CENTRE FOR CAREER DEVELOPMENT
IIT GUWAHATI

Department Placement Brochure.

BATCH OF 2026 | Biosciences and Bioengineering

About IIT Guwahati.

Established in 1994, Indian Institute of Technology Guwahati is the sixth member of the IIT fraternity and one of India’s premier institutions for higher education, research, and innovation. Within a short span, the Institute has emerged as a global centre of excellence in science, technology, management, and design. The picturesque campus spans 285 hectares on the northern bank of the Brahmaputra River, approximately 20 km from the heart of Guwahati city. Surrounded by scenic hills and open spaces, it offers a perfect environment for learning, research, and holistic development. IIT Guwahati offers a wide array of academic programmes including B.Tech., B.Des., BSc (Hons), M.Tech., M.Des., M.Sc., MBA, M.A., MS(R) and Ph.D. across 11 departments, 9 interdisciplinary centres, and 5 schools, covering major disciplines in engineering, science, humanities, healthcare, and management.

The Institute has built world-class infrastructure and houses state-of-the-art laboratories and National Centres of Research that support cutting-edge research. Students are encouraged to take up interdisciplinary coursework, pursue minor degrees, and choose from a rich variety of open and interdepartmental electives. IIT Guwahati has signed MoUs with top international universities, facilitating semester exchanges and summer internships, thereby broadening students' global exposure. Our students regularly intern at leading global firms and research institutions, gaining invaluable real-world experience.

Ranked among the top 100 world universities under 50 years by Times Higher Education (THE), IIT Guwahati continues to excel globally. The Institute was ranked 42nd globally in 'Research Citations per Faculty' and 344th overall in QS World University Rankings.

About the Department .

The Department of Biosciences and Bioengineering at IIT Guwahati, established in November 2002, offers undergraduate (B.Tech.), postgraduate (M.Tech.), and Ph.D. programs. It is the only department of its kind in North-Eastern India, providing quality education and research opportunities in diverse areas like biochemical engineering, tissue engineering, plant biotechnology, nanobiotechnology, and computational biology. With 38 faculty members, the department is committed to training competent engineers and scientists and advancing research to meet the needs of biotechnology industries.

🎯 Mission

The department aims to define and establish a discipline that integrates life sciences with engineering, advancing knowledge through quality education and research. It focuses on developing skills in students to address interdisciplinary challenges.

👁 Vision

The department seeks to enhance understanding of biological systems and develop biology-based technologies for societal needs, with an emphasis on integrating life sciences with engineering in its educational programs

Website Link

From the desk of HOD.

Department of Biosciences and Bioengineering was established in the year 2002 and within a short span of about twenty two years, it has established itself as a leading place for education and research with its contributions in the emerging areas of Biological Sciences and Bioengineering. Apart from fundamental research, the Department aims to meet the targeted demands to cater the requirements of Biotechnology based industries.

The Department currently offers four-year B.Tech. (undergraduate) and two-year M.Tech. (postgraduate) teaching programmes in Biotechnology. Besides, it offers a research programme at the Ph.D. level in the various disciplines of Biosciences and Bioengineering. The Department is unique in North-Eastern India, imparting quality education, providing an excellent teaching and research environment through its ongoing programmes coupled with an outreach programme recently launched across entire NE region through NECBH. Extensive facility and infrastructure has been developed to support its on-going teaching and research activities. Further, to cater to needs of academic and industry, and NE in particular, capacity building in terms of training manpower is one of the main mandate of the department

Department has not only improved its quality of research by publishing high quality papers in reputed journals but also has a strong science outreach programme. Department faculties are committed towards the ethos of overall progress and development of the Institute and have brought accolades not only for themselves, for the Department but for the Institute in bigger frame.

Department has established collaborations with leading National and International organizations.

Integration of good skill development to which the Department is committed towards has paid dividends as is reflected based on the data on training carried in last few years.

Prof. Utpal Bora

Head of the Department

From Department Faculty Representative.

I am pleased to introduce the Department of Biosciences and Bioengineering at IIT Guwahati. Established in 2002, our department has become a center of excellence, advancing education and research at the interface of life sciences and engineering. Our journey has been marked by significant contributions to academia and industry, driven by a commitment to innovation, interdisciplinary collaboration, and societal impact.

