



BIOSOC



PLACEMENT BROCHURE

DEPARTMENT OF BIOLOGICAL SCIENCES AND
BIOENGINEERING

Message from HOD



Amitabha Bandyopadhyay

KENT chair for entrepreneurship & innovation
Professor-in-charge, Startup Incubation and
Innovation Centre

The **Department of Biological Sciences and Bioengineering, IIT Kanpur** is delighted to invite you to this year's placement session. Since its inception, our department has been dedicated to training students and conducting high-quality research in various aspects of bioengineering, including biomaterials, tissue engineering, bioinformatics, and medical device development.

Our students at IIT Kanpur, especially those in the BSBE Department, undergo a rigorous **interdisciplinary curriculum**, including courses in statistics, basic sciences, computing, electronics, engineering, professional communication, and humanities. Our academic curriculum provide them with exceptional flexibility to prepare for diverse careers in academia, industry R&D, entrepreneurship, consulting, software development, business analysis, and investment.

Recent government investments in MedTech and Biotechnology, along with institutional development, highlight the sector's growth potential. The department is dedicated to preparing students with a strong engineering foundation and multidisciplinary education to excel in the industry and drive growth in this dynamic field.

ABOUT US

Since its establishment in 2001, the department has been pioneering research and education in Biological Sciences and Bioengineering with distinguished faculty, cutting-edge research facilities, and vibrant graduate community. BSBE hosts excellent ongoing research and academic courses for students in molecular and structural biology, biomaterials, tissue engineering, Optical imaging, immunology, bioinformatics, and neuroscience build a strong foundation in core bioengineering in students.

Owing to ongoing large-scale impact bioengineering projects, collaboration, the establishment of dedicated centers, and strong academic programs, BSBE has evolved to become a seat of innovation.

Notable Achievements

COLLABORATIONS

- Collaboration with Laurus Labs on gene therapy.
- BSBE faculty members lead a project for an indigenous artificial heart - LVAD
- During the COVID-19 pandemic, we developed products ICU ventilator, oxygen plant, and N-95 grade face masks.

