

Ms. Sreesha M	Valorization of Residual Ligno- Celluloses from Anaerobic Digesters through Product Recovery
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MATERIALS ENGINEERING	
Ms. Aparajita Pramanik	Effect of copper on strength of Super304H austenitic stainless steel
Mr. Udayagiri Sai Babu	Atomistic Simulation of Grain Boundary Effects on Cascade Damage in Vanadium
Mr. Venkata Vamsi Koruprolu	Planar Fault Energies in L12 Compounds
Mr. Kaustubh Venkatraman	Testing Methodologies for Porbing Site Specific Fatigue Response of Graded Coatings
Mr. Senthilkumar S	Studies on Internal Reforming Solid Oxide Fuel Cell
Mr. Sumit Bahl	Nanoscale surface engineering of metallic biomaterials for enhancement of mechanical and biological responses
Mr. Gopakumar P	Influence of surface topography and tribosystem on reciprocating friction in sparsely lubricated contacts
Mr. Rajib Kalsar	Evolution of Microstructure and Texture in Manganese Steels
Mr. Sai Rama Krishna Meka	Engineering Bioactive Polymer / Ceramic Composite Nanofibrous Scaffolds for Bone Tissue Regeneration
Mr. Deepak Sharma	Synergistic Effect of Electromagnetic Forces on the Failure of Pre-Cracked Thin Metallic Conductors
Mr. Sabyasachi Saha	TEM Characterization of Microstructural Evolution of GaN grown by MOCVD on c- Sapphire
Mr. G Hariprasad	Synthesis, Microstructural Stability and High Temperature Deformation of Alumina- carbon Nanotube Composites
Mr. Sambit Bapari	The role of polymer phase on rigidity percolation of ABS-spherical nickel microparticles composites
Mr. Raut Devaraj Krishna	Studies on Fracture in Ductile Bulk Metallic Glasses
Mr. Arul Varman	Organic-Inorganic Hybrid Photovoltaics: Interface Engineering, Fabrication and Characterization
Mr. More Abhishek Mukund	Effect of processing on texture and microstructure in Aluminium-Lithium alloys and its consequences on mechanical properties
Mr. Abishek Sharma	An evaluation of mechanical behaviour of some new high temperature alloys
Ms. Rani Rohini	Electromagnetic interference shielding materials derived from epoxy based nanocomposites
Mr. Goutam Prasanna Kar	Title Structure-Property Correlation in Binary Immiscible Polymer Blends Compatibilized by Mutually Miscible Homopolymer and Carbonaceous Nanoparticles
Mr. Muluaalem Abebe Mekonnen	Structure-Property Correlation Studies on Ca-modified Ba(Ti, Zr/ Sn)O ₃ ceramics
Ms. Vinila N V	Architecting conjugated molecules for band gap engineering and photostability
Mr. Chandra Shekhar P	Development of wrought Mg-Li based alloys with improved strength and ductility

Mr. Biswaranjan Dash	Strain hardening in Extruded Pure Magnesium
Mr. Punit Kumar	Microstructure and Mechanical Properties of a 3D Printed Titanium Alloy
Ms. Shalini Roy Koneru	Modeling Chemistry and Structure of Concentrated Alloys at the Atomic Scale
Mr. Narayan Bastola	Novel Phenomena associated with giant tetragonality in the ferroelectric BiFeO ₃ -PbTiO ₃ system

MECHANICAL ENGINEERING

Mr. S Christopher Solomon	Estimation and Control of Friction in Bulk Plastic Deformation Process
Mr. Navneet Kumar	Evaporation of water from soil-like, leaf-like surfaces and unconventional porous media
Mr. C. Uma Shankar	Novel Manufacturing Technique of Metal Foams by Mechanical Processing of hollow spheres
Mr. Kishore Singh Patel	Liquid bridge breakup and detachment dynamics investigated using dynamics domain multiphase flow simulations
Mr. Subrahmanya Prasad Narla	Experimental and numerical studies on Mode-I ductile fracture behavior of Magnesium
Mr. Manish Agrawal E398	Efficient Simulation Strategies for Electromechanical Systems, Contact Mechanics and Time Finite Elements, within the Framework of Hybrid Finite Elements
Ms. Anbukkarasi R	Studies on Friction Stir Welding of Aluminium AA2024 Alloy to Pure Copper
Mr. Apratim Sanyal	Evaporation driven oscillations and particle agglomeration in pure and complex fluids sessile droplets
Ms. Lavanya Devi A L	Characterization of Corneal Lens of Drosophila melanogaster and its Genetic Mutants using Atomic Force Microscope and Scanning Electron Microscope
Ms. Sudipta Dutta	Development and Characterization of Ordered Magnetic Nano composite
Mr. Jimreeves David M	Flow and Forces on Rigid and Flexible Plates in Unsteady Rotational Motion
Mr. Santosh Kumar	New Mechanical Methods to Join Sheets in Lap and Butt Configuration and Analytical Model to Predict and Improve Clinching Joint Strength
Mr. Anil Das P V	Propulsive Performance of Pitching Foils Investigated with Viscous Vortex Particle Method
Mr. Ghatage Dhairyashil Ragnath	Multiscale modeling and simulation of boundary-driven singular flows
Mr. C. Koteswar Rao	Comparing Point Clouds Measured on Flexible Free-Form Surface in Different Configurations
Mr. Madhu H C	Processing, Structure and Properties of Friction Stir Process Derived In-situ Nano Composites and Foams
Mr. Ashwin K P	Development of a Flexible Actuator and Motion Planning for Endoscopic Robots

