Available PhD Research Areas at JBMSHST

Specialisation	Research Areas
Biomedical Instrumentation and engineering	• Biomedical Instrumentation and Electronics: Circuit Design/RF Engineering for wide range of MRI applications, Hardware Development for Next-Generation MR Imaging Systems, POC diagnostic instrument design • Biomedical Devices and Sensors; Disease Diagnostics; Biomedical Imaging and Analysis; Development of MRI Contrast Agents; Microfluidics; Nanoelectronics; Nanobiotechnology • Immunoassay; Organ-on-a-Chip; Lab-on-a-chip; Hemodynamics; Drug-cell interaction; biomineralization; cancer cell adhesion; cancer cell metastasis; lateral flow assay; ELISA • Biofluid Dynamics; Computational Fluid Dynamics (CFD); Point-of-Care-Devices; Simulation of Medical Devices; Biomineralization; Active Matter Flows; Microbe Transport in Blood
Biomaterials and Regenerative Medicine	• Functional polymers, Mucoadhesive, Artificial Mucus, Virus inhibitors, Single-chain nanoparticles, Self-healing Hydrogels • Tissue Engineering; In-vitro Disease Models for Drug Screening; Cancer Biology and Stem Cells; Regenerative Medicine, regeneration biology and Stem Cells; Expanded Genetic Code • Biomaterials; Artificial Limbs and Prosthetics; Biomechanics; Transport Processes in Physiological Systems; Medical Waste Disposal and Degradation; Cardiovascular Science and Engineering
Molecular and Chemical Biosciences	• Molecular Biophysics; Chemical Biology; Tox Screening of Phytochemicals/Drugs; Site-specific Protein Modification, Mathematical modeling and simulations of Biomolecules; • Bioorganic, Bioinorganic and Medicinal Chemistry; Drug Delivery; Environmental Health and Toxicolog
Computational and Systems Health Sciences	• Health Data Science and Analytics; Preserving Privacy in Health Data Sharing; Ergonomics and Design for Healthcare; Quantum Technology for Healthcare Applications • Molecular Neuroscience and Cancer Neuroscience, Pharmacology and Toxicology, Large-Scale Genomics and Transcriptomic Data Analysis, Cheminformatics, Protein Engineering