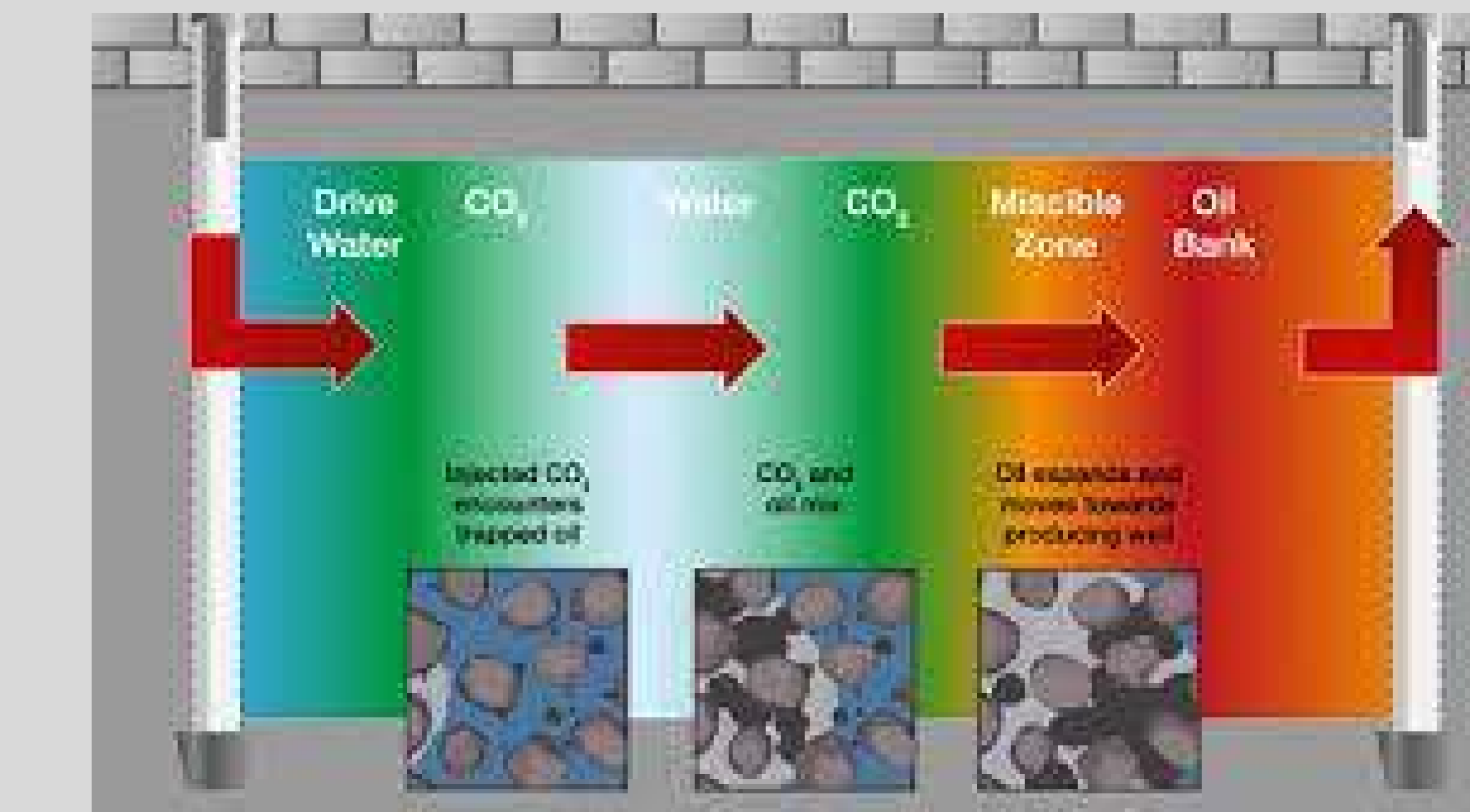
# AREAS OF RESEARCH



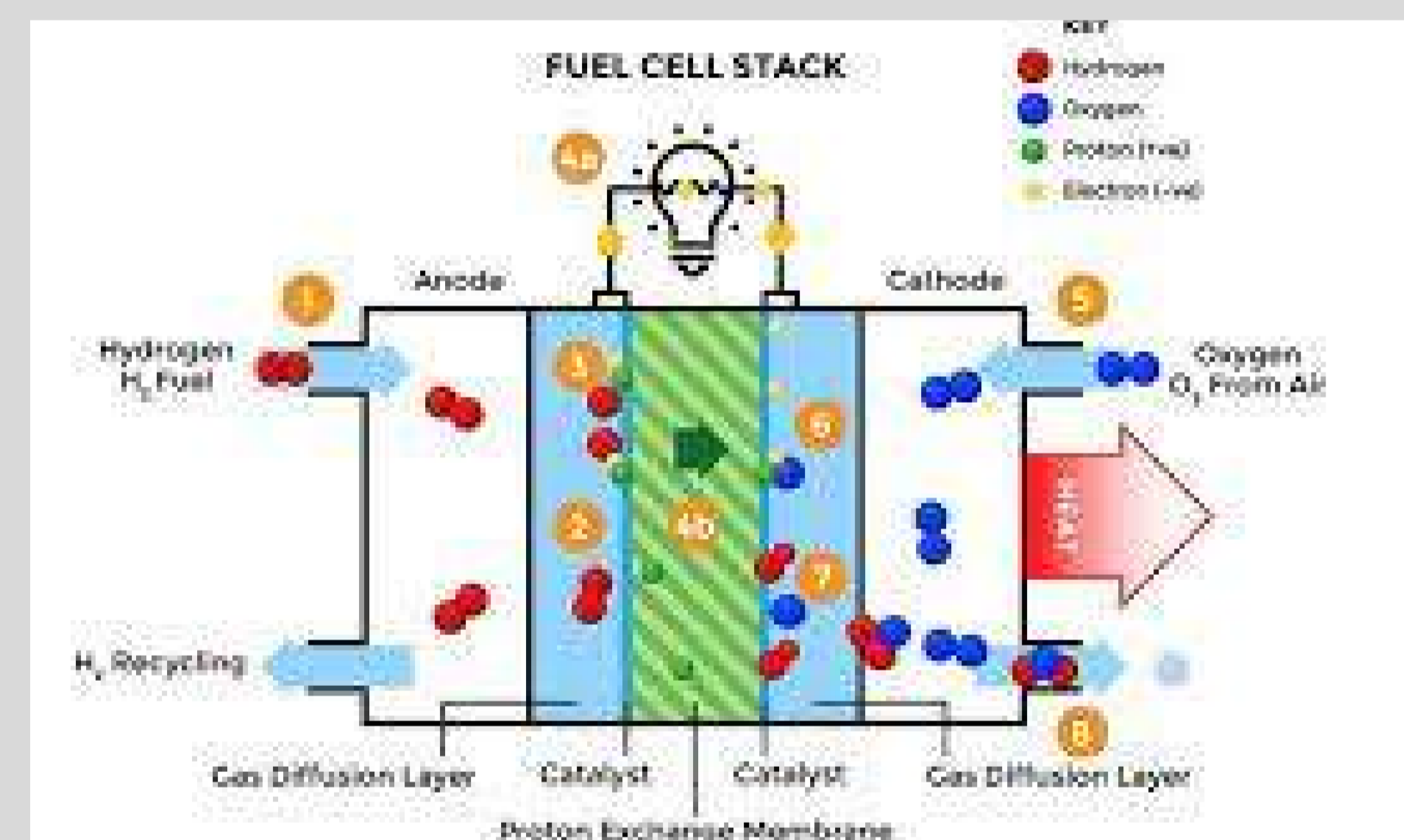
BIOFUELS



COMPLEX FLUIDS



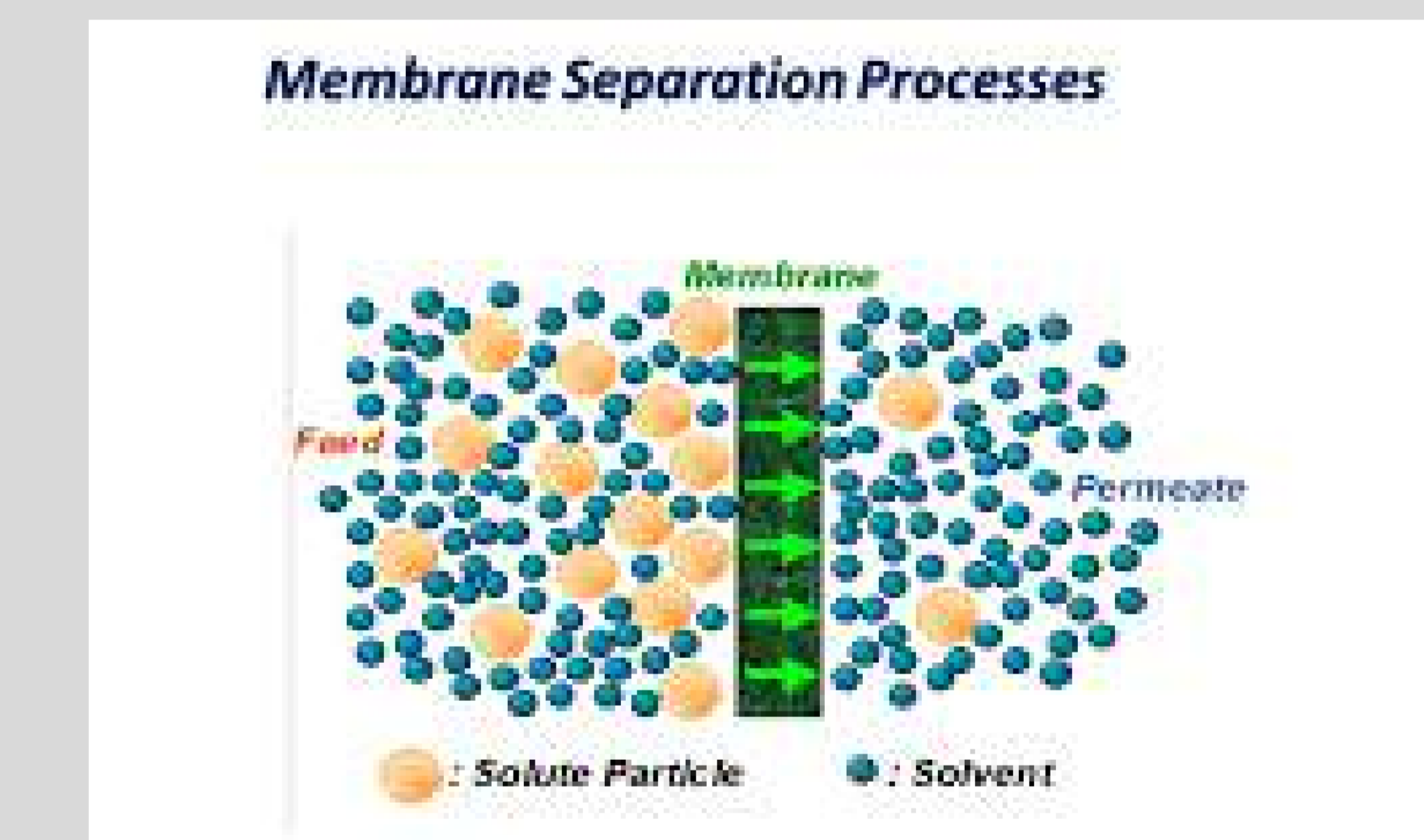
ENHANCED OIL RECOVERY



FUEL AND SOLAR CELLS



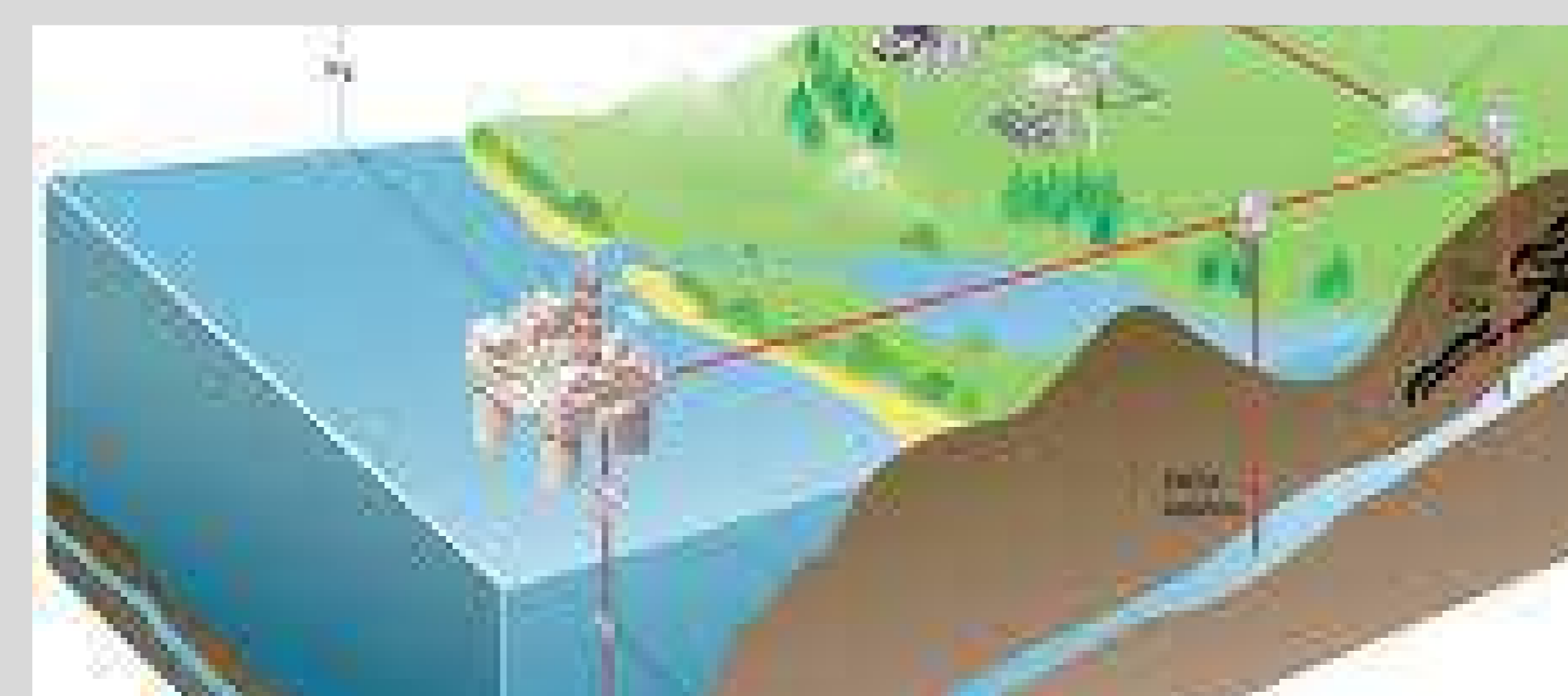
GREEN CHEMISTRY



MEMBRANE AND SEPARATION PROCESSES



FOOD SCIENCES AND TECHNOLOGY



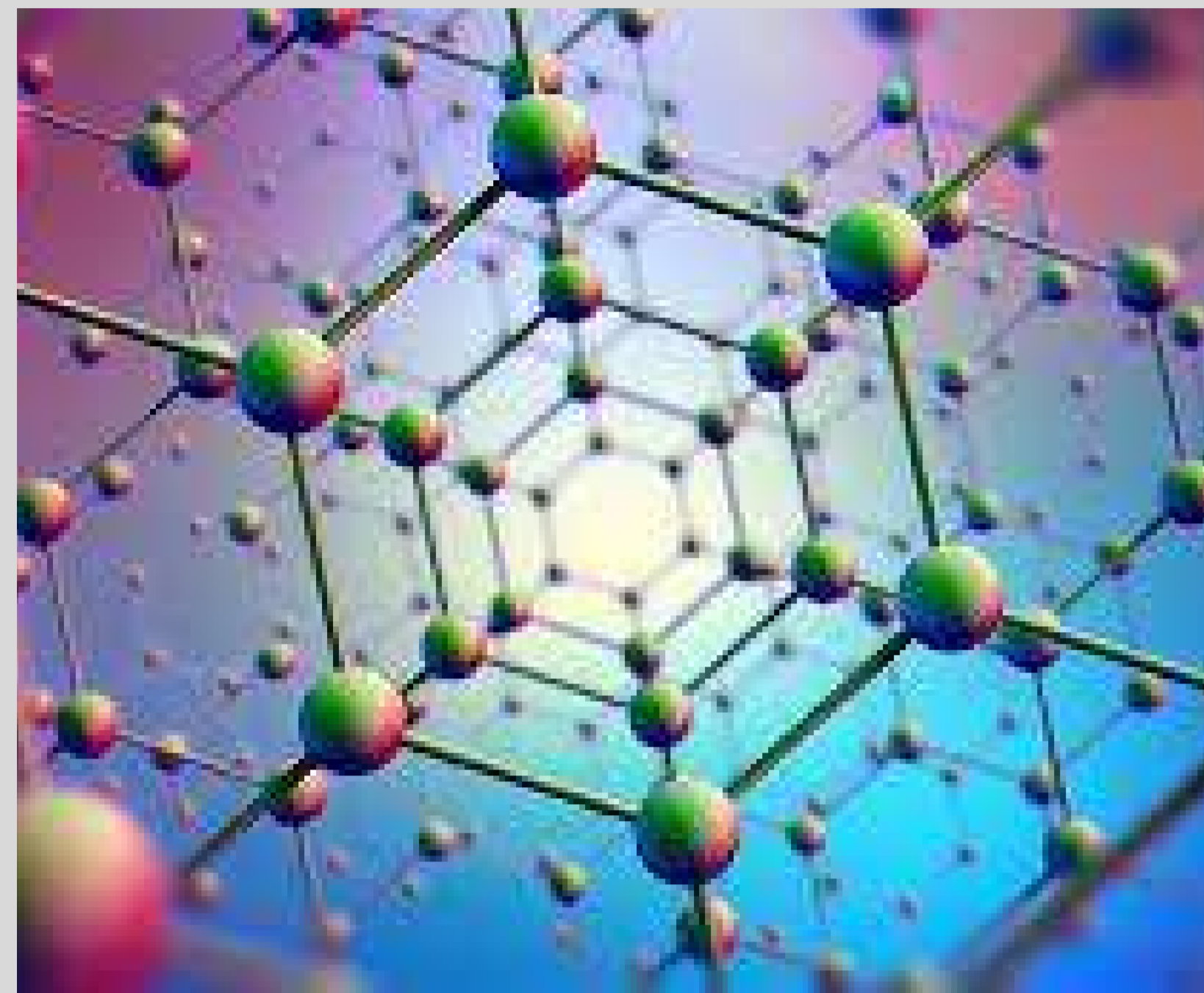
CCUS