CENTRE FOR HIGH ENERGY PHYSICS	
Ms. Surbhi Khetrapal	Aspects of time dependence in quantum quenches
Mr. Parveen Kumar	Quantum dynamics of weak measurements: Understanding the Born rule and applying weak error correction
Ms. Anjani Priyadarshini	Efficient Quantum Algorithms for Linear Algebra Problems
Mr. P.N.Bala Subramanian	Applications of Holography

INSTRUMENTATION AND APPLIED PHYSICS	
Ms. Aswathi R Nair	Textured GateThin Film Transistors and Circuits
Ms. Monalisa Ghosh	Vertically aligned carbon nanostructures using ECR plasma and their applications
Mr. Nagaraju Sykam	Carbon nanomaterials for energy and environmental applications
Mr. Biswajit Medhi	Design and Development of Non-intrusive Optical Probes for Quantitative Analysis of Flow Fields in
Mr. Arunbabu A V	Optical, Structural and Mechanical Characterization of Ultrafast Laser Inscribed Chalcogenide Hypersonic Shock Tunnels waveguides
Mr. R. A. Kranthi Kumar J	Studies on single and two stage Stirling type pulse tube coolers of low and medium capacities including performance enhancement of pressure wave generator and a novel helium recondensation system
Mr. Vijay Uttamrao Petley	Material and Mechanical Aspects of Thin Film Coatings for Strain Sensing Application on Aero
Mr. Dibbyan Mazumder	Non-invasive elastic property recovery of tissue and tissue-like objects from ultrasound excited resonant modes
Ms. Kavya M	Light-sheet Lithography for Generating Micro-Nano- Structures
Mr. Nagarjuna Neella	Development of Graphene Metal Nanocomposite Resistive Films for Flexible Sensors and Body Warmer Applications
Mr. Buddha Deka Boruah	Coupled Optical and Electrochemical Properties of ZnCo ₂ O ₄ for Radiation Sensitive Supercapacitor: An Approach Towards Self-powered Photosensitive Energy Storage
Mr. Sri Ram Shankar R	A Probing System for Dynamic Mode Atomic Force Microscopy Based on Specialized Probes
Ms. S. Gayathri	Investigations on the Photo- Striction Effect in Chalcogenide Materials using Fiber Bragg Grating Sensors
Mr. Rex Amalraj	Interplay between the Mechanics of Flexible Substrates and Performance of Thin Film Transistors: Role of Buckled Geometry
Mr. Kumar Saurabh	Force and Shape Estimation using Fiber Bragg Grating Sensor for Assistance in Minimally invasive Diagnostic and Surgical Procedures
Mr. Fazludeen Ruknudeen	On-Board Failure Diagnostics and Failure Prediction of High Power White Light Emitting Diodes used in Safety Critical Applications
Mr. Eluru Gangadhar	Novel Microfluidic Techniques for Point-of-Care Diagnostics
Mr. Ravi Verma	Development of cryocooler based high performance Cryosorption pump

MATHEMATICS	
Mr. Manojit Bhattacharjee	Analytic Models, Dilations, Wandering subspaces and Inner functions
Mr. Gaddam Sharat	Numerical Methods for Elliptic Variational Inequalities in Higher Dimensions
Mr. Sandeep K Mody	Computation of Sparse Representations of High Dimensional Time Series Data and Experimental Applications
Ms. Dighe Anasuya Vikas	Studies on Dynamic Plasticity of Ligand Binding Sites in Proteins
Mr. Raghu Bhagavat B R	Structural bioinformatics of ligand recognition in proteins: A large –scale analysis and applications in drug discovery
Ms. Vasundhara	Graph Spectral Methods for Analysis Of Protein Structures
Mr. Rahul S M	A computational systems biology approach for elucidating molecular features of primary and metastatic melanoma
Mr. Shirhatti Vinay Dhruva	Role of Gamma Oscillations in Processing of Natural Stimuli
Mr. Satya Prakash Rungta	Central and Peripheral Correlates of Motor Planning
Mr. Md. Masiur Rahaman	Dynamic flow rules in continuum visco-plasticity and damage models for poly- crystalline solids

