

**Faculty Interdisciplinary Research Project (FIRP)**

<b>Project no.</b>	<b>PI</b>	<b>Short Title</b>	<b>Co-PI</b>
4	Shalini Gupta	Antimicrobial activity of polymyxin B and sushi peptide-nanoparticle bioconjugates on extra- and intracellular Gram-negative bacteria	Neetu Singh
6	Pranaba Kishor Muduli	Spin Injection in 2D-Material Transistor for Semiconductor Based Spintronic Devices	Samaresh Das
7	Jayant Jain	Development of light weight Mg-Y alloy for transportation and bio-tribological applications	Deepak Kumar, Sujeet Kumar Sinha, Neetu Singh
8	Sunil Kumar Khare	Development of heat stable asparaginase for processing of fried and baked foods with reduced genotoxic and carcinogenic acrylamide	Prof. Prashant Mishra, Prof. S N Naik, Dr. Bishwajit Kundu, Dr. Vivekanandan Perumal
13	Pushpapraj Singh	Magnetic Tunnel Junctions as Sensing Element for MEMS based force sensor	Pintu Das
14	Ashok Kumar Patel	Targeting signal transducer and activator of transcription protein STAT3 for the development of novel anticancer agents	B Jayaram
16	Ravi Shankar	Development of a decision support system(DSS) for yarn engineering and yarn cotton fibre grading	Abhijit Mujumdar
18	Manidipa Banerjee	Synthertic clathrin-like biomimetic assembly	V Haridas
21	Leena Nebhani	Novel partially green polybenzoxazine resins for replacement of phenolic resins	Jayashree Bijwe
26	Kedar Khare	Super-resolution 3D fluorescence microscopy	Sameer Sapra
29	Nomesh Bhojkumar Bolia	Data Driven Legal Reforms	Mausam
31	Arun Kumar	Understanding effect of volatile organic compounds on human lung cell in an environmental chamber	Mukesh Khare, Vivekanandan Perumal
33	N. G Ramesh	Synthesis of Novel Carbohydrate derivatives and studies on their anti-amyloid, anti-cancer and anti-infective properties	Shashank Deep
36	Sandeep Kumar Pathak	Fabrication of efficient and long-term outdoor stable perovskite solar cells: Exploration of hydrophobic HTM?	Josemon Jacob
40	Divesh Bhatia	Development of a lean NOx trap for reducing NOx emissions from a H2 engine	Dibakar Rakshit, L M Das
42	Naresh Varma Datla	Study of tissue device interactions to assist development of an endo-rectal prostate needle-biopsy system	Sitikantha Roy
43	Jitendra Pratap Singh	Bio-inspired textured surface for directly reduced sliding friction fabricated by glancing angle deposition	Nitya Nand Gosvami

45	Pulak Mohan Pandey	Development of rotary ultrasonic bone drill prototype for orthopaedic and trauma surgery	Jyoti Kumar
47	Tapan Kumar Chaudhuri	Investigation of the effects of potential natural product based inhibitors and molecular chaperones on the amyloid formation by Beta-2 Microglobulin: Exploration of possibilities for controlling Haemodialysis related amyloidosis (HRA)	Shashank Deep
50	Ashish Kamalakar Darpe	Development of a self-diagnosing smart bearing	Subrat Kar
51	Venlata Ramana Gunturi	Assess the suitability of aged municipal solid waste for recycling in bulk geotechnical applications such as in embankments and filling of low-lying areas	Manoj Datta, Arvind Kumar Nema, T R Sreekrishnan
53	Vigneswara Ilavarsan	ICT ecosystem, SMS based Agro-Met information & Productivity of Farmers: An Exploration	Upasna Sharma
56	Subrat Kar	Development of optical measurement techniques for measurement of slow landmass displacement to predict landslides	Gufran Sayeed Khan
61	Sudip Kumar Pattanayek	Detection of Pesticides by using portable paper-based sensor	V Haridas
62	Rajendra Singh Dhaka	Growth and Characterization of cathode materials for Na-ion batteries	Suddhasatwa Basu
63	Anup Singh	To study changes in knee cartilage characteristics using MRI under different loads in healthy and patients and develop patient specific simulation model for load distribution prediction	Amit Mehndiratta, Sitikantha Roy
64	Ankur Gupta	Sensor Interface Circuit and System Design	Shouribrata Chatterjee
65	Deepak Joshi	A data driven musculoskeletal model for lower limb injury investigation	Dinesh Kalyanasundaram, Bijaya Ketan Panigrahi
66	Ramachandra Rao Kalalga	Pedestrian detection system for improving capacity and service quality of urban transport infrastructure	Geetam Tewari, Subhashis Banerjee, Sudipto Mukherjee
68	Bhaskar Mitra	Design and fabrication of polymer piezo valves for microfluidic large scale integration (mLSI)	Sitikantha Roy, Madhusudan Singh
69	Anushree Malik	Customizing Nanoemulsions for optimal algal biomass production and CO2 sequestration	Vikram Singh
71	Varsha Singh	Mind-Body and Cognition: Understanding Effects of Meditative Practices on Cognitive and Physiological Measures.	Dr. Rahul Garg, Dr. Sanjeev Jain
73	Krishna Mirle Achutarao	Climate Science and Policy: Inter-linkage for greater impact	Ambuj D Sagar, Somnath Baidya Roy

74	Mohammed Ali Haider	Integrated bio- and chemo-catalytic conversion of 6- amyl-alpha-pyrone to fuels and chemicals	Atul Narang
76	Manan Suri	Advanced Hybrid Memory Architectures (AHMA)	Preeti Ranjan Panda
77	Ashish Misra	Development of microdevices employing streptavidin(SA) biotin affinity and yeast surface display(YSD) for facile detection of infectious diseases	Bhaskar Mitra
79	Richa Kumar	Exploring the linkages between Food Consumption and Malnutrition in select Agro-ecological Regions of India	Ankush Agrawal
81	Sandeep Kumar Jha	Paper fluidics based dopamine detector	Suddhastwa Basu