We offer comprehensive programs at the B.Tech., M.Tech., and Ph.D. levels, designed to develop professionals who excel in the dynamic fields of biosciences and bioengineering. Our curriculum emphasizes an interdisciplinary approach, fostering critical thinking, creativity, and the ability to translate research into practical solutions. Our esteemed faculty guide students through cutting-edge research and hands-on projects, equipping them with the skills to address complex challenges in biotechnology, bioengineering, and beyond.

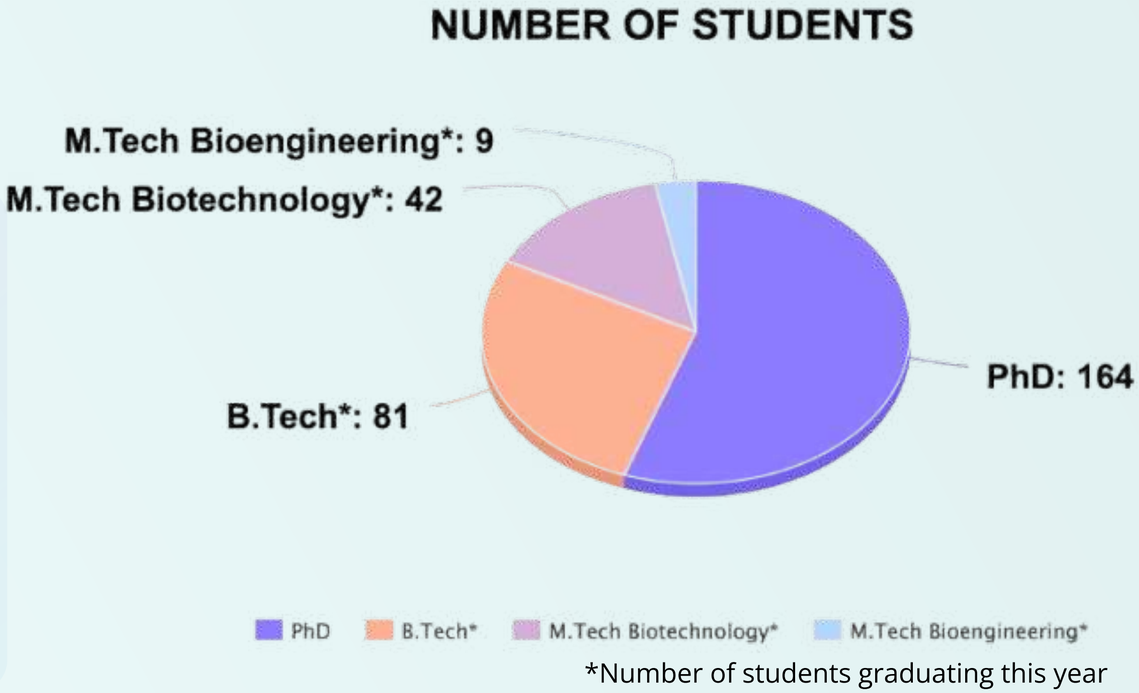
As our students prepare to embark on their professional journeys, they bring with them a strong foundation in both theory and practice, ready to make meaningful contributions across various industries. I warmly invite you to engage with our talented students and explore opportunities for collaboration that advance both academia and industry.

Prof. Nitin Chaudhary

Demographics.

Undergraduate Program - B.Tech

The Department offers a four year **B. Tech in Biosciences and Bioengineering** to train the bright students as engineer along with essential knowledge on Biosciences and Bioengineering. In this program, the courses are designed systematically to offer an overall knowledge of physics including experimental techniques with modern equipments. The professional and academic success of our graduates is evident in their routine acceptance into top-tier universities and their receipt of lucrative employment offers from globally recognized corporations



*Number of students graduating this year

Postgraduate Programs - M.Tech

The Department of Biosciences and Bioengineering provides two Master of Technology (M.Tech.) programs **M.Tech in Biotechnology** and **M.Tech in Bioengineering**. The curriculum maintains a strong balance between theoretical classroom instruction and practical, hands-on laboratory experience with modern instrumentation. Graduates are highly successful in securing positions for advanced studies at renowned universities and research institutes globally.

Doctor of Philosophy

The doctoral program is designed to foster cutting-edge research that drives innovation in both industrial and medical sectors, carried out under the mentorship of distinguished principal investigators. Major research domains include cancer biology, protein biology, bioprocessing, microbiology, virology, biofuel production, applied biotechnology, and stem cell biology, alongside several other emerging and interdisciplinary fields.

Courses Offered.