PHYSICS	
Mr. Achintya Bera	Topological Insulators and Transition Metal Dichalcogenides Under Extreme Conditions: Optical Studies
Mr. Baban Radhakrishna Wagh	Deterministic Two Stage Clonal Expansion Model of Breast Cancer Epidemiology and its Utility for Optimal Screening Policies in India
Mr. Kingshuk Sarkar	Studies of Diamagnetism and Thermoelectric Transport in High Temperature Superconductors and Graphene
Mr. Avradip Pradhan	Study of Photo-generated Charge Transport in Graphene-based Hybrid Structures
Ms. Rasmi C.K.	Rapid light sheet fluorescence microscopy for dynamic imaging of living organisms
Mr. Satyendra Nath Gupta	Iridates, Black Phosphorus, Weyl and Dirac Semimetals
Ms. Srabani Kar	Ultrafast Photoexcited Carrier Dynamics in Low Dimensional Systems Probed by Time Resolved Terahertz Under Extreme Conditions: Raman Study Spectroscopy
Mr. Adhip Agarwala	Excursions in ill condensed quantum matter from amorphous topological insulators to fractional spins
Mr. Deovrat	AGN feedback in galaxy clusters Controlling cooling flows in galaxy clusters by momentum-driver AGN jets
Mr. Rituparno Mandal	Glassy Dynamics in Active Matter
Ms. Roobala	Biomembrane heterogeneity and its role in nanoparticle binding & structure formation: Insights from FCS in confocal and STED mode
Mr. Pushpander Kumar	Hyperfine measurement and laser spectroscopy in lithium and ytterbium atoms
Mr. Ramesh Bhujangrao Kamble	Tuning of electrical and magnetic properties in nanocomposites of conductive LaNiO ₃ and transition metal oxides

Mr. Kazi Rafsanjani Amin	Conductance Fluctuations in High-mobility Graphene Field Effect Transistors
Mr. Saientan Bag	Charge Transport in Molecular Systems
Mr. Pumlianmunga	Influence of local structure and network connectivity on electrical switching of some Te- based chalcogenide glasses
Mr. Khare Harshavardhan Madhav	Computational studies on non- globular proteins: Intrinsic disorder in tails of DNA-binding proteins & Design of modulators of Amyloid – β aggregation
Mr. Santosh Kumar Chaudhary	Structural and functional studies on DNA synthesis and repair proteins
Mr. Anustuv Pal	Studying bubbles in liquid He4 containing single and many electrons
Mr. Rakesh M	3D Dosimetry using optical tomography and electronic portal images
Mr. Aabhaas Vineet Malik	The role of quantum fluctuations in the t-J model: Implications for cuprate superconductors
Ms. Tanushree Sarkar	Exploration of multiferrocity, emergence of exchange bias effect and glassy magnetism in doped hexagonal rare-earth manganites
Mr. Harsh Bansia	Facets of cryptic elements present in protein structures: Implications in substrate recognition, catalysis and drug- design Structural basis for neutralization of ribosome- inactivating proteins by their monoclonal antibodies
Mr. Arijit Halder	Studies in Strongly Correlated Systems: From Ultracold Superfluids to Strange Metals
Mr. Abhishek Banerjee	Engineering topological surface states through structural control, electrostatic gating and superconducting proximity effects
Mr. Chandan Kumar	Quantum transport in Graphene Moire Superlattice and p-n junction
Ms. Kunjalata Majhi	On the electrical transport of weak topological insulators and Weyl semimetals
Mr. Abir Sarkar	Probing the Nature of Dark Matter In The Universe
Ms. Susmitha Rani Antony	Study of stellar relics from the early Galaxy
Mr. Saurabh Singh	Observational Constraints on Global 21-cm Signal from the Epoch of Reionization
Ms. Vidhya G	Geometrical and topological properties of CMB polarization fields
Mr. Mohana Krishna R	Hyperspectral and Spectropolarimetric Instrumentation for the Solar Atmosphere

6.11.2 INT. PHD

CENTRE FOR ECOLOGICAL SCIENCES

Ms. Manvi Sharma	On trait evolution in a heterogeneous environment: Oviposition site selection in a mosquito in response to multiple risk factors
Mr. V. Vignesh	The evolutionary ecology of dispersal in fig wasp communities

MOLECULAR BIOPHYSICS UNIT

Ms. Joshi Anuja Chintamani	Influence of the substrate specificity of Mycobacterium tuberculosis ClpX on the transcriptional profile
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Ms. Sneha Vishwanath	Multi – faceted modular interactions in proteins
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MICROBIOLOGY AND CELL BIOLOGY

Ms. Aanchal Katoch	Regulation of expression of p53 and its isoform $\Delta 40p53$: Consequences on cellular gene expression
Mr. Pratik P Dave	Understanding the regulation of translation and replication of Coxsackievirus B3 RNA by host RNA binding proteins
Ms. Anjali Arora	Improving Glioblastoma Management: A Study of Biomarkers, Tumor Microenvironment and Chemoresistance