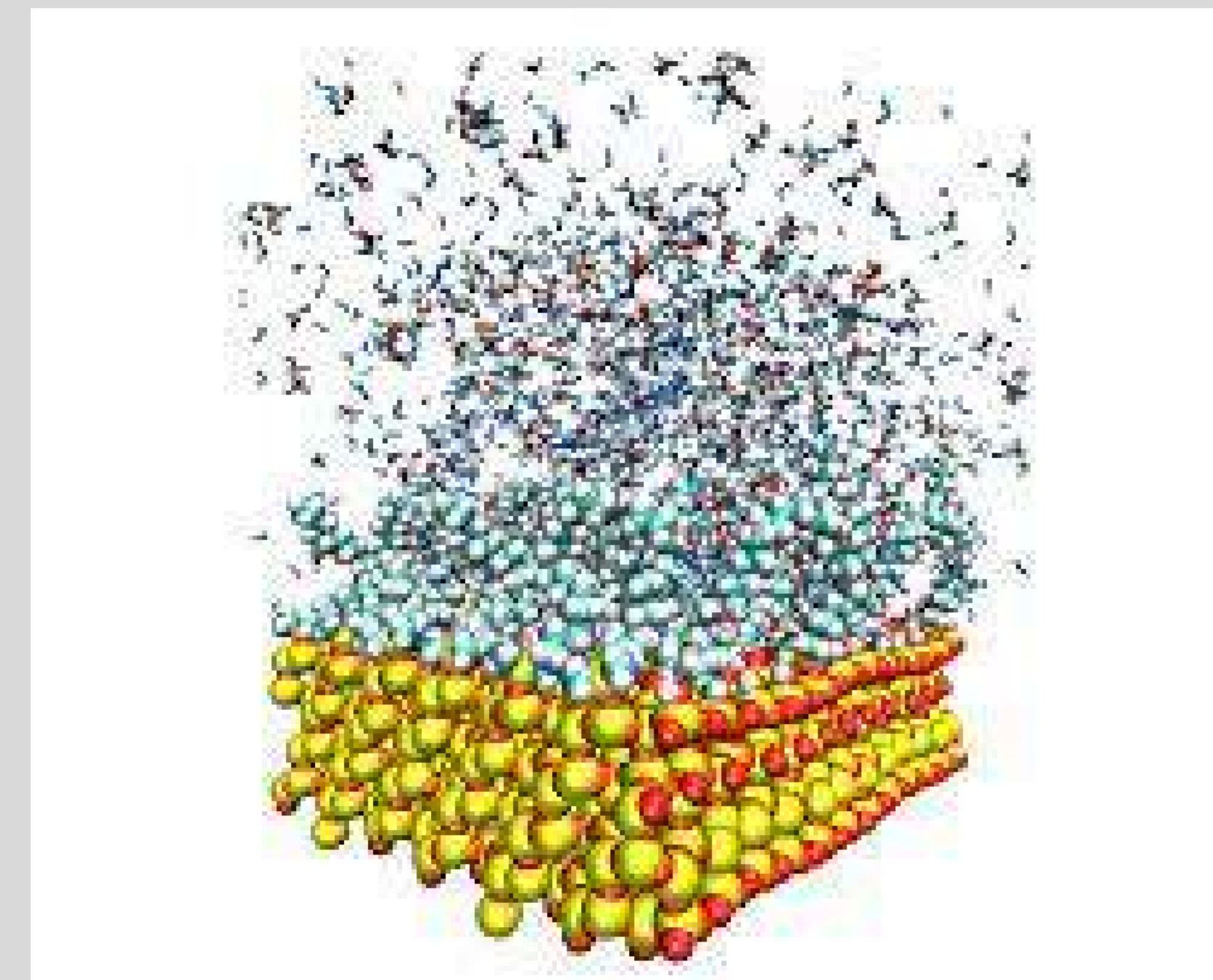
COMPUTATIONAL FLUID DYNAMICS



# AREAS OF RESEARCH ( CONTD.)



**NANOMATERIALS**



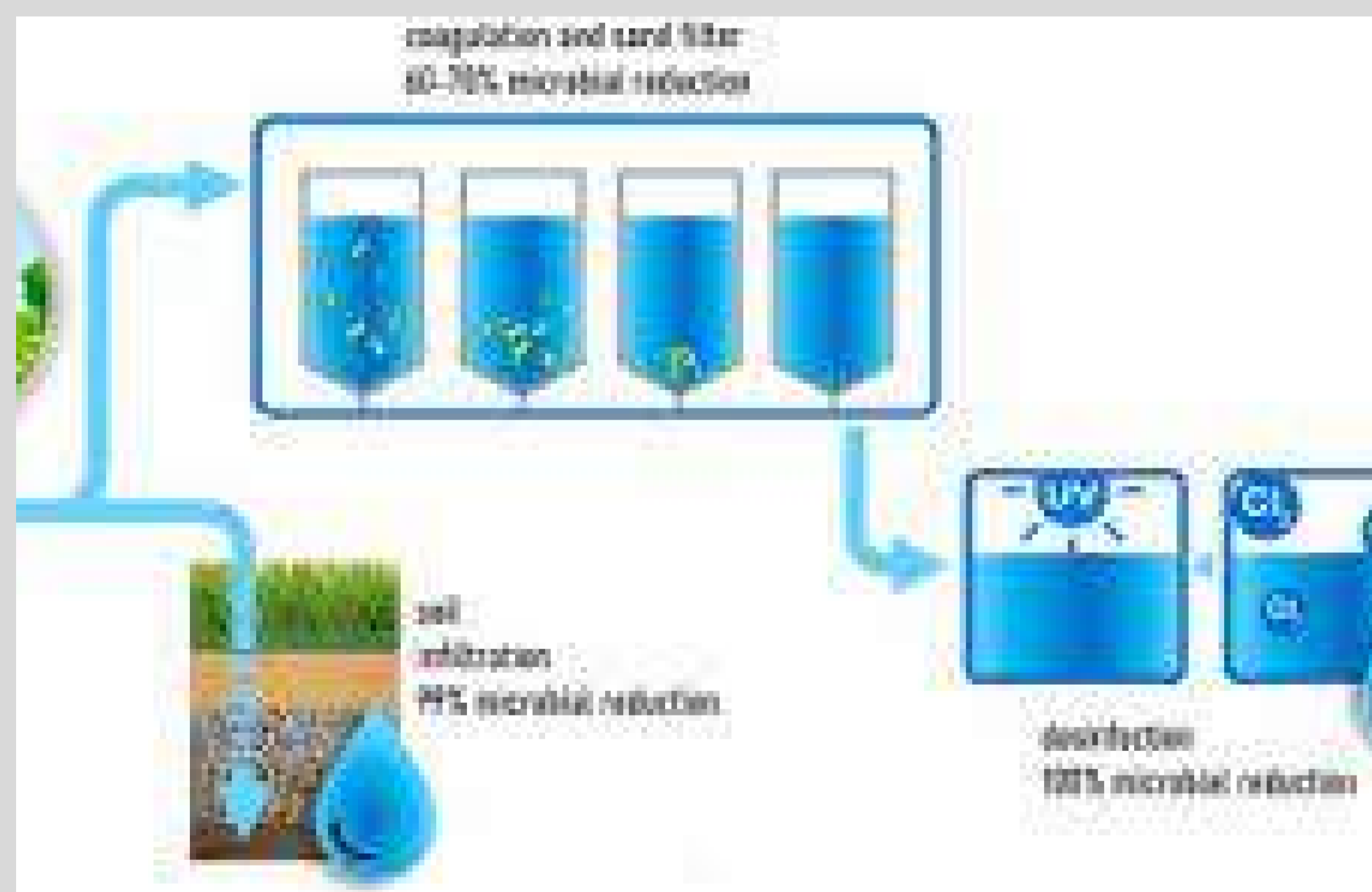
**MOLECULAR SIMULATIONS**



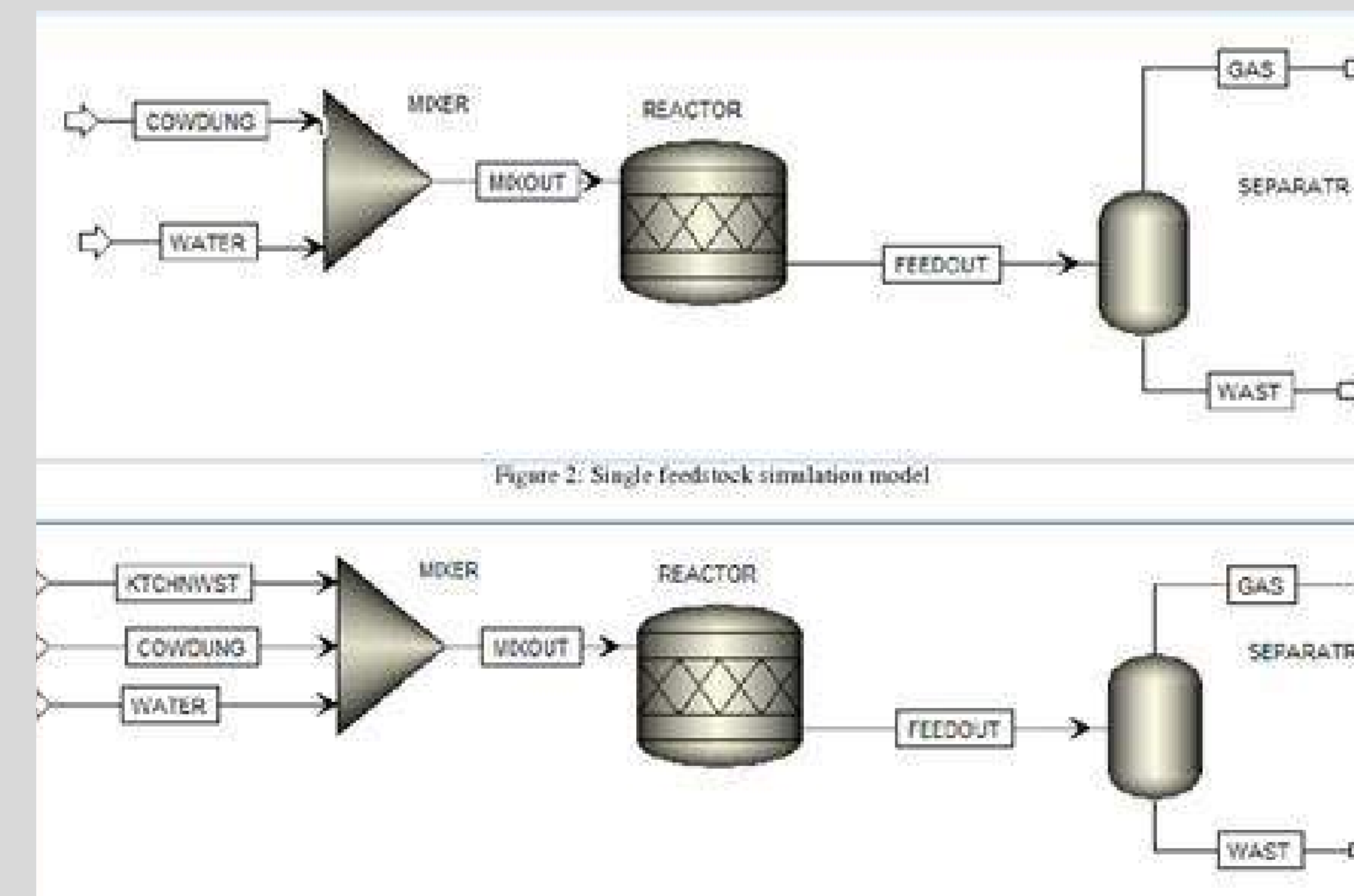
**WASTE MANAGEMENT**



**Process Control**



**WATER TREATMENT**



**Process Simulation**



**POLYMER SCIENCE AND TECHNOLOGY**



**MicroFluids**



# IMPACT OF OUR RESEARCH



THE ECONOMIC TIMES

