

DEPARTMENT OF BIOTECHNOLOGY **RESEARCH THRUST AREAS**

To strengthen departmental research, a Centre for Emerging Diseases, and a Research group (Plant & Microbial Biotechnology) have been formed:

Centre for Emerging Diseases

Centre for Emerging Diseases” addresses the questions of molecular mechanism/pathogenesis/host pathogen interactions of emerging and re-emerging viral (Chikungunya & Chandipura) and bacterial pathogens (*Mycobacterium* and others) and life style diseases such as obesity & diabetes, cancer, cardiovascular and CNS disorders using both wet laboratory and tools of computational biology/bioinformatics (genomics, proteomics and evolutionary approaches). Research emphasis is also on peptide based therapeutics, regulatory peptides, biosensor and ELISA based diagnostics, and drug encapsulated nanoparticles and nanoemulsions.

Thrust area includes

- Disease and Omics Technology
- Bioinformatics
- Nanotechnology
- Industrial Biotechnology
- Medical Biotechnology
- Pharmaceutical Biotechnology

<http://www.jiit.ac.in/sites/default/files/Centre%20for%20Emerging%20Diseases-1.pdf>

Plant & Microbial Biotechnology

Plant & Microbial Biotechnology group addresses growing concern over environmental pollution, depleting natural resources and increasing demand of natural bio-products of therapeutic and industrial importance (food flavours-microbial production of Vanillin and probiotics; enzymes -Laccase, protease, tannase, polyphenol oxidase, keratinase from microbial sources, biosynthesis of chitosan, cellulose from microbial sources for bioprocess applications, bio-inoculants of plant and microbial origin for plant growth promotion and antibiosis, microbial remediation of organophosphate pesticides, biocatalyst for the removal of nitrogen and sulphur from petroleum products, phytoremediation of heavy metals-copper (Cu) and lead (Pb); screening for antimicrobial compounds-peptides/antibiotics).

Thrust area includes

- Bioremediation
- Bioresources
- Environmental Biotechnology
- Plant and Agriculture Biotechnology
- Pro- and Prebiotics
- Food Biotechnology
- Microbial Biotechnology

<http://www.jiit.ac.in/sites/default/files/Research%20group-PMB-2018.pdf>