MOLECULAR REPRODUCTION DEVELOPMENT AND GENETICS

Ms. Mohini Lahiry	Regulation of Notch signalling by hypoxia and AMPK in breast cancer
Ms. Ketaki Kamble	Dissecting the role of Ataxin 2 Binding Protein 1 in sarcomeric protein stoichiometry and generation of muscle diversity in <i>Drosophila melanogaster</i>
Mr. Vignesh Narayan H	Biochemical and functional characterization of the Mycobacterial PdtA-S-PdtA Two Component System
Mr. Kulkarni Ankur Hemant	Influence of TGF - β on Mechanobiology of Human Breast Cancer Cells

INORGANIC AND PHYSICAL CHEMISTRY

Mr. Rohit Jain	Anomalous Diffusion in a Rearranging Medium Diffusing Diffusivity Models
Mr. Prodip Howlader	Organic Transformations in the Confined Cavity of Self- Assembled Pd(II) Molecular Containers

MATERIALS RESEARCH CENTRE

Ms. Dipanwita Chatterjee	Insights into Nucleation, Growth and Shape Control For Designing Anisotropic Nanostructures And Heterostructures
Mr. Sourav Mandal	Fabrication, micro-computed tomography based quantitative 3D microstructure evaluation of 3D printed bioceramic scaffolds and FE modeling of biomedical implant prototypes

ORGANIC CHEMISTRY

Ms. Mohini Kamra	Achieving Efficiency and Specificity in Multifarious Systems for Anti-cancer Gene Therapeutics
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SOLID STATE AND STRUCTURAL CHEMISTRY UNIT

Ms. Asampille Gitanjali	Study of a Self-assembling Polypeptide Nanotube: Structure, Dynamics and Applications in Cancer and Tissue engineering
Mr. Shaunak Chakraborty	Tuning Crystal Structures with weak Interactions: From solid solutions to Stoichiometric Cocrystals
Mr. Sounak Sarkar	High-resolution Charge Density Studies on Electronic Nature of Weak Interactions and Correlation of Molecular Conformation with Packing in Solid State

Mr. Milan Kumar Hazra	From collective relaxation phenomena to phase separation in binary mixtures and some contributions to the hydration dynamics in the vicinity of biologically active molecules
Mr. Tamilselvan M	Metal Sulphide Based Semiconductors for Solar Photon Energy Harvesting

CENTRE FOR HIGH ENERGY PHYSICS

Mr. Subham Dutta Chowdhury	Aspects of conformal field theories at finite temperature
Ms. Ranjani Seshadri	LIVING ON THE EDGE A STUDY OF BOUNDARY MODES IN Two-Dimensional Topological Systems
Mr. Shayan Ghosh	Analytical Mellin-Barnes techniques with applications to two-loop SU(3) chiral perturbation theory and QED at higher loops

PHYSICS

Ms. Sabiha Majumder	Multiple stable states and abrupt transitions in spatial ecosystems
Mr. Gopi Nath Daptary	Electronic transport in low dimensional LaAlO ₃ /SrTiO ₃ heterointerface

6.11.3 MASTER OF SCIENCE, MSC (ENGINEERING)

BIOCHEMISTRY

Ms. Shirish Gajanan Gole	Understanding the role of Lsm domain in translation repression activity of RGG- motif containing protein Scd6
Ms. M Gayatri Devi Namala	1.Uncovering the role of NFS1 in Fe-S cluster biogenesis and in the development of Infantile mitochondrial complex II/III deficiency (IMC23D) disease progression & 2. Screening single domain antibody (VHH) against a membrane transporter

CENTRE FOR NEUROSCIENCE

Mr.Bodhisatwa Chaudhuri	Maternal Immune Activation Perturbs gene expression in the embryonic brain leading to Autism Spectrum Disorders
Mr. Debajyoti Das	A β 42-mediated dendritic spine loss in an in vitro model of Alzheimer's disease

COMPUTER SCIENCE AND AUTOMATION

Mr. Akshay mehra	Deep Learning Models for Few-shot and Metric Learning
Mr. Arpith K	IO Pattern Aware Methods to Improve the Performance and Lifetime of NAND SSD
Mr. Himanshu Arora	Checking Observational Purity of Procedures
Ms. Shivika Narang	Design of Trusted Market Platforms using Permissioned Blockchains and Game Theory
Mr. Priyanka Singla	Handling Overloads with social consistency
Mr. Pratik Sarkar	Adaptively Secure Primitives in the Random Oracle Model
Mr. Ishan Rastogi	Active Learning for Efficient Testing of Student Programs
Mr. Pratik Sarkar	Adaptively Secure Primitives in the Random Oracle Model

Ms. Kumudha K N	Optimizing Dense Matrix Computations with PolyMage
Mr. Nitesh Tripathi	Guarding Terrain using k- Watchtowers

