



Indian Institute Of
Technology, Guwahati

Centre For Career Development

Department of
Chemistry

Department Brochure



About the Institute

Since **1994**, when it was founded as the sixth Indian Institute of Technology, IIT Guwahati has become one of the world's most dynamic universities in technology, innovation, and research. The campus lies on a 285-hectare parcel of land on the northern bank of Brahmaputra 20km from the city centre. The curriculum and courses at IIT Guwahati are constantly changing to meet global needs and allow students to explore their interests.

The Institute offers **B.Tech, B.Des, MA, M.Des, M.Tech, MS(R), MBA, M.Sc, and Ph.D** programmes in 11 Departments, 9 Centres, and 5 Schools in all major engineering, science, and humanities areas. Our students can broaden their studies with a 'Minor' degree, open and interdepartmental electives, audit courses, and inter-disciplinary research.

The institute's state-of-the-art laboratories and **National Centres of Research** have made it a hub for research and technical education.

Apart from world-class research, the faculty prepares students for professional problems by teaching them their fields conceptually. It also helps students participate in worldwide projects, which helps them become pioneers and leaders.

IIT Guwahati has **MoUs (Memoranda of Understanding)** with top international institutes for semester-based student-exchange programmes and summer internships, boosting global integration and broadening our students' perspectives.

In their holidays, students intern in industrial, managerial, and research fields at top international corporations and research labs, contributing greatly. The institute provides excellent extracurricular opportunities to help students develop holistically.

About the Department



Chemistry is one of the eleven departments at the Indian Institute of Technology Guwahati. The Department started in 1995, covers all the major areas of Chemistry, viz. Inorganic, organic, physical and theoretical chemistry. In addition to teaching chemistry courses to the undergraduate students of B.Tech In Chemical Science and Technology (CST) & advanced chemistry courses to the students of M.Sc. and the research scholars Intending to do Ph.D. The department is actively engaged in research in the frontier areas of topical importance. The faculties are actively involved in sponsored research projects.



Department Faculty Advisor
**Dr. Samir Kumar
Sarkar**

Welcome to the Department of Chemistry at the Indian Institute of Technology (IITG)! As the Faculty Coordinator, I am thrilled to introduce you to our vibrant community of scholars, researchers, and students. Our department is dedicated to fostering a dynamic and vibrant environment where innovation, discovery, and learning thrive.

At the core of our mission is a commitment to academic excellence and scientific advancement. Our faculty members are not only leaders in their respective fields but also passionate educators who are dedicated to nurturing the next generation of chemists. We offer a wide array of courses that cover the fundamental principles of chemistry as well as cutting-edge research areas, ensuring our students are well-prepared for the challenges and opportunities that lie ahead.

Our department is equipped with state-of-the-art laboratories and facilities, providing our students with hands-on experience that is essential for a deep understanding of the subject. We encourage our students to engage in research projects, internships, and collaborative initiatives, all of which contribute to their growth as both scholars and professionals.

I am proud of the achievements of our students and faculty, and I am confident that the knowledge and skills gained here will empower our graduates to make significant contributions to society. Whether you are a prospective student, a current member of our department, or an alumni, I invite you to explore the opportunities our department has to offer and to join us in our pursuit of scientific excellence.

Thank you for your interest in the Department of Chemistry. Together, let's explore, innovate, and inspire.



**Prof. Aditya
Narayan Panda**

Greetings from the Department of Chemistry, IIT Guwahati.