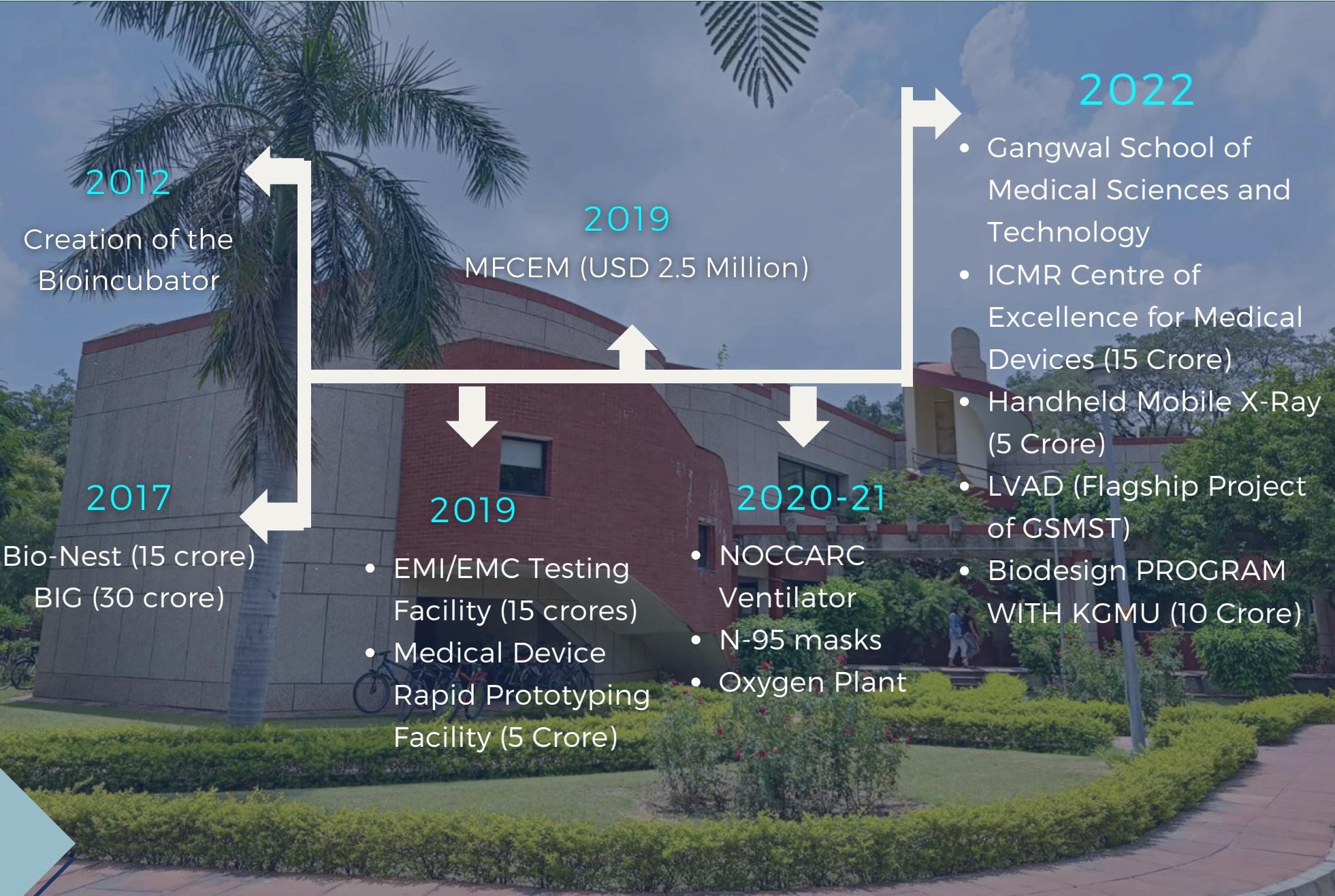
PATENTS

- Breakthrough in disaggregating and solubilizing synthetic polypeptides.
- Development of a drug screening process and formulation for Huntington's disease.
- Creation of a novel fly tumor model for drug screening.

RESEARCH

- Elastomeric biodegradable antioxidant polymer for cardiac tissue patches.
- Nanoparticle-based drug delivery system for niclosamide and combinations.
- Successful sustained delivery of potential osteoarthritis therapy.

Centers & Ongoing Projects



SKILLS

RESEARCH



- Biomaterials
- Protein Biochemistry
- Developmental Biology
- Microscopy & Imaging
- Microbiology
- Neurobiology
- Biophysics
- Structural and Computational Biology
- Genetic engineering
- Tissue engineering
- Oncology

COMPUTATIONAL



TECHNICAL



- Super-resolution microscopy
- Single-molecule imaging
- Flow Cytometry
- Cryo-Electron Microscopy
- X-ray Crystallography
- Biosensor design
- High throughput screening
- Polymerase Chain Reaction
- AAV gene therapy
- Electrophysiology

Core

Curriculum

Tech

Cell and Molecular Biology

Biomaterials

Experimental Bioseparation

Structural Biology

Immunology and Microbiology

Neurobiology & Developmental Biology

Functional Genomics

Principles of Biotechnology

Biopharmaceuticals

Bioinformatics and Computational Biology

Modern Instrumental Methods in Biology

Tissue Engineering

Biochemical Engineering

Computational Genomics

Past Recruiters

Industrial

BlackRock

accenture

Rakuten Mobile

SUN
PHARMA

BAIN
& COMPANY

Trellix

AMERICAN
EXPRESS

gsk

AXIS BANK

pwc

publicis
sapient

Jio

CHEDDY'S
INSTITUTE OF LIFE SCIENCES

Daiichi-Sankyo

citibank

INTAS

fm



Caltech

GT
Georgia Tech.

H
Heidelberg
UNIVERSITY

UNIVERSITY OF OXFORD

JOHNS HOPKINS
UNIVERSITY

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CAMBRIDGE

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UNIVERSITY OF WISCONSIN-MADISON

LUDWIG-
MAXIMILIANS-
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Collaborators



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Dr. Priyanka Prakash
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NCI, NIH



Rashie Jain
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Onco.com



Neeraj Kathuria
Founder
ThroughSkin

Research Focus



Regenerative Medicine

Drug discovery

Diagnostics

Musculoskeletal disorders

Metabolic disorders

Neurological & psychiatric disorders

Cancers

Infectious diseases

Gene therapy

Medical Devices

Drug delivery

Research Facilities



Cryo EM Facility



Experimental Animal Facility



GLP Facility



3D Bioprinting Facility



Confocal Microscopy Facility

Research Areas and Faculty Expertise



Dr Amitabha Bandyopadhyay, Skeletal Biology Lab

We study the patterning and differentiation of developing limb skeleton



Dr Nitin Gupta, Neural System Lab

Using flies and mosquitoes to understand the neural circuits that govern behavioural preferences to smells.