ELECTRICAL COMMUNICATION ENGINEERING

Mr. Sai Gunaranjan Pelluri	Joint spectro-Temporal Analysis of Moving Acoustic Sources
Ms. Sireesha Madabhushi	Optimal Routing and Data Transmission For Multi-Hop D2D Communications
Mr. Sanidhay Bhambay	Differential Encoding for Real- Time Status Updates
Ms. Reneeta Sara Isaac	Correlation-Aware Splitting Algorithms for Opportunistic Selection
Mr. Vaibhav Monga	Synthesis of conformal Antenna Arrays on Polygonal Cross-Sectional Cylindrical conductors for 360 Degree Azimuth Coverage Applications
Mr. Pavan C M	Subjective and Objective Quality Assessment of Stitched Images for Virtual Reality
Mr. Singh Kamalesh Satyadev	0.5V Subthreshold Region Operated Ultra Low Power Passive Sigma Delta ADC in 180NM CMOS Technology
Mr. Abhilash B	Wireless Channel Modeling for Drone to Ground 2.4 GHz link
Ms. Pampala Ravali	Integrated Optical Double Ring Resonators with MEMS for Pressure and Acceleration Sensing

ELECTRICAL ENGINEERING

Mr. Soubhik Sanyal	Discriminative Descriptors for Unconstrained Face and Object Recognition
Mr. Nair Pravin Ramachandran	Fast High-Dimensional Filtering
Mr. Miraj Ahmed Shaikh	Multiview Registration Using Rank-Constrained Semidefinite Programming
Ms. Disha L Dinesha	Application of Semi Analytical Methods for Large Power System Simulations
Mr. Gavaskar Raturaj Girish	A Fast Constant –Time Approximation for Locally Adaptive Bilateral Filtering
Mr. Himanshu Kumar	Robust Risk Minimization under Label Noise
Mr. Manu Ghulyani	Fast total variation minimizing image restoration under mixed Poisson-Gaussian noise
Mr. Girija Ramesan Karthik	Binaural source Localization using subband reliability and interaural time difference patterns
Mr. Pavan Subhaschandra Karjol	Speech enhancement using deep mixture of experts
Mr. Abhilash Jain	Visual Speech Recognition

ELECTRONIC SYSTEMS ENGINEERING

Ms. Divya R	Optimal Mobile Assisted Offloading and Network Price Differentiation
Mr. Chethan Kumar M	First Principles Based Mobility Estimation of Graphene

COMPUTATIONAL AND DATA SCIENCES	
Mr. Dindokar Ravikant Devidas	Modeling and Adaptive Scheduling Strategies for Distributed Graph Algorithms
Mr. Rintu Panja	A Divide and Conquer Framework For Graph Processing in Distributed Heterogeneous Systems
Mr. Abhilash Anuj Sharma	Optimization of Traversal Queries on Distributed Graph
Mr. Surya Kant Garg	Migrating VM Workloads to containers: Issues and Challenges
Mr. Dween Rabius Sanny	Development of advanced regularization methods to improve photoacoustic tomography
Mr. Rahl Raj Kumar Morkhande	Characterization of Divergence resulting from Workload Memory and Control-Flow behavior in GPGPU Applications
Ms. Prateeksha Varshney	Reliable and Efficient Application Scheduling on Edge, Fog and Cloud
Ms. Shilpa Chaturvedi	Efficient and Resilient Stream Processing in Distributed Shared Environment

AEROSPACE ENGINEERING	
Mr. Brindaban Mahto	Characterization of cure residual strain in CFRPs
Ms. Versha Gagan	Two Problems on the Parametric Resonances and Bifurcations in Rotating Beams
Mr. Bondapalli Akhilesh Prasad	Investigation on Impinging Shock Wave and Boundary Layer Interactions in Hypersonic Flow
Mr. Abinash M	Lagrangian Flame Element Analysis of Turbulence- Premixed Flame Interactions
Mr. Aneesh Bhattacharyya	Propagation characteristics in elastic waveguide with discrete nonlinearity
Mr. Premjit Saha	A Generalised Modelling of Piezoelectric Composite shells and Plates Using Variational Asymptotic Method
Mr. Yash Raj Sharma	Bearings-Only Information Based Guidance Law for Trajectory Shaping Applications
Mr. Srivatsa Bhat K	On the isospectrals of Rayleigh and Timoshenko beams and a new version of Bresse- Timoshenko equations
Mr. Patel Rabi Bharathbai	A Study on the Influence of Reduced Electric Field on Plasma Assisted Combustion Kinetics
Mr. Kannan M	Rotational Temperature Measurement in Hypersonic Shock Tunnel using Tunable Diode Laser Absorption Spectroscopy
Ms. Charulatha M	Model and Non-modal Stability of a Swirling Jet with Vortex Breakdown
Mr. Yogeshwaran G	On Flow Physics of Spinning Samaras
Mr. R B Gowtham Srinivas	An advection velocity correction scheme for interface tracking using the level-set method
Mr. Direndu Somani	Design of Planar Supersonic Wind Tunnel Nozzle