B.Tech Core Courses:

- Chemistry Laboratory
- Basic Electronics
- Engineering Drawing
- Introduction to Computing
- Computing Laboratory
- Basic Electronics Laboratory
- Biochemical Process Calculations
- Bio-thermodynamics
- Biochemistry
- Genetics
- Cell and Molecular Biology
  Genetic Engineering
- Chemical Reaction Engineering in Bioprocesses
- Bio-reaction Engineering
  Sustainable Development Goals
- Biochemistry
- Bioinformatics
- Biochemical Engineering
- Biochemical Engineering Laboratory, etc.

M.Tech Biotechnology Core Courses:

- Biotechniques
- Advanced Genetic Engineering
- Analytical Biotechnology Lab
- Quantitative Biology
- Biomolecular and Cellular Process engineering
- Applied Biology and Bio-engineering Lab

M.Tech Bioengineering Core Courses:

- Biotechniques
- Advanced Bioreactor Engineering
- Introduction to IPR and Ethics
- Experimental techniques in Bioengineering
- Advanced Bioengineering
- Metabolic Engineering
- Bioinstrumentation & Control
- Applied Bioengineering Lab
- Research Methodology

Department Electives.

- Biofuels
- Biointerface Engineering
- Introduction to Mechanobiology
- Biomaterials
- Biorefineries
- Biosensors
- Fundamentals of Human Body Mechanics
- Chemo Informatics
- Enzymology
- Frontiers in Bimolecular Simulation
- Stem Cells, Cancer and Therapy
- Systems Biology
- Tissue Engineering & Regenerative Medicine
- Analytical Biotechnology
- Animal Models in Biomedical Research
- Alternative Splicing and Diseases
- Advances in Plant Genetic Engineering and Functional Genomics
- Cell Signaling and Development
- Cellular and Molecular Aspects of Aging
- Fluorescence Techniques in Biotechnology
- Food Biotechnology
- General Virology
- Fungal Biotechnology
- Gene Therapy
- Genome Editing and Engineering
- Human Biology and Diseases
- Introduction to IPR and Ethics
- Introduction to Programming
- Metabolic Engineering
- Metagenomics
- Microbial Biotechnology
- Molecular Biophysics
- Molecular Marker Assisted Breeding in Plants
- Neural Imaging and Signal Systems
- NMR Spectroscopy: Principles and Applications
- Physical Cell Biology
- Plant Biotechnology
- Plant Molecular Farming
- Protein Structure, Function and Crystallography
- Proteomics: Methods & Applications
- Quantum Chemistry of Atoms and Molecules
- Research Methodology
- Essentials of Genetics

Key Research Areas.

- Bioprocess Engineering
- Systems Biology
- Biomechanics
- Soft computing
- Artificial intelligence
- Machine learning
- Implant design
- Protein Biochemistry
- Immuno Prasitology
- Biofuel
- Biochemical Engineering
- Tissue Engineering and Biomaterials
- Stem Cell Biology
- Cell Therapy & Regenerative Medicine
- Organelle Biology
- Inter-organelle Communications
- Cellular Ageing
- Bio-interfaces and Biomaterials
- Environmental Biotechnology
- Nanobiotechnology
- Chemistry-Biology Interface for Developing Antibacterials and Sensors
- Stem cell engineering and regenerative medicine
- Molecular Parasitology
- Computational Biology
- Bio/Physio Sensors and Nanobioengineering

- Structural Biology
- Molecular Endocrinology
- Enzyme and Microbial Technology
- Metagenomics
- Biosensors
- RNA Biology
- Cancer Biology
- Biosensors and bio-fuel cells
- Neural Engineering
- Network medicine
- Bio-Nano catalysis
- Drug delivery vehicles
- Preparation of polypyrrole embedded nanocellulose and surfactant (CTAB) modified carbon adsorbent for efficient elimination of azo-anionic dyes.
- Elimination of pharmaceutical wastes viz. antibiotics using carbon and grass based nanocellulose adsorbents.
- Phyto, microbial and fish toxicity studies for ecotoxicological assessment of the prepared adsorbents to understand its significance in eliminating pollutants from aqueous bodies
- Plant Tissue Culture & Secondary Metabolites Production
- Molecular Biology
- Plant Biotechnology
- Fungal Biotechnology

Instrument Facilities.