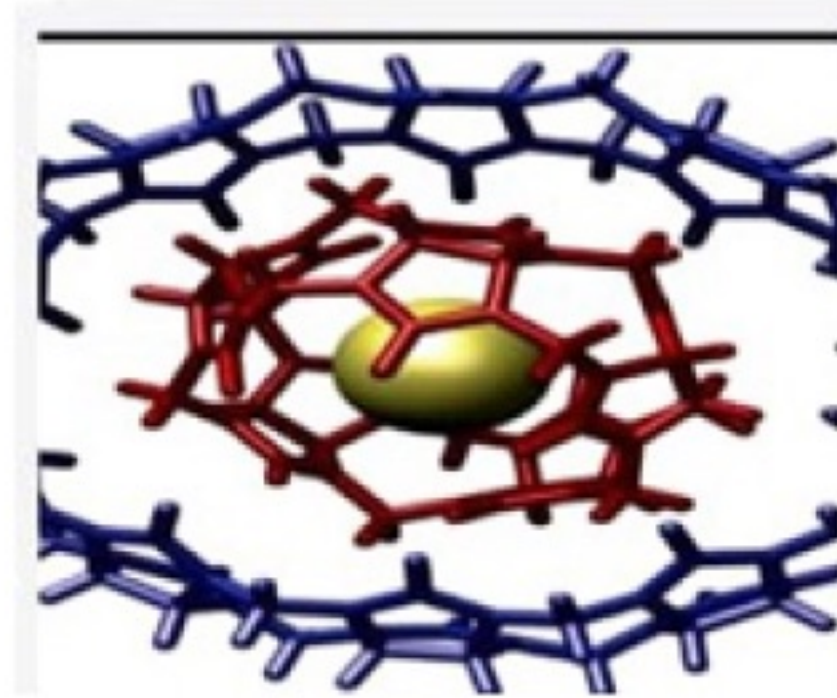
The Department of Chemistry at IIT Guwahati has been one of the preferred destinations for students aspiring to become scientists and technologists in various domains. The department from 1994 has attracted the finest of faculty members in various research areas, and these faculty members are the experts now in their domain getting laurels for their achievements in their respective fields. The department offers a four-year B.Tech. (B.Tech. In Chemical Science and Technology), two-year M.Sc. in Chemistry and Ph.D. programs. The M.Sc. program is our flagship Master's program. The students join the M.Sc. Program through the National-level IIT JAM examination. The two-year curriculum of M.Sc. In Chemistry trains the students in various areas of chemistry, including synthesis, technological aspects, and computations. It prepares them to be future experts in various fields.

With the above note, I warmly welcome all our partners and prospective employers to our campus to participate in the placement process and help our students to become professionals.