CHEMICAL ENGINEERING	
Mr. Amit Behera	Molecular Dynamics Simulations reveal the role of membrane cholesterol in the pore forming pathway of Cytolysin A

Mr. Amar Kumar Garg	Quality-quantity trade off during antibody production and the design of optimal passive immunization protocols
Ms. Suddhapalli Sita Kalyana	Study of solvent Induced Crystal Polymorphism via Molecular Simulations of Crystal Nucleation

CIVIL ENGINEERING

Ms. Mehek Biswas	A Integrated Choice and Latent Variable Framework to Incorporate the Influence of Travel Time Variability on Truck Route Choice
Mr. Akash Gupta	Interference Effect of Closely Spaced Square Footings on Geocell Reinforced Sand and clay Beds: Experimental and Numerical Studies

CENTRE FOR SUSTAINABLE TECHNOLOGIES

Mr. Rohit Borooah	Investigations into Incineration of Sanitary Napkin Waste Using Single Chamber Incinerator
Mr. Amit Kumar	Preliminary Investigation into the Cold Plasma Powered Water Gas Shift Reaction – experiments and Analysis

MATERIALS ENGINEERING

Mr. Dinesh Singh	Application of Bending Tests for Evaluating Creep Behaviour of 12% Cr ferrite Steel used in Steam Turbine Blades
Mr. Sabban Rushikesh Kailas	Heat Treatment and Surface Engineering of Selective Laser Melted Ti-6Al-4 for Improved Performance in Biomedical Implants
Mr. Ananthan M	Multiscale Simulations in Multiphase Flows

MECHANICAL ENGINEERING

Mr. Arkadeep Narayan Chaudhury	Kinematic Design and Optimal Synthesis of Parallel Manipulators using Monte Carlo Method
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INSTRUMENTATION AND APPLIED PHYSICS

Mr. Suryansh Dongre	Crystalline Silicon Carbide Thin Films for Ultraviolet Detection
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MATHEMATICS

Mr. Himanshu Gupta	Correlation Functions in the Finite Toom Model
Ms. Kriti Sehgal	Duality for Spaces of Holomorphic Functions into a Locally Convex Topological Vector Space

Physics

Mr. Anubha Shokhand	Turbulent Mixing of Multiple- Passive-Scalars
Mr. Sayantan Ghosh	Tenfold Classification for Interacting Fermions and Relation with Homogeneous Spaces

7

Events



7.1 Institute Lectures

J R D TATA CHAIR AWARD LECTURE

J R D Tata Chair Award Lecture on “Multi Scale Modeling of Complex Fluids: from Molecular Structure to Flow Properties” By Professor V Kumaran, Dept. of Chemical Engg., IISc.

J N TATA CHAIR LECTURE

J N Tata Chair Lecture on “A New Generation of Miraculous Photovoltaic Materials: Organic-Inorganic Hybrid Perovskites” By Professor D D Sarma, J N Tata Chair Professor, Solid State and Structural Chemistry Unit (SSCU), IISc

SIR C V RAMAN MEMORIAL LECTURE

Lecture on “The disorder created by entropy is in the mind” By Professor Daan Frenkel, Department of Chemistry, Cambridge University, UK.

ecture on “Topological Quantum Matter, Entanglement, and a Second Quantum Revolution” By Professor F. Duncan M. Haldane, Noble Laureate in Physics 2016., Sherman Fairchild University Professor of Physics, Princeton University,

ACADEMY PUBLIC LECTURE

Indian Institute of Science & Indian Academy of Sciences, Jointly organized the Joint Academy Lecture (ACADEMY PUBLIC LECTURE) on “The Art of Building Small” By Professor Ben Feringa, The Jacobus van't Hoff Distinguished Profesor of Molecular Sciences at Stratingh Institute for Chemistry, University of Groningen, Netherlands.

SATISH DHAWAN VISITNG PROFESSOR LECTURE

Visitng Professor Special Lecture on “Respondent driven Sampling and Dynamics of Dense Networks” Professor Siva Athreya, Indian Statistical Institute.

CNR RAO ENDOWMENT LECTURE

CNR Rao Endowment Lecture on “Quantum Entanglement” By Professor Sandip Trivedi, Director, Tata Institute of Fundamental Research, Homi Bhabha Road, Colaba, Mumbai.

HOMI BHABHA CHAIR PROFESSOR LECTURE

Homi Bhabha Chair Professor Lecture on “A Journey through active matter” By Professor Sriram Ramaswamy, Dept. of Physics, IISc.

IISc-SID BUSINESS LEADER LECTURE

IISc-SID Business Leader Lecture-2018 on “Translation of Science into Products and Business in the Life Sciences Sector” By Dr. Ganesh Kishore, Co-founder and Managing Partner of Spruce Capital Partners, San Francisco, California, USA.

INFOSYS SCIENCE FOUNDATION LECTURE

Infosys Science Foundation Lecture by Infosys Prize Laureate on “Computational Insights into the Role of Micro-RNAs in Cancer” by Professor Sanghamitra Bandyopadhyay, Director, Indian Statistical Institute, Kolkata.