- High Performance Liquid Chromatograph (HPLC)
- Fast Protein Liquid Chromatograph (FPLC)
- Atomic Emission Spectroscopy (AES)
- Real Time PCR
- Inverted Micrsocope
- Auto Tensiometer
- Lyophilizer
- Circular Dichroism Polarimeter
- Dynamic Light Scattering Machine (DLS)
- Rheometer
- Multimode Microplate Reader
- Fourier Transform Infrared Spectroscopy (FTIR)
- Ultracentrifuge
- Bioreactor
- Gel Doc machine

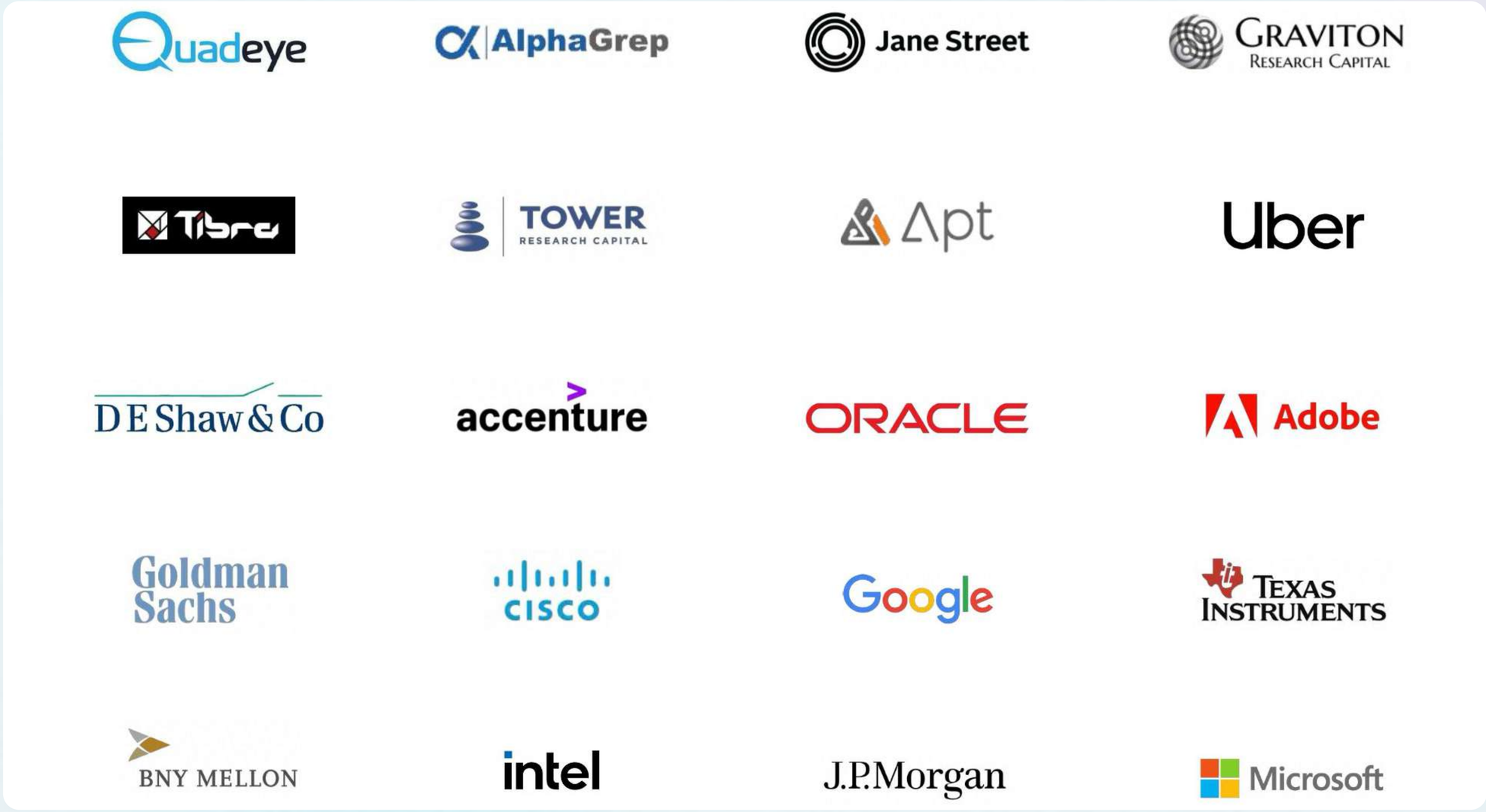
DCIF Link

Instrument Facilities.