IIT Guwahati develops new method to produce sugar substitute 'Xylitol' from sugarcane waste

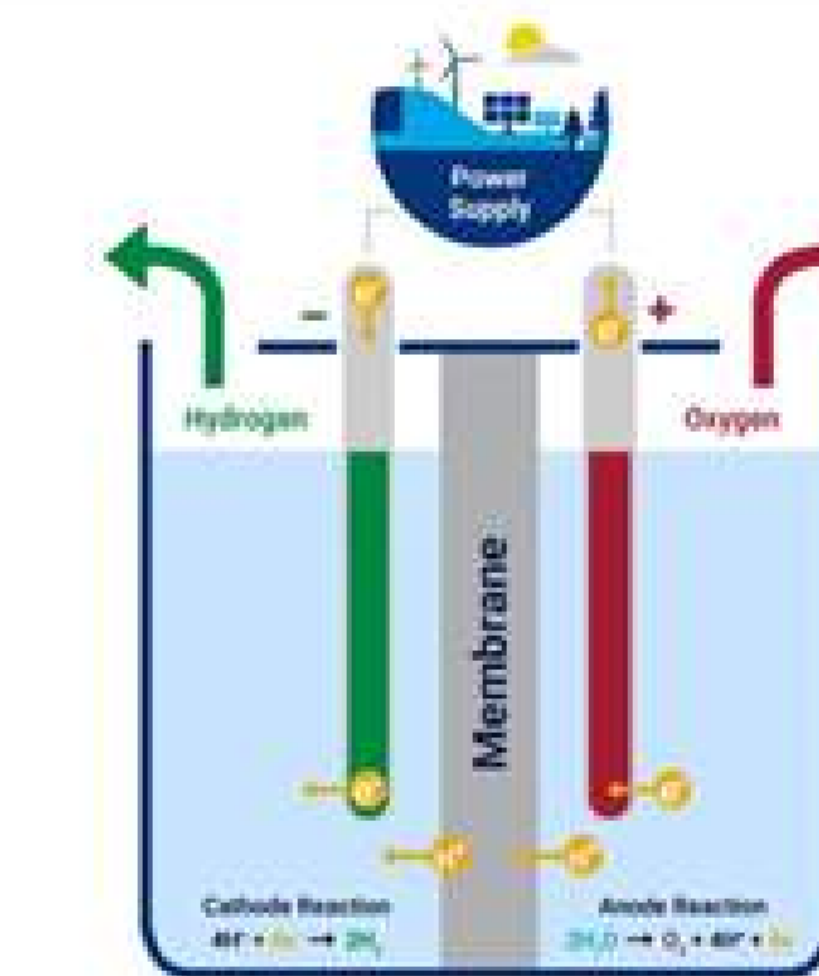


INDIA TODAY

IIT Guwahati, NTPC develop energy-efficient tech to capture carbon dioxide from power plants



IIT Guwahati Scientists Develop Biodegradable, Edible Coatings That Extends Shelf Life Of Fruits, Vegetables