INFOYS PRIZE LECTURES

Lectures Hosted by IISc on “Outside-in How we perceive the World” By Professor Shubha Tole, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, Infosys Prize 2014 Laureate – Life Sciences.

Lectures on “DNA – DREAM MACHINES” By Ms Yamuna Krishnan, Department of Chemistry & Grossman, Institute of Neuroscience, Quantitative Biology and Human Behaviour, The University of Chicago.

SIR VITHAL N CHANDAVARKAR MEMORIAL LECTURE

Sir Vithal N Chandavarkar Memorial Lecture on “Asian Geopolitics Today” By Ambassador Nirupama Rao.

REVATI AND SATYA NADHAM ATLURI CHAIR AWARD LECTURE

Revati and Satya Nadham Atluri Chair Award Lecture on “Dendrites: Active Trees in the Brain” By Dr Rishikesh Narayanan, MBU, IISc.

M CT M CHIDAMBARAM CHETTIYAR MEMORIAL LCTURE

M Ct M Chidambaram Chettiyar Memorial Lcture on “The making of A New India” By Dr. Bibek Debroy, Chairman, Economic Advisory Council to the Prime Minister of India.

INSTITUTE COLLOQUIA

Life in and around microcosms, by Prof. Renee M. Borges, Centre for Ecological Sciences, Jan 22, 2019, (Biological Sciences)

Interfacial Electrochemistry: Modified Surfaces and Multifunctional Catalysts, by Prof. S Sampath, Department of Inorganic and Physical Chemistry, Apr, 25, 2019, (Chemical Sciences)

The Physics of Computation: Directions from the Quantum World by Prof. Apoorva D. Patel, Centre for High Energy Physics, Sep 20, 2018, (Physical and Mathematical Sciences)

Oct 22, 2018, Shocking! – Yet True ..., by Prof. Gopalan Jagadeesh, Department of Aerospace Engineering, Oct 22, 2018, (Mechanical Sciences)

The future of wireless and what it will enable, by Prof. Andrea Goldsmith, Nov 2, 2018, (Stanford University)

From Graph Minors to Dimension Theory: Exploring Interconnections by Prof. Sunil Chandran, Nov 26, 2018, (Electrical, Electronics, and Computer Science)

7.2 Conference/ Symposia/ Seminars/ Workshops

Large number of conferences, workshops, seminars and symposia are regularly organized at the Institute. large number of scientists, engineers, educationists take advantage of these. The programmes conducted during the year were:

BIOLOGICAL SCIENCES

Current trends in immune cell biology & immunotechnology, 22-06-2018 (BC)

Viral diseases, 13-12-2018 (CIDR & MCBL)

DBT Workshop on Genome Editing, 24-06-2018 (BC)
 Genome Biology-2018: Mechanisms in Health and Diseases, 13-07-2018 (BC)
 Clinical interaction with St. Johns hospital, 20-07-2018 (All biology departments)
 Clinical interaction with multiple hospitals, 19-05-2018 (All biology departments)
 Big Data and Cancer Precision Medicine, Boston, USA, 1st and 2nd October 2018 (BC)
 Meeting and Seminar, Maryland, USA, 3rd and 4th October 2018 (BC)
 Houston, USA, Society of Inflammation Research – SIRCON 2018, 8th Oct 2018 (BC)
 SPEEC-UP, 31-08-2018 (CES)
 2nd DST-SERB School on Chemical Ecology., July 8 to 22, 2018 (CES)
 Molecular Phylogeny Workshop, 01-08-2018 (CES)
 2nd Annual SERB School in Chemical Ecology, 8th to 22nd July 2018 (CES)
 Students Conference on Conservation Science (SCCS - Bangalore), 26th – 30th Sep 2018 (CES)
 Statistics for Ecologists, 12-01-2018 (CES)
 Symposium on Viral Diseases, 13th December 2018 (CIDR)
 Third Annual Workshop on Biorisk preparedness in laboratory setting, 17th December 2018 (CIDR)
 Bangalore Cognition Workshop, June 18-29, 2018 (CNS)
 Brain, Computation and Learning, Jan 8-12, 2018 (CSA, CNS, CDS, EE, ECE)
 IISc-Penn State joint workshop, Jan 7-8, 2019 (CNS, CSA, CDS, EE)
 Learning about Learning, Online NPTEL Lecture Series, Jan – Mar 2019 (CNS)
 EMBO work-shop on Contrast Transfer Function and CTF Correction. 2018 (MBU)
 Electron Microscope Society of India International Conference on Microscope and XXXIX Annual Meeting of Electron Microscope Society of India, 2018 (MBU)
 Workshop on Computational Approaches to Memory and Plasticity, 2018 (MBU)
 Workshop on Brain, Computation and Learning, 2018 (MBU)
 Workshop on Integrative Modeling of Macromolecular RNA Structures, 2018 (MBU)
 Short course on Recent advances in RNA biology held at Centre for Continuing Education, IISc, 2018 (MBU)
 Short course on Recent advances in genetic engineering and transgenic technology held at Centre for Continuing Education, IISc, 2018 (MBU)
 Workshop on MoFlo XDP High Speed Cell Sorting, May 15, 2018 (MCB)
 Biological Transactions from Molecules to organisms, Jan 17-20, 2019 (MCB)
 National Conference on Virology, Dec 12, 2018 (MCB)
 Hands on Training in BSL3 Practices, Dec 17, 2018 (MCB)
 Annual National Science (Vijyoshi) Camp, Dec 8, 2018 (MCB-KVPY)
 Conducted Science Academy Workshop on Molecular Biology, 2018 (MCB)
 National Workshop on Applications of Non-invasive Technology to wildlife endocrine Assessment, 07-02-2019 (MRDG)

