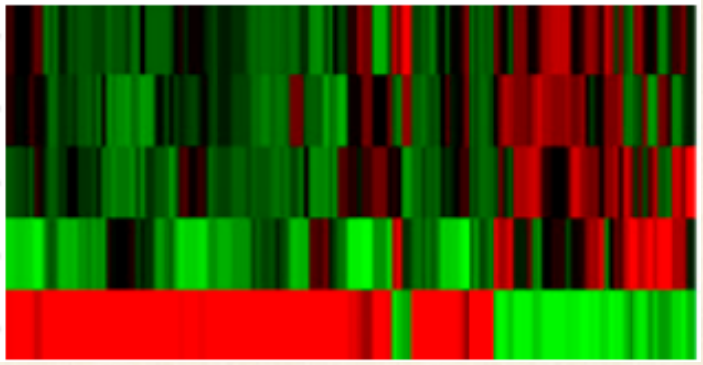
Department of Biotechnology

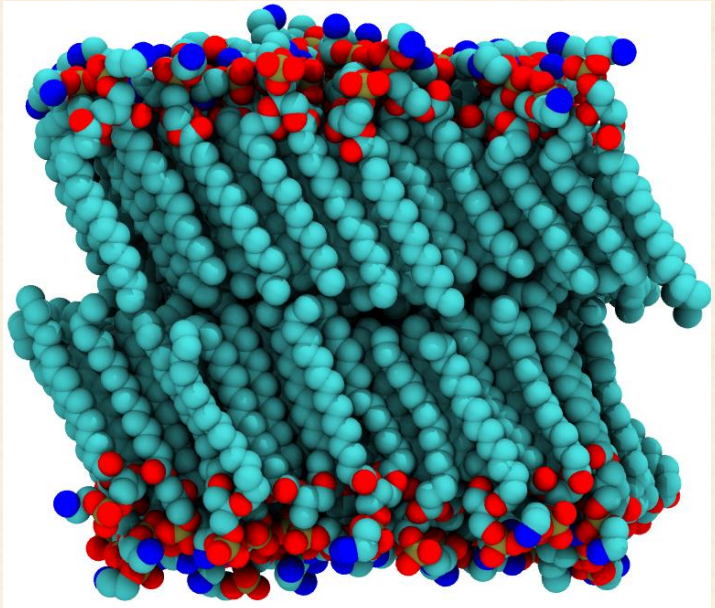
Indian Institute of Technology Hyderabad

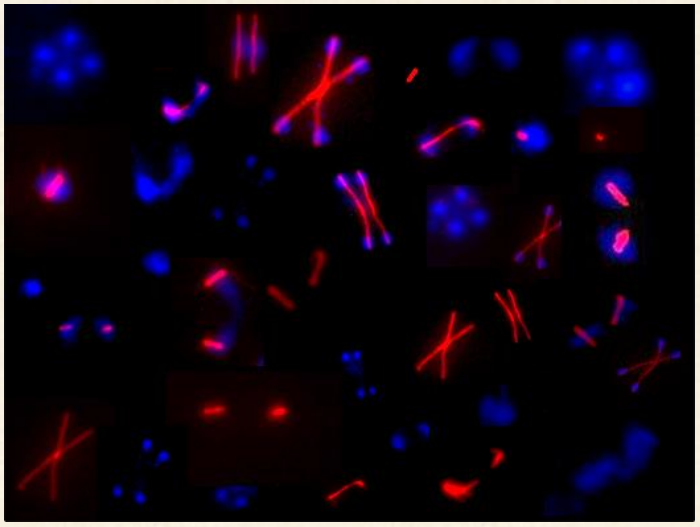
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Ph.D. Admissions Brochure
July 2023