Researchers at IIT Guwahati have developed a catalyst that can produce clean-burning hydrogen gas from wood alcohol



IIT Guwahati Develops Sustainable Microalgae Biorefinery Model



IIT-G develops device to create green energy from waste water



# IMPACT OF OUR RESEARCH (CONTD.)

INDIA TODAY **NE** Search Here...

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News / Assam / IIT Guwahati ranks among top universities in 14 subjects: QS World University Rankings

## IIT Guwahati ranks among top universities in 14 subjects: QS World University Rankings

The 2023 edition of the QS World University Rankings by Subject, released by QS Quacquarelli Symonds, named the world's best universities for the study of 54 academic disciplines.

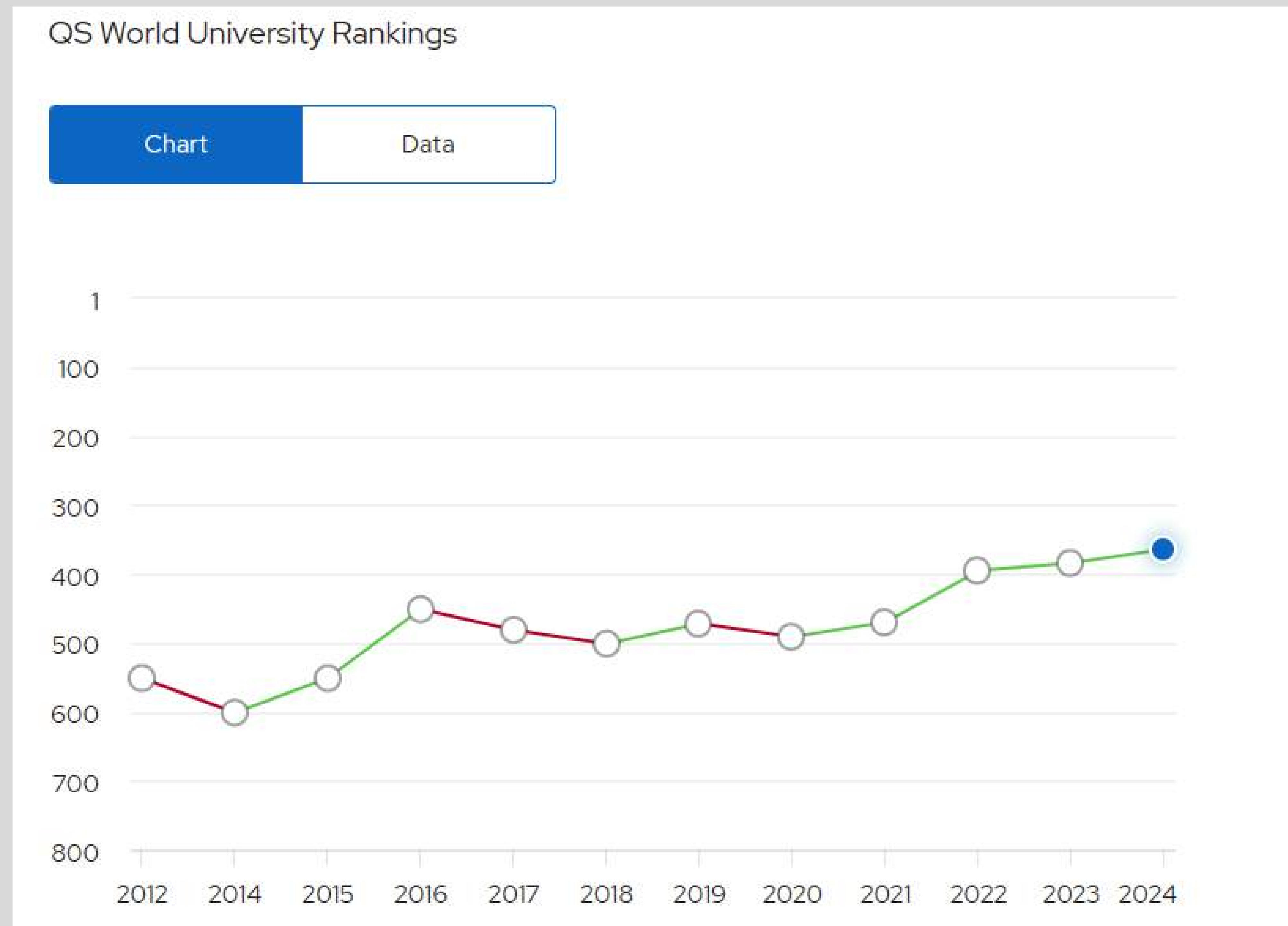
News / Education / News / IIT researchers find new method to produce sugar sub...