Dr Jonaki Sen, Developmental Neurobiology

Gene regulatory networks involved in patterning and neuronal differentiation of the forebrain



Dr Arjun Ramakrishnan, Decision Lab

Investigate decision-making to understand the effects of stress and mental health conditions



Dr Pradip Sinha, Fly Lab

We study Drosophila to uncover the cellular and molecular basis of human diseases like cancer, innate immunity, and diabetes



Dr Debanjan Dasgupta, Systems Neuroscience

Investigate complex brain circuits to uncover the mechanisms behind normal and diseased behaviours, focusing on sensory perception

Dr Arun Kumar Shukla, GPCR Biology Lab

Investigating the structural basis of activation and signaling of selected non-canonical GPCRs



Dr Saravanan Matheshwaran, Microbial Adaptation and Chromatin Dynamics Lab

Microbial Adaptation, Chromatin Dynamics , Stress Response and Antimicrobial Resistance (AMR)



Dr Bushra Ateeq, Molecular Oncology Lab

Exploring the genetic and epigenetic changes that drive cancer and its progression.



Dr Suresh Kumar, Autophagy Lab

Mechanisms of autophagy in cancer and SARS-CoV-2 infection, focusing on membrane dynamics



Dr Appu Kumar Singh, Singh Lab

Decipher the structure and function of therapeutically important membrane proteins using cryo - EM



Dr Subramaniam Ganesh, Human Molecular Genetics Lab

Deciphering cytogenetic changes in neurodegenerative disorders, stress responses, and ageing



Dr Shanu Jain , Liver Metabolism Lab

Investigating GPCR signalling mediated regulation of liver metabolism in health and disease, emphasizing fatty liver, steatohepatitis, and fibrosis



Dr Sai Prasad Pydi, Signaling Lab

Exploring the physiological role of GPCR signalling pathways in obesity and type 2 diabetes

Research Areas and Faculty Expertise



Dr Santosh Misra, BioMedHS Lab

Developing biosensors for oral microbiota and muscle weakness, detecting severity of the disease and using stem cell therapy to assist hair follicle and muscle regeneration

Dr Dhirendra Katti, Tissue engineering

We develop biomaterial-based technologies for drug delivery and regenerative medicine



Dr Ashok Kumar, AK Biolabs

Development of new generation of cryogel biomaterials, smart polymeric and nano materials towards biomedical engineering applications

Dr Ashwani Thakur, Amyloid Lab

We study protein aggregation, including polyglutamine, cataracts, and plant seed amyloids



Dr Anusmita Sahoo, Vaccine Development Lab

We create viral vaccines with computational biology emphasizing immunological interactions



Dr Jayandharan Rao, Molecular Genetics and Therapeutics Lab

We use engineered AAV viruses for gene therapy in treating monogenic disorders



Dr Rakesh Majhi, Tissue Restoration Lab

We study ion channels, immunology, reproduction, organelle dynamics, and cancer immunotherapy



Dr Dibyendu K. Das, Single Molecule Biophysics and Virology

Our focus is single molecule imaging to study virus life cycles and immune system evasion during infection



Dr Nitin Mohan, BioResolution Lab

We use advanced microscopy to study microtubule control of lysosomal transport and its role in disorders



Dr Sai Chaitanya Chiliveri

We study host-pathogen interactions and therapeutics using a multidisciplinary approach, including NMR spectroscopy



Dr Robert Sonowal

Understanding the role of commensal microbiota and their metabolites and developing them as therapeutics



Dr Hamim Zafar, Cosmic Lab

We use machine learning and models to study cellular interactions in cancer and development with single-cell sequencing.



Dr R. Sankararamakrishnan, Bioinformatics

We use bioinformatics for membrane protein function and identify novel biomolecule interactions with quantum chemistry

CONTACT US



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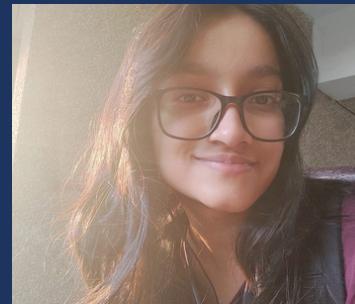
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