CHEMICAL SCIENCES

CME approaches for Innovation in Biomedical implants, August 10-12, 2018 (MRC)
 New Materials for Healthcare Ideas Generation Workshop, 06-05-2018 (MRC)
 NPTEL Course on Multidimensional NMR Spectroscopy, 19-01-2018 to 30-04, 2018 (NRC)
 Accelerator based photon sources as a versatile tool to probe matter, 27-03-2018 (SSCU)

Recent Advances in Molecular Simulations, 08-02-2019 (SSCU, PHY, CE)
 12th International Conference on Ceramic Materials and Components for Energy and Environmental Applications (CMCEE-12), 22-07-2018 (SSCU)
 Indo-French Laboratory of Solid-state Chemistry Workshop-2018, 17-10-2018 (SSCU)
 Solar Energy Conversion and Storage, 11-06-2018 (SSCU)
 Solar Energy Conversion and Storage, 11-06-2018 to 15-06-2018 (SSCU)

ELECTRICAL, ELECTRONICS, AND COMPUTER SCIENCES

Short Course on Sampling for Signal Reconstruction vs Numerical Integration: Theory and Practice, 27-08-2018 to 31-08-2018 (CSA)
 2nd Cyber-Physical Systems Symposium, CyPhySS 2018, 11-07-2019 (ECE/CSA/EE/CENSE)
 IISc-IACR School on Information Theoretic Cryptography, 4th - 8th Jan 2018 (CSA)
 GIAN Course on Verification of Cyberphysical Systems, 08-01-2018 (CSA)
 Foundations of Machine and Deep Learning, 23-04-2018 (CSA)
 CCE Course (week-long), 30-07-2018 (CSA)
 ICDCN 2019, 04-01-2019 (CSA)
 2019 National Conference on Communications (NCC 2019), Feb 20-23, 2019 (ECE, EE, ESE)
 2019 Croucher Summer Course on Information Theory (CSIT 2019), 22-07-2019 (ECE)
 2018 International Symposium on Cyber-Physical Systems, 01-07-2018 (RBCCPS)
 SOAP Summer School in Optics and Photonics, 21-24 July 2018 (ECE, CeNSE, Physics)
 International Conference on Signal Processing and Communication, 16-19 July (ECE, ESE, EE)
 EECS RESEARCH STUDENTS SYMPOSIUM - 2018, 12-04-2018 (Division of Electrical Sciences)
 Advancements in Electrical Power and Energy Systems Workshop for PGCIL Engineers, Nov 26-30 November 2018 (EE)
 Teaching workshop on DC machines and drives, 1st Jan 2019 (EE)
 Mathematical Optimization Methods for Power Systems, CCE Short Term Course 2018 (EE)
 Digital Control of Power Converters, Workshop, 29th November 2018 (EE)
 Embedded Systems Design for Power Electronic Converters, CCE Workshop, 6th Aug 2018 (EE)
 Power Semiconductor Devices for Power Electronic Converters, CCE Workshop, 23rd July 2018 (EE)
 Interspeech 2018, International Conference, September 2-6, 2018 (EE)
 National level One week course for Ashok Leyland Employees, July 23-28, 2018 (EE)
 Spice 2018, International Workshop, 8th September 2018 (EE)
 Broadcomm Neuromorphic National level Workshop, Hands on Workshop, 25th June 2018 (EE)
 CCE Proficiency Course lectures, Jan-April 2018 (EE)

INTERDISCIPLINARY RESEARCH

Two Session Workshop on Psychology "Self-Explorations" and "Self-Relationships & Society" on February 2nd and 9th, 2019 (CSP)
 Four Session Workshop on "Philosophy of Science" on March 2- 30th, 2018 (CSP)
 Regulating Biotechnology through the Patent System: Learning from the US and European approaches in Comparative Prospective, November 26, 2019 (CSP)
 Implications of IPCC Special report on 1.5 degree, January 11, 2019 (CSP)
 IP Licensing and Technology transfer, January 18, 2019 (CSP)