## IIT researchers find new method to produce sugar substitute from sugarcane waste

By [HT Education Desk](#), New Delhi

Aug 23, 2022 12:57 PM IST

Called 'Xylitol', this sugar substitute has potential anti diabetic effects and overcomes limitations like chemical methods for synthesis of sugar and time delays associated with conventional fermentation process, IIT Guwahati said.



## QS World Rankings 2023: IIT Guwahati ranks 2nd in petroleum engineering; Overall 8th domestically

Rankings & ratings

**RANKINGS**

Indian Institute of Technology Guwahati (IITG) is one of the top public universities in Guwahati, India. It is ranked #=364 in QS World University Rankings 2024.

#=364 QS World University Rankings	#301-350 QS WUR Ranking By Subject	#=124 Asian University Rankings	#16 Asian University Rankings
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QS World University Rankings

**QS TOP UNIVERSITIES**



# LABORATORIES

The department hosts state of the art facilities to conduct solid/ liquid/ gas phase analysis for guiding fundamental and applied chemical engineering research.

## UG and PG LABS

- Fluid Mechanics Lab
- Heat Transfer Lab
- Mass Transfer Lab
- Mechanical Operations Lab
- Petroleum Lab
- Process Control Lab
- Reaction Engineering Lab
- Thermodynamics Lab

## Research Labs

- Fuel & Energy Lab
- Meso-Scale Engineering & Soft Materials Lab
- Molecular Simulation & Interface Engineering Lab
- Reservoir Rock Fluid Interaction Lab
- Soft Matter Research Lab
- Transport Processes Lab
- Water Treatment Lab
- Advanced Materials , Separation Processes Lab
- Applied Multiphase Process Research Lab
- Bio-energy , Waste Management Lab
- Catalysis, Environment , Energy Research Lab
- CCUS Technology Lab
- Chemical Process Engineering Lab
- Corrosion , Materials Lab
- Flow Visualization Lab



# Facilities Available in Analytical Lab

- Atomic Absorption Spectrophotometer (AAS)
- BET Surface Area Analyzer
- Differential Scanning Calorimetry (DSC)
- Fourier Transform Infrared Spectroscopy (FTIR)
- Gas Chromatography–Mass Spectrometer (GC–MS)
- High Performance Liquid Chromatograph with RI & UV detector (HPLC)
- Laser Particle Size Analyzer (LPSA) Lyophilizer
- Mercury Porosimeter
- Rheometer
- Spinning Drop Tensiometer
- Thermo Gravimetric Analyzer (TGA)
- TOC Analyzer
- UV Visible Spectrophotometer
- It also boasts of a well built COMPUTER CENTRE with various latest licensed Softwares



# ACTIVITIES

## Frontiers in Chemical Engineering (A monthly webinar series)

- The department of Chemical Engineering at IIT Guwahati under the aegis of Azadi Ka Amrit Mahotsav organizes a series of monthly webinars named Frontiers in Chemical Engineering. As a part of this, several distinguished Chemical Engineers share their research and wisdom. It gives a brilliant opportunity for our students to listen to such luminaries and learn from them.

## IICChE-GRC (Indian Institute of Chemical Engineers, Guwahati Regional Centre)

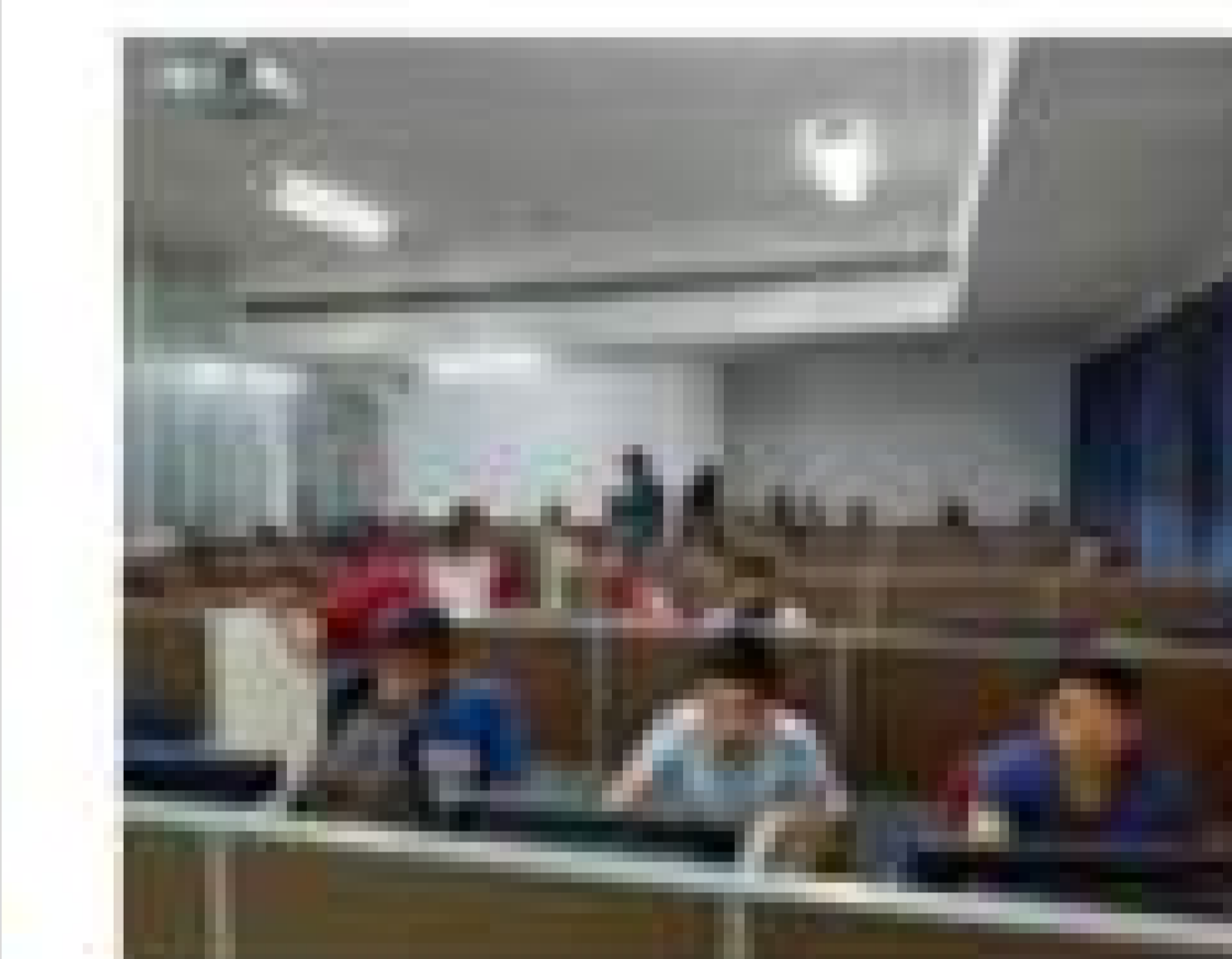
- It is one of the most active regional centres of IICChE, the HQ of which is located in the Department of Chemical Engineering, IIT Guwahati.
- GRC is involved in the benefit of chemical engineers in Northeastern states through organizing meetings, conferences and seminars, arranging workshops and plant visits, refresher courses and counselling sessions, promoting research, conferring awards and prizes, guiding chemical engineering students in their career planning, and initiating activities for the betterment of the social, technical and professional standards of their members.