Webpage: https://biotech.iith.ac.in/







Department of Biotechnology

PhD Admissions – July 2023

The Department of Biotechnology, established in 2010, offers outstanding research programs in the frontier areas of Biotechnology encompassing both applied and basic research: NMR Spectroscopy, X-ray Crystallography, Computational Biology, Circadian Biology and Chronomedicine, Neurodegenerative Diseases, Cell Signaling: Calcium signaling in Cancer, Xenotransplantation, Protein Misfolding Diseases, Infectious Diseases, HIV Biology, Cancer Biology, Chromosome Dynamics and Gene Regulation, DNA Repair, Molecular Mechanisms of Diseases using Zebrafish Animal Model, Advanced Bioimaging, Neuroscience, RNA Biology, Genomics and Epitranscriptomics, Proteomics, Drug Design, Computational genomics, Membrane Biophysics, Biomolecular Simulations, Computational Virology and Enzyme Engineering, Bioprocess Technology, Biofuels and Biochemicals, Waste Valorization and Circular Economy, Microbial genomics and evolution, Plant Genomics, Plant metagenomics, Plant-microbe interactions, Systems biology, Biological networks, Machine learning, Metabolism and Transcriptional regulation. Research activities in the department are funded by national agencies such as DBT, DST, ICMR, CSIR, etc.

The mission of the Ph.D. program is to develop a new generation of scientific leaders with scientific vigor, critical thinking, ethics, and multitasking managerial skills to thrive in the fast-paced technology-driven industry and academia. We foster innovations through cutting-edge technologies and interdisciplinary research.

Research Areas

Applications are invited from suitably qualified and motivated candidates for admission to the Ph.D. program in the Department of Biotechnology, IITH, in the following research areas:

Research Area	Faculty
Development of preclinical models of breast cancer using xenotransplantation in zebrafish and studying breast cancer mechanisms.	Dr. Anamika Bhargava
Human-Virus protein-protein interaction.	Dr. N.K. Raghavendra
Mechanism of DNA repair	Dr Anindya Roy
Exploring the molecular mechanisms of diseases by using computational and experimental approaches	Dr Thenmalarchelvi Rathinavelan
Protein misfolding in neuro-degenerative diseases-Amyotrophic Lateral Sclerosis (ALS), Huntington's disease, Alzheimer's disease; Role of chaperones in proteinopathies; Amyloid aggregation; Intrinsically disordered proteins; Oxidative stress in proteinopathies. Therapeutics of neuro-degenerative diseases; Yeast genetics & cell biology models of human proteinopathies.	Dr. Basant K. Patel
Cancer genomics and biomarker discovery, 3D cancer model development, Drug resistance and repurposing, Long noncoding RNAs, Alternative splicing and RNA metabolism in cancer, Protein Engineering.	Dr. Ashish Misra
Characterization of cancer drug targets, Drug/inhibitor design, Vaccine design, X-ray crystallography, Biophysics & Biochemistry, Computational biology, Epigenetics, and DNA repair.	Dr. Rajkumara Eerappa
Circadian rhythm, cancer, mechanism of drug action, clinical proteomics, mass spectrometry.	Dr. Sandipan Ray
Chromosome dynamics and genetic disorders, single-molecule imaging, chromatin remodeling, cancer therapy target aurora kinase B, cell division, gene regulation, advanced fluorescence microscopy.	Dr. Gunjan Mehta
Computational genomics and transcriptomics, artificial intelligence to devise precision medicine, predictive biomarkers in cancer, epigenomics, genome wide drugs and CRISPR/sh-RNA screens.	Dr. Rahul Kumar
Biomolecular modeling and simulations, DNA Nanotechnology, Nanoparticles interaction with biological matter, Lipid-DNA interaction, Computational biophysics, Computational Virology.	Dr. Himanshu Joshi
Biofuels, Biochemicals, Biomaterials, Nanobiotechnology, Bioprocess technology, Downstream processing, Hydrothermal Liquefaction, Waste valorization and Circular economy.	Dr. Althuri Avanthi
Microbial genomics, Evolutionary biology, Microbial diversity, Plant Genomics, Plant Metagenomics, Microbiome, Plant-microbe interactions, Computational biology, Prediction webservers	Dr. Gaurav Sharma
Systems biology, Biological networks, Machine learning, Metabolism and Transcriptional regulation, Parasitic microeukaryotes, Immunometabolism	Dr. Abhishek Subramanian