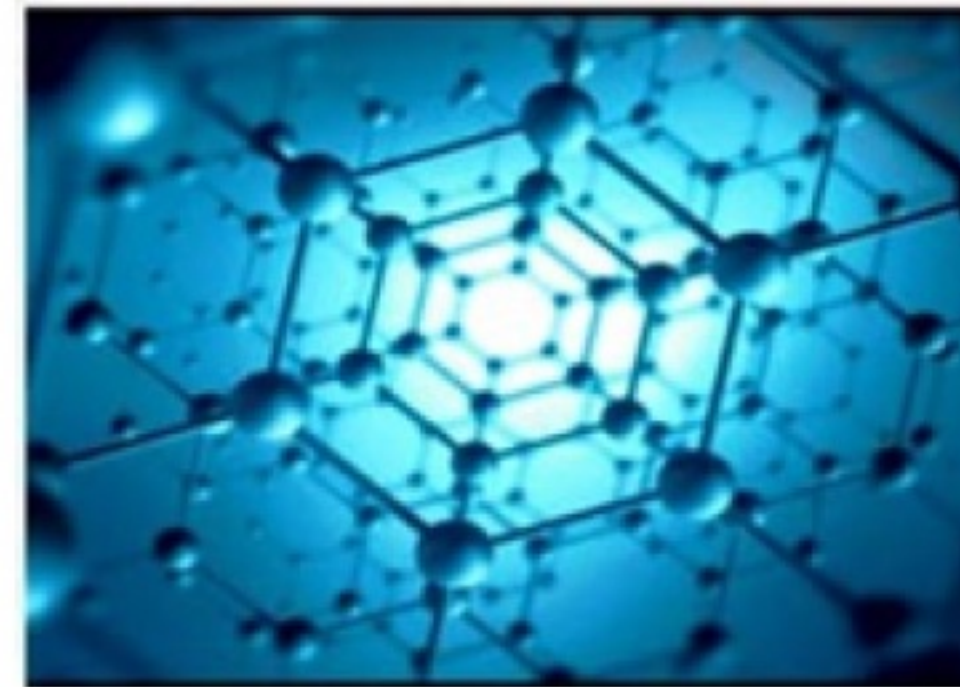
Prof. Aditya N. Panda

HoD, Chemistry

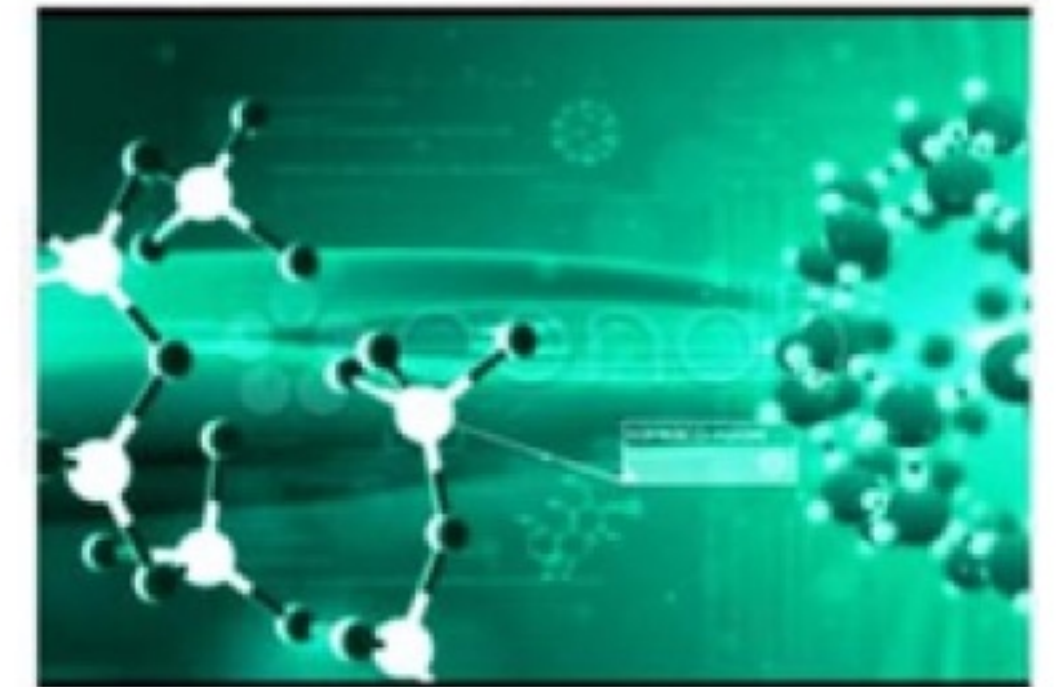
Area of interest



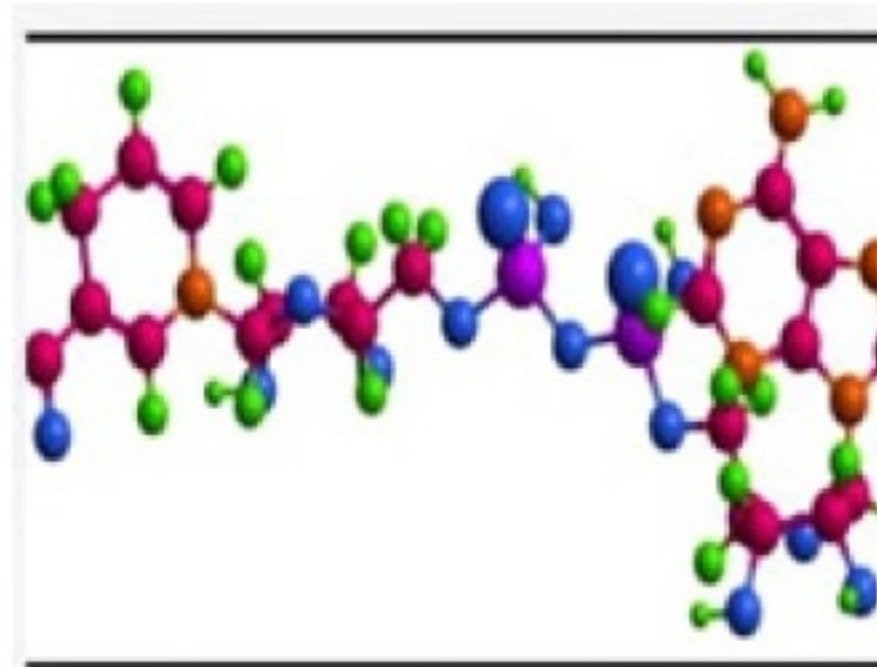
Supramolecular chemistry



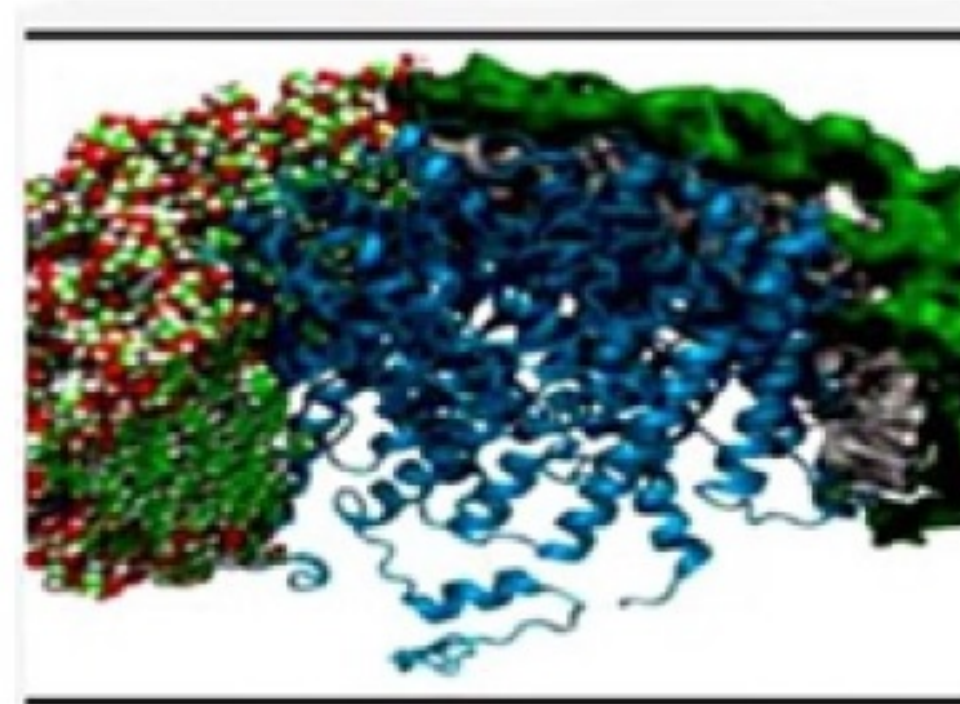
Nano Science and technology



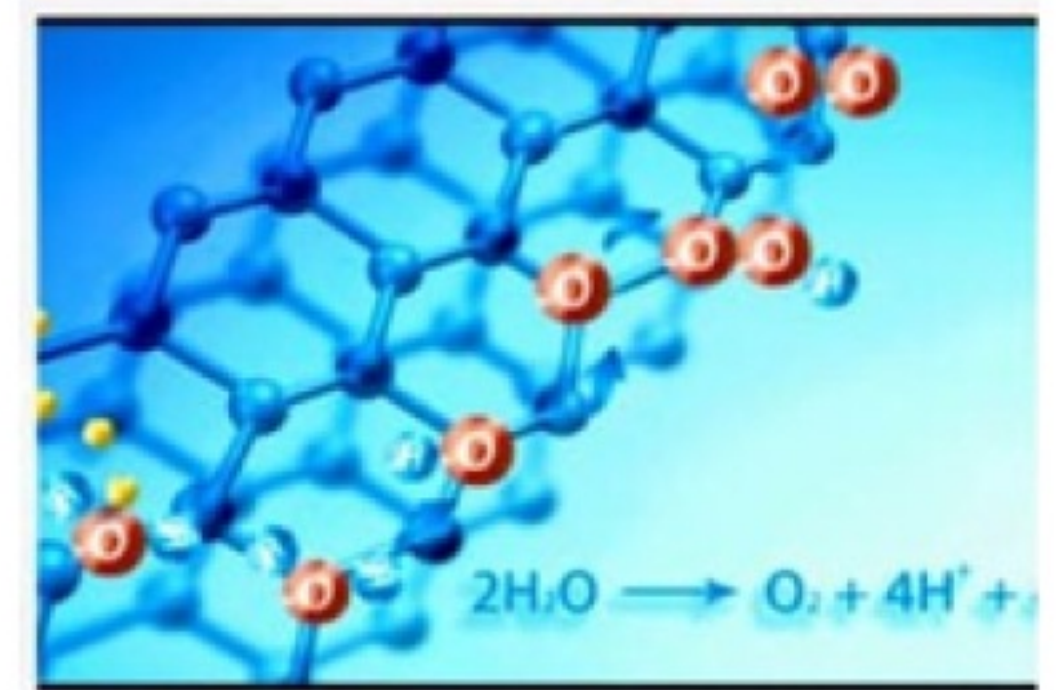
Bio organic chemistry



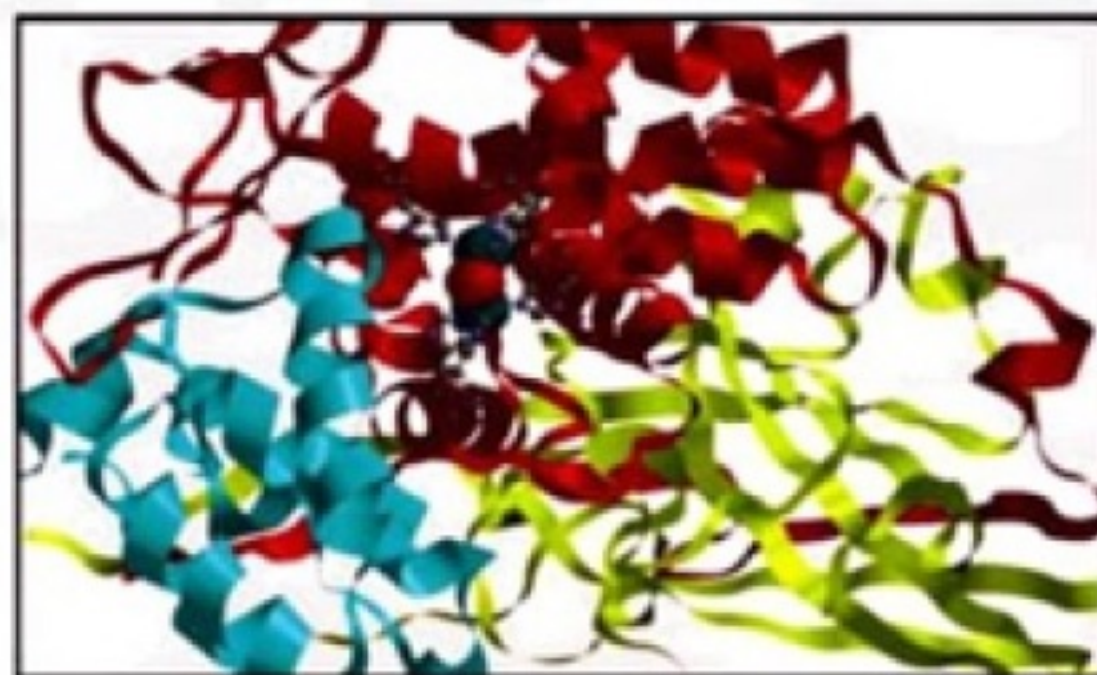
Polymer synthesis



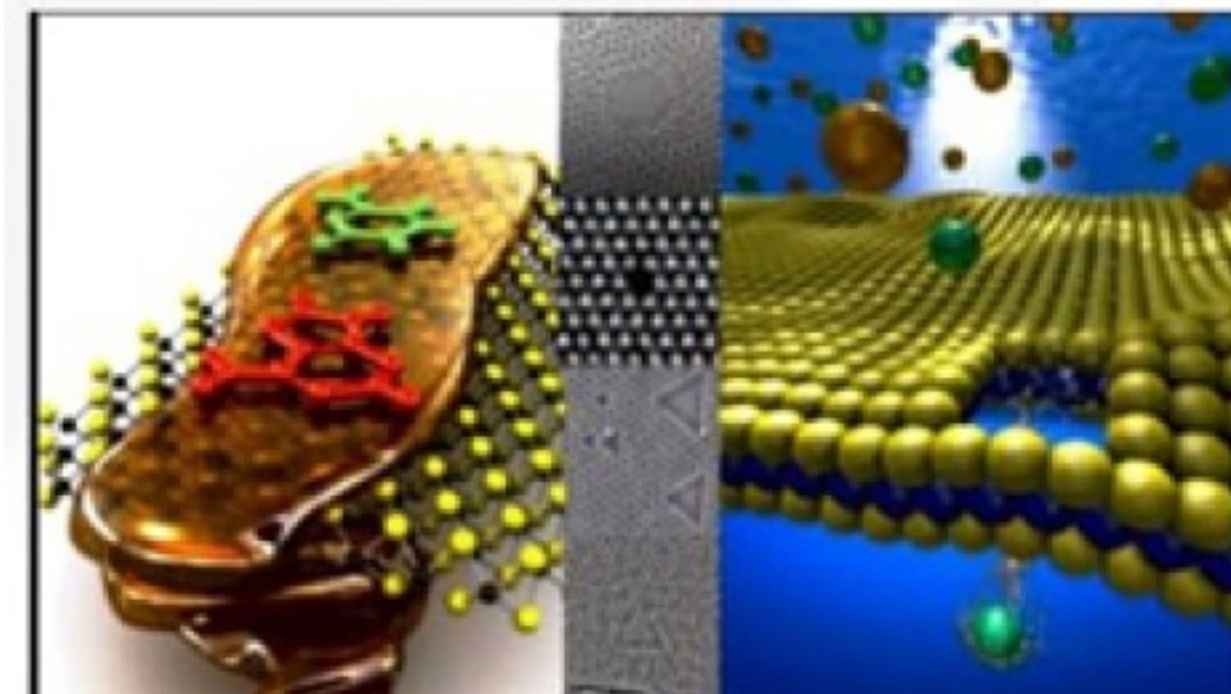
Computational Biophysics



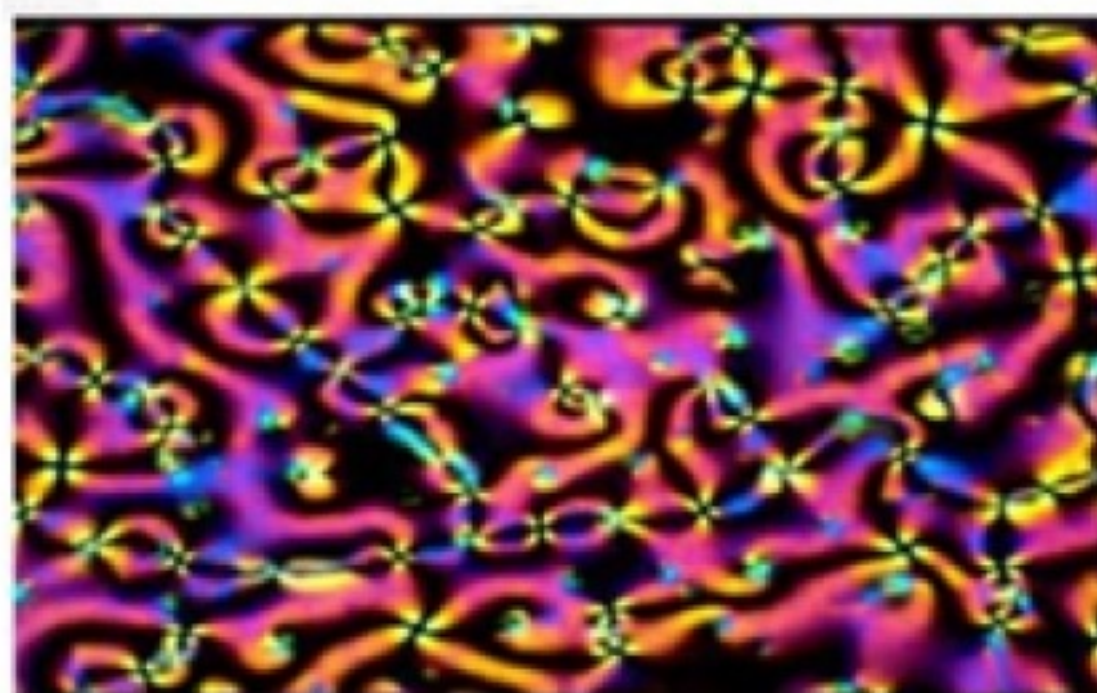
Water oxidation Chemistry



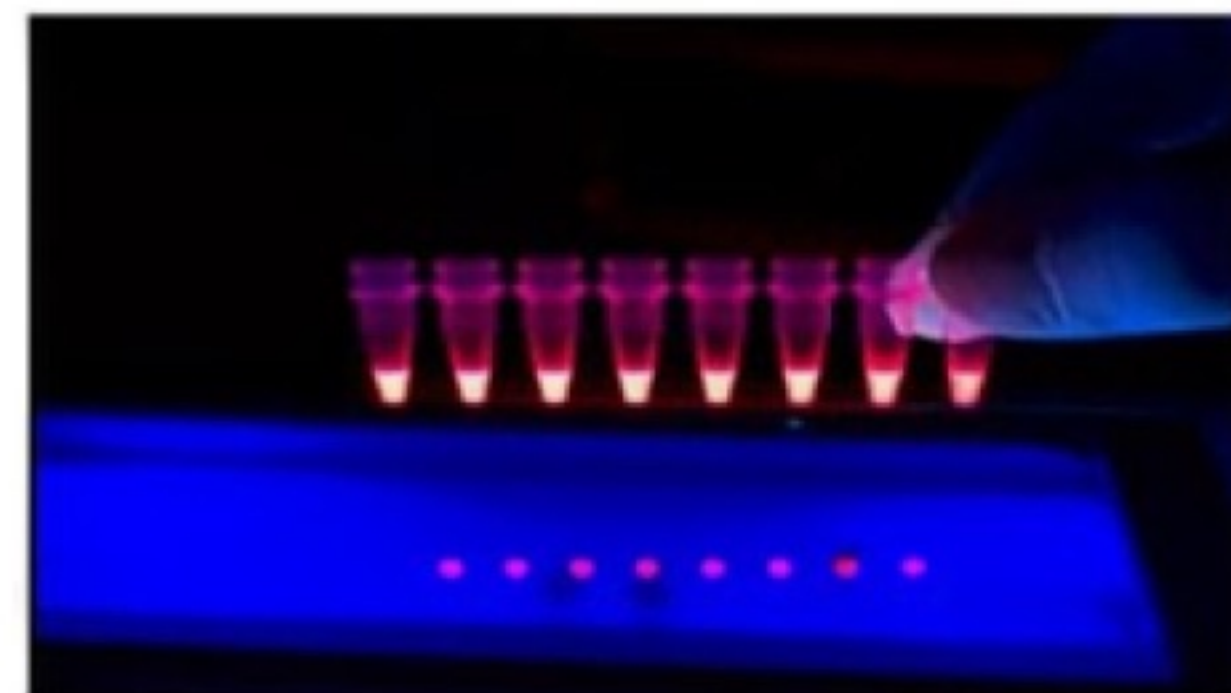
Bioinorganic chemistry



Nanofluids



Liquid crystals



Fluorescence Spectroscopy

About the Labs and Facilities

Analytical Instruments

- Liquid Chromatograph
- Mass Spectrometer (LC/ MS)
- Thermogravimetric/ Differential scanning calorimetry Analyser Differential Scanning Colorimeter
