

38th Annual Students' Symposium - Schedule

Day 1 – 20th February 2025

Time	Talks/Presentations	
9:30 am - 9:45 am	Opening Ceremony & Welcome Address by the Chair	
9:45 am -10:45 am	Keynote Speaker - Dr. S.V. Ramana Murty (Director, GTRE, DRDO)	
10:45 am -11:00 am	High Tea	
	Oral Presentations	
	KI Vasu	KPA
11:00 am -11:15 am	Prasanth Soundappan: Mechanism and mitigation of crack formation in laser based directed energy deposition of γ -TiAl powder	Balpartap Singh: Spacer Cation Rigidity Dictates Structural and Excited State Dynamics in 2D Halide Perovskites
11:15 am -11:30 am	Sourav Maji: Impact of Ge as an alloying addition on microstructure and high-temperature mechanical properties of 2nd Generation TiAl alloy	Mohammed Hadhi PP: Wafer-Scale Solution-Processed 2D-TMD Transistors and Circuits Enabled by Single-Flake Transport
11:30 am -11:45 am	Chethan Konkati: Proton irradiation effects on multi-principal element alloy	Manvendra Singh: Low-temperature fabricated solution-processed diodes for wireless paper electronics
11:45 am -12:00 pm	Raineesh Kp Babu: Room Temperature Creep in Ti6242	Durgesh Borkar: Modulating Band Offset through Interface Engineering of Cu ₂ SnSe ₃ -Based Heterojunctions for Efficient Charge Separation and Collection
12:00 pm -12:15 pm	Sita Choudhary: Effect of process parameters and heat treatment on structure and mechanical properties of directed energy deposited Ti6242	Pooja Punetha: Nature of morphotropic phase boundary in the lead-free piezoelectric systems K _{1/2} Bi _{1/2} (M _{1/3} Nb _{2/3}) _x Ti _{1-x} O ₃ : M = Mg, Zn
12:15 pm -12:30 pm	Sunando Banerjee: Effect of texture, grain boundary constitution, and molybdenum partitioning on corrosion and hydrogen permeation behavior of pulse electrodeposited Ni-Mo coatings.	Amarakonda Chandana Siri: Screen printed micro-supercapacitors on paper with additive-free 1T MoS ₂ ink for sustainable energy solutions
12:30 pm -12:45 pm	Shubham Sisodia: Enhancing fatigue resistance of Cr-Mn-Fe-Co-Ni system by varying composition and sigma-phase assisted grain-size reduction	Kaushal Tiwari: Development of tunable ferroelectric thin films for the bandpass filters in the satellite systems

12:45 pm - 1:00 pm	Divya Nalajala: Towards Single Crystal Growth in CMSX-4 Superalloy Builds Using Laser Directed Energy Deposition	Getaw Abebe Tina: Simultaneous enhancement of d33 and depolarization temperature of the morphotropic phase boundary composition of the Pb-free piezoceramic Na _{1/2} Bi _{1/2} TiO ₃ –BaTiO ₃
1:00 pm - 2:00 pm	Lunch Break	
2:00 pm - 2:50 pm	Invited Talk - Mr. Sankarappa Prasad (Principle Engineer, Underwriters Laboratories)	
	Oral Presentations	
	KI Vasu	KPA
2:45 pm - 3:00 pm	Abhinav Chandraker: Experimentally validated and empirically compared machine learning approach for predicting yield strength of additively manufactured multi-principal element alloys	Vimalkumar S: Upcycling post-consumer recycle of Polyamide 66 by controlling chain scission and crosslinking density
3:00 pm - 3:15 pm	Shiba Sankar Dash: DFT study of hydrogen interstitial solute interaction with dislocations in nickel	Samvidha Das: Design and Investigation of MIL-100 (Fe) Metal-Organic Frameworks for Controlled Drug Delivery
3:15 pm - 3:30 pm	Subramanian R S: Exploring the state-of-the-art in quantum computing for computational materials science	Bharath Sriram Gugulothu: 3D Bioprinted Metastatic Niches of Triple Negative Breast Cancer for Drug Screening
3:30 pm - 3:45 pm	Swapnil Bhure: A Roadmap for Producing Single-Crystal Ni-Based Superalloy Components Using Laser-Directed Energy Deposition	Indranil Dey: Recycling Reinvented: Converting PET Bottle Waste into 3D printable PCR Polypropylene Vitrimers for a Sustainable Future
3:45 pm - 4:00 pm	Ankur Srivastava: Diffusion analysis in binary and ternary Ni-based alloys following Experimental, Density Functional Theory (DFT) and Physics-informed neural network numerical inverse method (PINN)	Nipun Jain: Engineering 3D bio-printed Lung-on-a-Dish platform to investigate Pulmonary Fibrosis
4:05 pm - 4:40 pm	Invited talk - Dr. Chandan Mondal (Scientist 'G', DMRL)	
4:40 pm - 4:50 pm	Tea Break	
4:50 pm - 5:45 pm	Poster and Materialography presentation	