Minimum Eligibility Criteria

Eligibility

- MTech in any area of Life Sciences/Biotechnology/Physical Sciences
- MSc degree in any allied area of Life Sciences/Biotechnology, Physical or Chemical Sciences and possessing a valid National level JRF qualification (or) qualified GATE (need not be valid).
- BTech/BE in any allied area of Life Sciences/Biotechnology/Physical Sciences (or) MBBS and qualified GATE (need not be valid) or with a valid National level JRF qualification.

Candidates should also possess:

- General category: at least 63% marks in the highest qualifying degree
- OBC category: at least 62% marks in the highest qualifying degree
- SC/ST category: at least 60% marks in the highest qualifying degree
- For those who have not yet completed their qualifying examination, the marks obtained up to the 3rd semester for M.Sc./M.Tech. and 7th semester for B Tech/BE Students will be considered.

Category of admission

I. Full-time Institute Fellowship (funded by MoE): Any candidates with MTech/MSc/BTech/MBBS degree can apply.

II. Fellowship from external funding agency: Candidates with valid CSIR-NET-JRF/UGC-NET-JRF/ICMR-JRF/DBT-JRF/ (Category-I) award or any other equivalent national level qualification for research fellowship (e.g., DST-INSPIRE fellowship) can apply under this category.

<u>Notes:</u>

1) Ensure that you qualify for all eligibility criteria before applying. The department reserves the right to set any cut-off criteria for shortlisting the candidates.

Selection Procedure

- Candidates will be shortlisted according to the criteria set by a shortlisting committee.
- Only shortlisted candidates will be called for an online interview.
- Selection to the Ph.D. program will be based on the performance in the online interview.
- Request to change the interview date/time will not be entertained.

Interested candidates can apply online through IIT Hyderabad's website:
http://www.iith.ac.in/phdadmissions/

For any further information, please contact by email:
phd_biotech@iith.ac.in

Note: *The department has the right not to select any candidate if appropriate candidates are not found.*

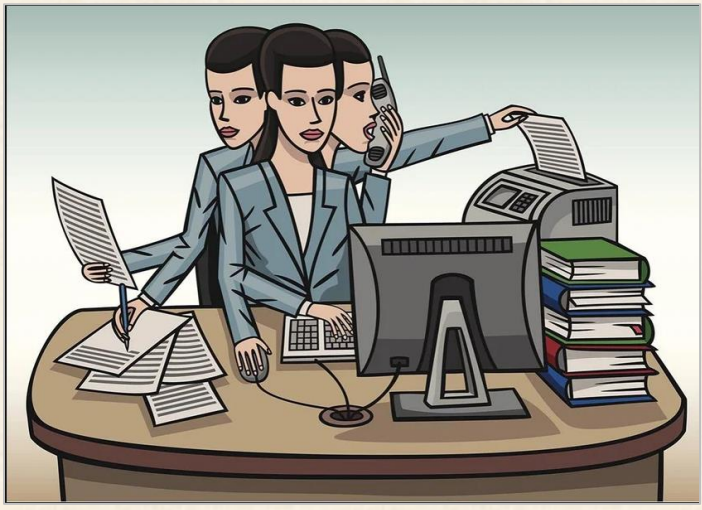
Career Prospects

Biomedical Research

Teaching

Pharmaceuticals and Healthcare Industries

Science Writers Science Communicators



Top Companies and Institutes

NIH National Institutes of Health

Indian Institute of Science भारतीय विज्ञान संस्थान

Pfizer

MERCK

Roche

Harvard University

ThermoFisher Scientific

Bio-Rad

Novartis

University of Cambridge

Stanford University

gsk GlaxoSmithKline

University of Oxford

Lilly

Massachusetts Institute of Technology