- IonMeter
- Gas Chromatograph
- High-pressure Liquid Chromatography Medium-pressure LiquidChromatography
Magnetic Balance
- Electrochemical Analyser
- GC-Moss Single Crystal X-Ray diffractometer(CCD) Polarimeter
- Elemental analyser Flash Chromatograph

X-Ray crystallographic Facility

Bruker Nonius Smart Apex II

X-ray Single crystal diffractometer (CCD) Bruker X-ray Powder diffractometer

Spectroscopy

Bruker 400 MHz NMR spectrometer under MHRD-FASTCOE program FTIR (two) UV-Vis (eight)
Fluorimeter(two) FluroCube

Miscellaneous

Miscellaneous INVERTED LED MICROSCOPE FOR BRIGHT FIELD, DIC, LED FLUORESCENCE WITH SMP CCD CAMERA.
IMAGING SOFTWARE AND COMPUTER Make: Nikon, Model: ECLIPSE Ts2R-FLAutomatic
Potentiometric Titrator, Make: Metrohm AG
Chemdraw Professional 17 academic site license for three (03) years for MS
Windows Internet Download edition (v)
High Speed Refrigerated Centrifuge, Make: HERMLE, Model: Z 36 HK Langmuir
Blodgett Filmmaker Cryocoolers
Glove box

Research and Sponsored

Research

Coordination and supermolecular chemistry of aromatic N-oxides.

Newer Synthetic Methodologies in Carbohydrate Chemistry and Facile Access to N-Heterocycles Using Multi Component Reactions.

Study of intramolecular C-N, C-O, and C-S Cross-Coupling Reactions and Application of Self-Assembled Chiral Copper(II) Complexes for Asymmetric Acylation Reaction

Sponsored Projects

With over 30 ongoing projects sponsored by major organizations, Institutions and agencies like CSIR, DST, BRNS, DRDO, SERB, DAE, CDRI and Alexander von Humboldt Foundation Germany, the department has churned out over 130 publications last year alone in almost all major journals of the world. Some of our ongoing projects include:

- Desulfurization and Denitrogenation of Diesel (IOCL sponsored project)
- Generation of Conducting Polymer Films, Fibers and Composite (DST sponsored project)
- synthesis of Novel Conducting Polymers for application in Organic Light Emitting Diodes (DST sponsored project)
- Development of Metallo-supramolecular polymers (DST sponsored project)
- Unsupported Membranes: A Simple Approach (CSIR sponsored project)
- Nanolithography in color and design of microfluidic devices (DST sponsored)
- B Breaker di-peptides: development of a novel approach for amyloid disruption (BRNS sponsored)
- Multilayer of Porous Micro-Capsules to Develop Robust Slippery Liquid-Infused Porous Surface (SLIPS)
- Physically and Chemically Durable Bulk Superhydrophobic Material: An Avenue for Smart Drug Delivery

Projects About the Course

Departmental Elective

- Quantum Molecular Dynamics
- Medicinal Chemistry
- Drug Design and Development
- Organometallic Chemistry
- Biological Chemistry of Metal Ions
- Consumer Chemistry
- Green Chemistry and Technology

Open Elective

- Petroleum and Petrochemicals
- Chemical Approaches to Nanoscale science and Technology
- Application of Statistical Mechanics to Chemistry

Pre-final Year

- Computational chemistry
- Applications of Nano-materials
- Frontiers of coordination chemistry
- Chemical kinetics and electrochemistry
- Polymer chemistry
- Environmental Chemistry
- Technical report presentation
- Inorganic chemistry lab
- Physical chemistry lab

Final Year

- Modern chemical technology
- B Tech project
- Department electives
- Open elective
- HSS elective

M.Sc.