- Gas Chromatograph
- HPLC
- FPLC
- Spectrofluorometer
- Bioreactors
- Trinocular phase contrast microscope with fluorescence attachment
- Inverted Fluorescence Microscope with camera
- Autotensiometer
- Langmuir-Blodgett Trough
- High Speed and High Capacity Centrifuge
- Ultracentrifuge (Sorvall WX 100+)
- Parallel Fermenter with Accessories (and YSI 2900 Dual Biochemistry Analyzer system)
- Arial Mx Real Time PCR
- Dynamic Light Scattering (DLS) System
- Rheometer
- Lyophilizer
- 4210 Microwave Plasma Atomic Emission Spectrometer
- FTIR (Fourier-transform infrared spectroscopy)
- CD (Circular Dichroism Polarimeter)
- Electroporator
- Sure Cycler 8800 thermal cycler, etc.

Past Recruiters.

Past Recruiters.



Major Achievements.

Students Achievements:

- Ms. Pratibha Koundal received the best poster presentation award at a conference at Birla Institute of Technology, Mesra, in 2025.
- Mr. SurajKumar was awarded the IEEE Student Travel award to attend a conference.
- Vishnu K.N, Doli Hazarika, and Shivani Mittal (as a team) won the Research Pavilion Healthcare Award at PIWOT 2025 for their research presentation.
- Vishnu K.N, Doli Hazarika, and Shivani Mittal (as a team) were finalists at BioNest 2025 for their biomedical device idea.
- Mr. Krishna Kant Pachauri won a medal and certificate for the best oral presentation at BITS Pilani, Goa Campus.
- Ms. Chetna Sharma secured the 3rd position certificate for her poster presentation at BITS Pilani, Goa Campus.
- Mr. Jaideep Singh Bhardwaj was honored with the "Pratibha Samman" for his research in Biotechnology.
- Mr. Jaideep Singh Bhardwaj won the Best Interactive Pavilion award at the India International Science Festival 2024.
- Mr. Jaideep Singh Bhardwaj was the winner of the Research Podium at the PIWOT Conference 2025, receiving a cash prize.
- Mr. Jaideep Singh Bhardwaj received a financial grant from ANRF to participate in a conference in Switzerland in 2025.
- Ms. Divya Saini earned INR 30,000 as a Student Intern (STEM Educator) at IIT Guwahati under a government program.
- Harish Kumar, Mohammed Askkar, and Sulaiha Juvairiya won the Vishwakarma Awards 2024 with a cash prize of INR 1,00,000 for their prototype.
- Rakshita Mehta won a cash prize of INR 10,000 from Hindustan Petroleum in the New Generation Ideation Contest 2024.
- Ajithkumar Veluchamy received the Best Poster Presenter Award from IIT Madras for his work on bioremediation.
- Ragavan Chandrasekar was honored with the Best Oral Presenter Award at Banaras Hindu University.
- Mr. Satyendu Nandy won the 3rd Best Oral Presentation Award medal at the VIBCON 2024 conference in Chennai.
- Mr. Nilave Ranjan Bora secured the 1st Best Oral Presentation Award medal at an international conference at NEHU, Shillong.
- Ms. Tanveera Sarhadi won the Oral Talk Prize at the BioMACS 2025 conference at Woxsen University, Hyderabad.
- Ms. Isha Kashyap received the Poster Prize at the 21st Biennial International Conference of AGI 2024.
- Mr. Satyam won the Best Product Design Award at the Vishwakarma Awards 2023, organized by IIT Delhi.
- Mr. Sonu S S was selected for the Erasmus+ KA171 Academic Exchange Fellowship for a 5-month program in Spain.
- Ms. Arisha Arora won 1st place in the 'Scientifique' poster presentation at the Research and Industrial Conclave at IIT Guwahati.

Major Achievements.