Day 2 – 21st February 2025

Time	Talks/Presentations	
9:30 am - 10:45 am	Keynote Speaker - Prof. Raman Singh (Monash University, Australia)	
10:45 am - 11:00 am	High Tea	
11:00 am - 12:10 pm	Industry – Academia Panel Discussion Dr. T Ramprabhu (Joint Director, DRDO) Dr. Prince Singh (Lead Engineer, Bosch) Dr. Manjini S (Vice President, JSW)	
12:10 pm - 12:45 pm	Springer talk	
12:45 pm - 2:00 pm	Lunch Break	
2:00 pm - 2:35 pm	Invited Talk - Dr. P. Rajamali (Asst. Professor, MRC, IISc)	
	KI Vasu Auditorium	KPA Auditorium
2:45 pm - 3:00 pm	Suraj Kumar: Development of High-temperature DIC (up to 1800 °C) for strain measurements	Arup Kumar Mandal: Understanding Complex Magnetic Interfacial Exchange Interactions and Magnetic Tunnel Resistance Behaviour of Epitaxially Grown SrRuO ₃ /BiFeO ₃ /La _{0.7} Sr _{0.3} MnO ₃ Heterostructure
3:00 pm - 3:15 pm	Vamsi Krishna Pakki: Effect of reduction per pass during high temperature rolling of Mg-1wt%Gd alloy on texture, mechanical and its corrosion properties	Satyam Jena: Harnessing Excited-State Charge Transfer for the Activation of Dark Triplet Excitons and Phosphorescence in Hybrid Organic-Inorganic 2D Perovskite
3:15 pm - 3:30 pm	Darshan C: Creep and Stress Relaxation in Thin Films: Experiments, Modelling, and Materials Science-Based Insights for Reliability Improvement	Shikha Akshay Joshi: Fabrication and analysis of oxide-based ferroelectric gated transistors using the Inkjet-Printing technique
3:30 pm - 3:45 pm	Kalyan D: Development of High strength and High Conductive Cu-based alloys	Bappa Das: Semi solid TIG-based Additive manufacturing of Al-15Mg2Si-4.5Si-0.01Sr0.015B composite
3:45 pm - 4:00 pm	Bavithra M: Enhanced Corrosion Resistance of AZ31 Magnesium Alloy through LDH Coating and 8-Hydroxyquinoline Intercalation	Animesh Mandal: Influence of Transition Metal Doping on the Exciton Dynamics in All-Inorganic Metal Halide Perovskite
4:00 pm - 4:15 pm	Gudeta Jafo Muleta: Simultaneous increase of d33 and Curie point of PZT by dilute rare earth doping: the phenomenon and the mechanism	Sachin Latiyan: 4D printing of sericin: Transition from textile waste to medical wealth
4:15 pm - 4:30 pm	Tea Break	
4:30 pm - 5:30 pm	Closing Ceremony	
7:00 pm - 9:00 pm	Dinner	