## FIPI (Federation of Indian Petroleum Industry) – Student Chapter

- The FIPI Student Chapters were instituted to provide a common platform to academicians, students, technologists and management experts of the university/college for regular exchange of ideas in the field of energy with special reference to Oil & Gas and Petroleum Technology.

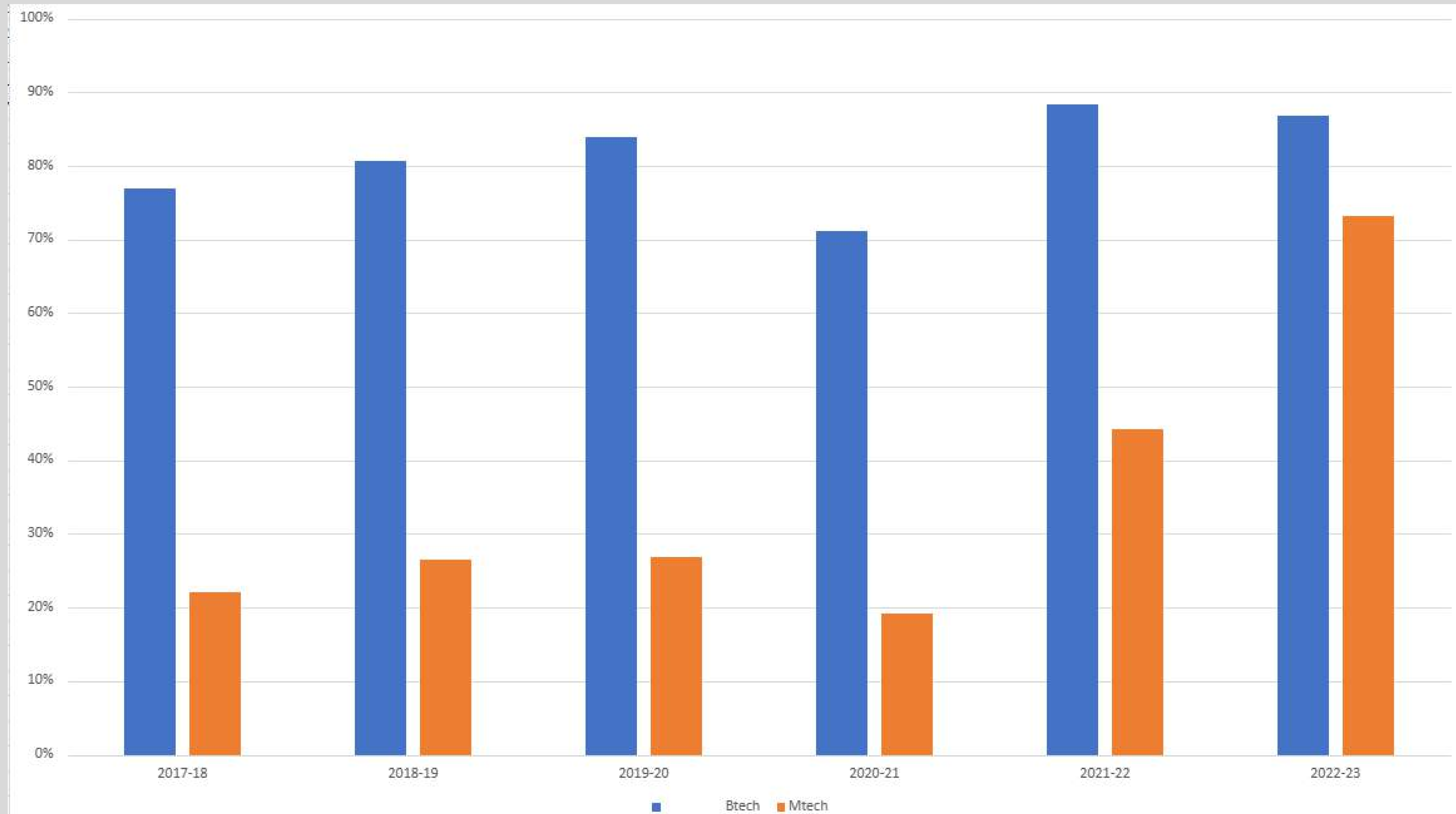
## SPE (Society of Petroleum Engineers) – Student Chapter

- IIT Guwahati SPE Student Chapter has organised Symposium on Energy Transition – Concepts, Opportunities and Challenges; Workshop on Applied Statistical Modeling and Data Analytics for Petroleum Engineering and related Applications; Invited talk on Energy Transition and its impact on petrochemical industries; Flow through porous medium Basics of modeling