Students Achievements:

- Ms. Anjana Sajeev won a cash prize for the best presentation at DAILAB PRIME CAFÉ PLUS 2024 from Advanced Industrial Science and Technology, Japan.
- Mr. Aviral Kumar received a foreign travel grant from CSIR to present his research paper.
- Mr. Aviral Kumar was awarded the ISSMART citation for best presentation by the Asian Federation of Biotechnology.
- Ms. Bintee won the Best Oral Presenter trophy at the 3rd International Conference of Biological Science (ICOBIOS) 2024 in Indonesia.
- Ms. Bintee received a cash award for best presentation at DAILAB PRIME CAFÉ PLUS 2024 from Advanced Industrial Science and Technology, Japan.
- Ms. Anjana Sajeev earned a cash award for her best presentation at DAILAB PRIME CAFÉ PLUS 2024 in Japan.
- Ashwani Kumar Verma received the Best Paper Award medal at an international conference at IIT Mandi.
- Bipasha Choudhury was given the Best Paper Award medal for her research presentation at an international conference at IIT Mandi.
- Madhulika Shrivastava won the Best Paper Award medal at the IX International Conference at IIT Mandi.
- Annu Anand received the Best Poster Presentation Award medal at the CARBO-XXXVIII International Conference at Gauhati University.
- Yumnam Robinson Singh was awarded the ANRF International Travel Grant to present his work at a conference in Hong Kong.
- Sweta Kumari received a registration fee waiver from the EMBL Corporate Partnership Programme for 2025.
- Ayushi Rehman was awarded a travel grant by the EMBL Corporate Partnership Programme for 2025.
- Ayushi Rehman received the ITS-ANRF travel grant from the Anusandhan National Research Foundation for 2025.
- Ayushi Rehman was granted a registration fee waiver from EMBO in 2024.
- Priyanka Yadav received a registration fee waiver from EMBO in 2024.
- Ms. Shilpa Nandi won the best oral presentation citation at the Environment 2024 conference at IIT Guwahati.
- Ms. Jaya Bharti Singh earned the best oral presentation citation at an international conference at IIT Guwahati.
- Mr. Soumyajit Das was awarded the best oral presentation citation at the International Conference on Unraveling Indian Knowledge Across Asia at IIT Guwahati.
- Ms. Prattusha Khan won the best poster presentation award at the Research and Industrial Conclave-Integration 2024 at IIT Guwahati.

Major Achievements.

Patents Granted

- A patent was granted to Prof. Pranab Goswami and his team for a paper-based kit designed to detect methanol.
- Prof. Pranab Goswami and his co-researchers were granted a patent for an enzymatic biofuel cell.
- A patent application from Prof. Sanjukta Patra's team has been published for a method to produce an enzyme used in breaking down industrial dyes.
- A patent application by Prof. Sanjukta Patra and Mr. Satyam was published for an IoT-enabled system that monitors water quality in real-time with remote data access.
- Prof. Sanjukta Patra's team has a published patent application for an energy-efficient water distillation unit using advanced technologies.
- A patent application was published for a nucleic acid aptamer designed by Prof. Sanjukta Patra's team to bind to the Ag85b protein (related to tuberculosis).

Major initiatives and Breakthrough in R&D

- Prof. B. Anand and Dr. Kusum K. Singh convened the SERB-funded national "12th RNA Group Meeting" in May 2024 for 150 participants.
- Dr. Kapish Gupta coordinated the BSBE Alumni meet for 100 attendees in October 2024.
- Dr. Kusum Kumari Singh coordinated the SERB-funded national "12th RNA Group Meeting" in May 2024, hosting 130 participants.
- Dr. Lalit Mohan Pandey organized an international curtain-raiser event on Indian Knowledge Systems in April 2024 for over 200 people.
- Dr. Lalit Mohan Pandey organized the international conference "UnravelingIndian Knowledge Across Asia (UNIKAA 2024)" in October for over 350 attendees.
- Dr. Lalit Mohan Pandey organized the national "Leadership Summit 2024" in October, which drew a crowd of 1000 participants.
- Dr. Lalit Mohan Pandey organized the national "BSBE Alumni Meet 2024" in October for 100 attendees with support from various industry sponsors.
- Prof. Ranjan Tamuli organized a national event on genetics in October 2024 for about 50 participants, funded by the Indian Academy of Sciences.
- Prof. Ranjan Tamuli was on the organizing committee for the Government of India's "India International Science Festival (IISF) 2024," an international event with over 15,000 participants.

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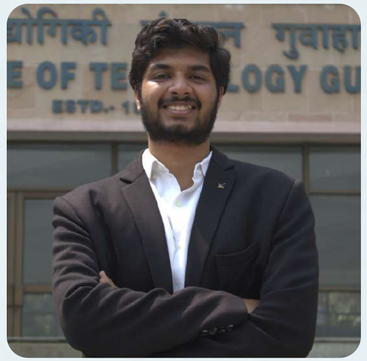

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