- Thermodynamics
- Bio-Inorganic Chemistry
- Bio-Organic Chemistry Pericyclic Chemistry
- M.Sc.Project
- Department Electives
- Inorganic chemistry
- p and d-block Chemistry
- Principles of Organic Chemistry
- Quantum Chemistry
- Group Theory and Spectroscopy
- Physical Chemistry Lab
- Computers and Chemistry
- Inorganic Reaction mechanism and Organometallics
- Organic Reaction mechanism
- Chemical dynamics and Electrochemistry
- Application of Spectroscopy
- Organic chemistry lab

About

Bachelor in Chemical Science and Technology

A four year Bachelor of Technology (B.Tech) programme in Chemical Science and Technology, the first of its kind in the IIT system, is being offered by the Department of Chemistry at IIT Guwahati from the year 2007. This programme will prepare the students for the emerging need of qualified persons with adequate knowledge in both Chemistry and its technology related issues, in both academics and industry. It will also provide students practical training in basic science and engineering. The technological course components include applied catalysis, drug design, medicinal chemistry, nanomaterials and nanoscience, fine and bulk chemicals, green chemical and technological practices. During the course, the students will be trained to do frontline research in interdisciplinary areas, which include materials science, environmental science and molecular biology.

No. of Students: 54

About

Masters in Chemistry

The Master of Science and other post-B.Sc. programs at the IITs offer high-quality post-graduate education in respective disciplines, comparable to the best in the world. The current pace of advancement of technology needs a coherent backup of basic science education and research. The vibrant academic ambience and research infrastructure of the IITs motivate the students to pursue R&D careers in frontier areas of basic sciences as well as interdisciplinary areas of science and technology.

Thesis Project

During the course of four semesters, The Master's program covers two thesis, a major and a minor. The Master's thesis is a year long project completed in two semesters. It enables the students to research, analyze, and provide solutions in the field

No. of Students: 57

Summer Internship and Project Collaborations

An important aspect of the design program is industrial and professional experience and research through internships in various industries, companies and universities both in India and abroad.

Academic Internships

MIT Media Labs

Carnegie Mellon University

Northeastern University

University of British Columbia

Honyong University

Boston Arizona State University

KAIST

University of Ghent TU Berlin

TU Delft

Carleton University

Canada Karlstad University Sweden

EPFL

Middlesex University



Past Recruiter



Past Recruiter



And Many More
...



About CCD - Centre for Career Development

Roles & Responsibilities

The Centre for Career Development at IIT Guwahati handles all aspects of campus placements for graduating students. The cell is responsible for mediating between the company and the students. Arrangements for every stage of the recruitment process are made by officials at the office. The Head, CCD in consultation with the student coordinators oversee all placement related activities at the institute. CCD coordinates with recruiting companies and handles the entire internship hiring and on-campus recruitment process. The scheduling process is handled accommodating both the needs of the students and the department to ensure that the recruitment process is carried out in the most comfortable and satisfying manner possible.

Training Initiative

Centre for Career Development also takes the responsibility of training the students of the Institute and strengthening their concepts by building on the fundamental principles while also accommodating the needs of the industrial market within realistic constraints such as economic, environmental, social, health and safety. The Centre ensures complete revision of basic concepts so that students can identify, formulate and solve engineering problems with the understanding of professional and ethical responsibility. CCD also organizes regular training sessions for students on soft skill development.

Facilities

The office has excellent facilities and infrastructure for placement activities, which include:

- a) Online Platforms for Interviews
- b) Registration portal for Companies & Students
- c) Institute auditorium, Lecture Halls for Pre-placement talks and tests
- d) Computer Centre and Departmental Labs for written and online tests
- e) Video Conference Facilities including Skype Interviews

Contact Us



We are looking forward to have you on our Campus.

Faculty Placement Representative



Dr. Samir Kumar Sarkar

Phone : +91 3612583482

Head Of The Department



Prof. Aditya Narayan Panda

Phone : +91 3612582303

Overall Placement Coordinator



Jagdish Panda

Phone : +91 9337218041



Sravya Vardhani

Phone : +91 8333041969

Department Placement Representative



Yash Vardhan Srivastava

Phone : +91 8353923237



Payodh Dwivedi

Phone: +91 6261925497

E-Mail : placement@iitg.ac.in / ccd@iitg.ac.in

Website : iitg.ac.in/ccd

Phone no : 0361258 2171/2175

Centre for Career Development (CCD),
First Floor, Administrative Building,
Indian Institute of Technology Guwahati, Guwahati, Assam - 781039.