# Placement Statistics of BTech and MTech for past Six years





# Past Recruiters'

**Schlumberger**



**Cipla**



**Honeywell**



हिन्दुस्तान पेट्रोलियम



Indian Oil Corporation Limited



**HALDOR TOPSOE**

**HALLIBURTON**



And Many more





**MANUFACTURING INDUSTRIES**

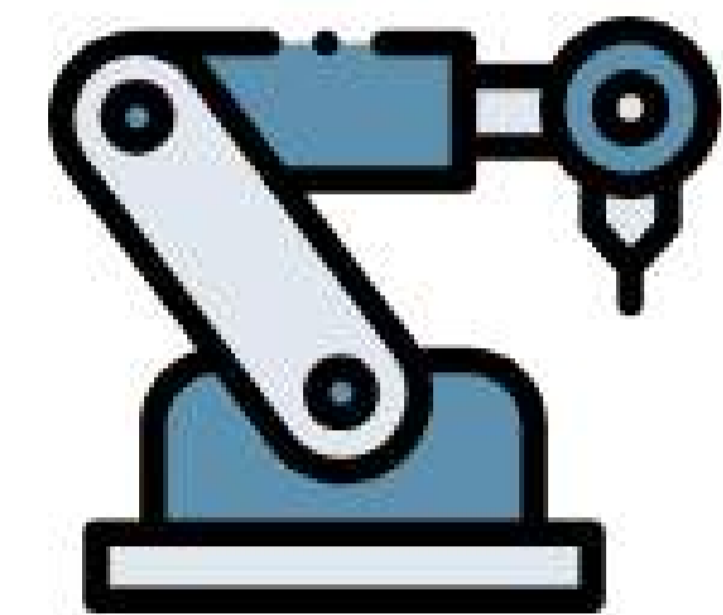


**CONSTRUCTION & MINING**

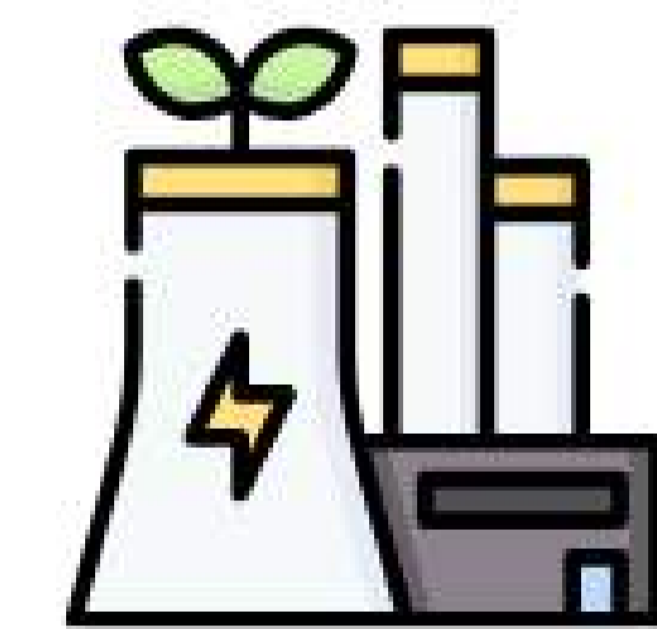


**BIOTECHNOLOGY**

**AUTOMATIVE INDUSTRIES**



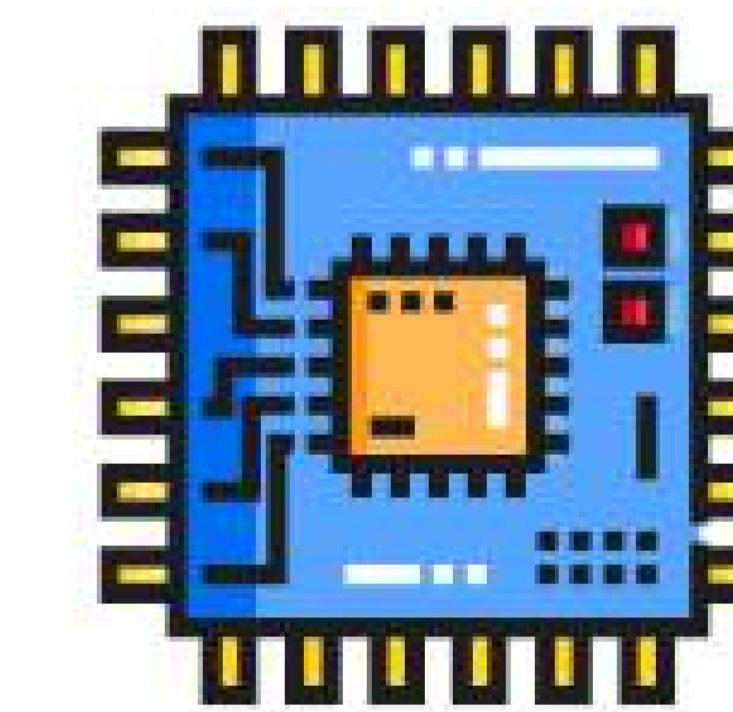
**PETROCHEMICALS**



**POWER PLANTS**

**WHERE WE FIT IN?**

**ELECTRONICS**



**OIL & GAS INDUSTRIES**

**CHEMICAL & PHARMACEUTICALS**



**FMCGS**



# CONTACT US



We are looking forward to have you on our Campus.

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Zainab Sariya

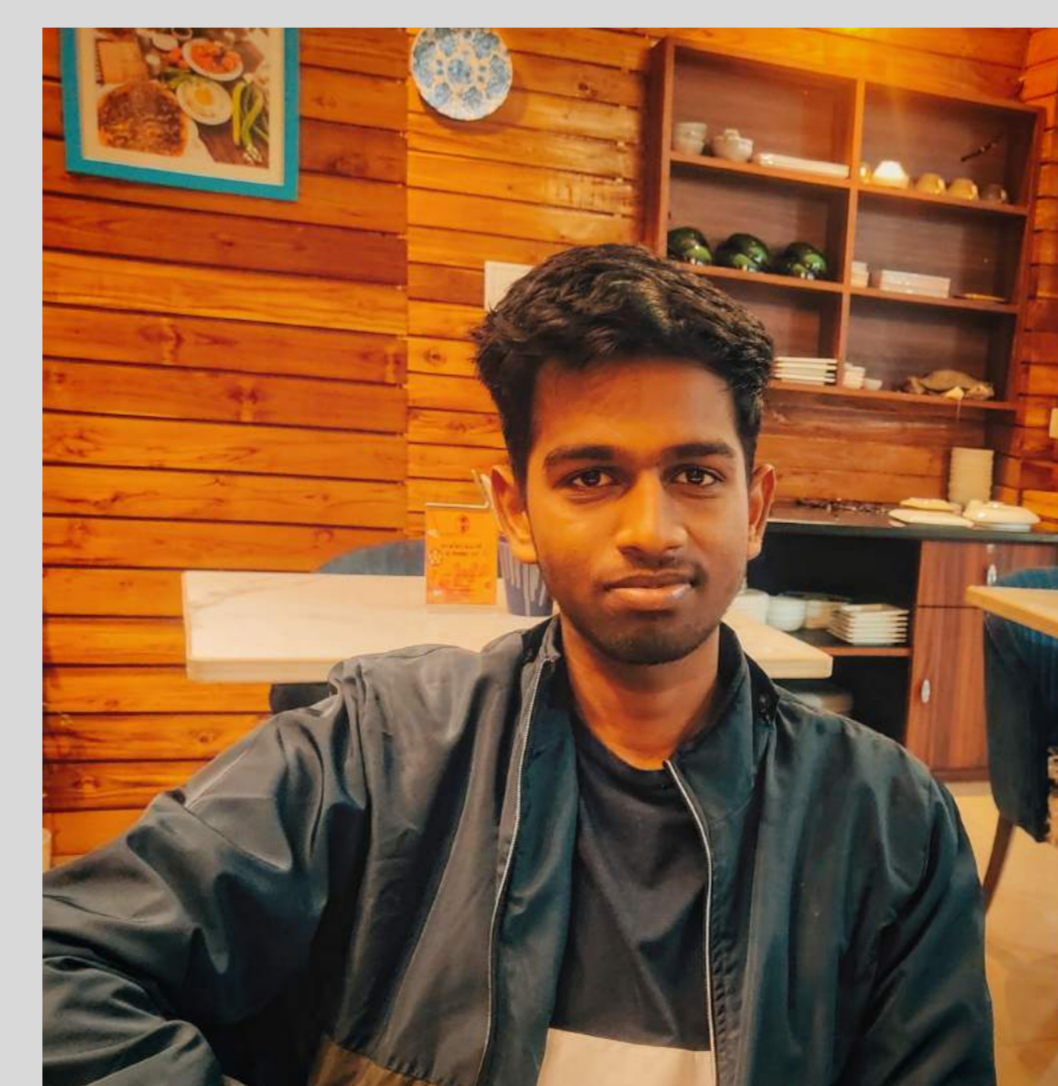
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