

International Conference on Frontiers in Surface Engineering & Additive Manufacturing
FSEAM 2026
21st - 23rd January, IIT Kharagpur, INDIA

21st January (Day 1)					
Time Slot	Track A	Track B		Track C	
9:30 - 10:00	(Kalidas Hall) Conference Inauguration (Prof. I. Manna, Prof. Shiv Brat Singh, Prof. Suman Chakraborty & Prof. Sivaji Chakravorti) Vote of Thanks (Prof. Jyotsna Dutta Majumdar)				
10:00-10:30	Plenary Talk: 1 (Prof. Narendra B Dahotre, University of North Texas, USA) Laser Based Additive Manufacturing: Next Generation Materials Manipulation Technology Session Chair: Prof. Jyotsna Dutta Majumdar				
10:30 - 11:00	High Tea				
Session 1	Session :1A (Additive Manufacturing-AM) (Kalidas Auditorium) Theme: Laser Additive Manufacturing Session Chair: Prof. Indrani Sen	Time Slot	Session :1B (Surface Engineering-SE) (Gargi Hall) Theme: High Temperature Coatings Session Chair: Prof. Siddhartha Das	Time Slot	Session :1C (Thermal spraying-TS) (Maitreyi Hall) Theme: Thermal Spray Technologies Session Chair: Prof. Karabi Das
11:00 - 11:30	AMKT-01 (Dr. Frank Brückner, Fraunhofer Institute for Material and Beam Technology, Germany) Latest technological developments in laser-based additive manufacturing and thermal coatings	11:00 - 11:30	SEKT-01 (Prof. Kazuhiro Ogawa, Tohoku University, Japan) Repair of Water-Leaking Perforated Piping Using Low-Pressure Cold Spray Technique and Establishment of Underwater Coating Fabrication Technology	11:00 - 11:30	TSKT-01 (Prof. Harpreet Singh, IIT Ropar) Perspectives on Cold Spray: Introduction, Evolution, Applications and Future
11:30 - 12:00	AMKT-02 (Prof. Prakash Srinangam, University of Warwick, UK) Additive Manufacturing of Al-Mg-Sc Alloys for Aerospace Applications	11:30 - 12:00	SEKT-02 (Dr. A.K. Chaubey, CSIR-IMMT) Design and development of W-Cu functionally graded materials for extreme thermal applications	11:30 - 12:00	TSKT-02 (Dr. Sisir Mantri, CSIR-IMMT, Bhubaneswar) Next-Generation Thermal Barrier Coatings: Enhancing Performance and Durability through Suspension /Solution Precursor Plasma Spray
12:00 - 12:20	AMIT-01 (Dr. Prasenjit Khanikar, IIT Guwahati) Design and performance of 3D-printed mechanical metamaterials (lattice structures)	12:00 - 12:20	SEIT-01 (Dr. Ajit Panigrahi, CSIR-IMMT), Oxidation behavior of spark plasma sintered AlCoCrSiNi and CoCrFeMnNi high entropy alloy	12:00 - 12:20	TSIT-01 (Dr. Shubhra Bajpai, CSIR - IMMT) Thermally sprayed LaPO4 coating: Phase stability and microstructural analysis
12:20 - 12:40	AMIT-02 (Dr. Rajiv Kumar, IIT Ropar) Effect of heat-treatment on the mechanical and corrosion behavior of laser additively manufactured Ti6Al4V alloy	12:20 - 12:40	SEIT-02 (Dr. Rishi Sharma, BIT Mesra) Modification of Materials Properties using Plasma	12:20 - 12:40	TSIT-02 (Dr. Anirban Naskar, IIT Hyderabad) Department of Mechanical and Aerospace Engineering, Challenges and Polymer Metallization of Tin Using an Indigenously Developed Cold Spray Setup
12:40 - 12:50	AMCT-01 (Anubrata Das, IIT Kanpur) Multiphysics Simulation of LPBF Additive Manufacturing Process of SS316L with TiC Nanoparticles Using a Coupled Lagrangian Particle Tracking-Eulerian Model	12:40 - 12:50	SECT-01 (Annada Shankara Dash, IIT Kharagpur) Effect of Mechanical Milling and Thermal Spray Route on the High-Temperature Oxidation Behaviour of CoNiCrAlY Coatings on Inconel 718	12:40 - 12:50	TSCT-01 (Evenmore Myllem, IIT Guwahati) Influence of Laser Processing Parameters on the Surface Morphology and Thermal Response of Cotton Fabrics
12:50 - 13:00	AMCT-02 (Bhavt Bhooshan, ISRO) Additive Manufacturing Enabled Nano-Satellite Systems: Challenges and Prospective Solutions	12:50 - 13:00	SECT-02 (Dr. Sumit Kumar Sharma, BIT Sindri) Study of Corrosion Behavior of Laser Surface-Treated Inconel 718	12:50 - 13:00	TSCT-02 (Aishwarya Sahu, IIT Jodhpur) Achieving Superhydrophobicity on SS316L Coating: A One-Step HVOF Thermal Spray Approach
13:00 - 14:00	Lunch Break				
Session 2	Session: 2A (Kalidas Auditorium) Theme: Emerging Trends in Surface Engineering Session Chair: Prof. Siddhartha Roy	Time Slot	Session: 2B (Gargi Hall) Theme: Emerging Trends in Surface Engineering Session Chair: Prof. Tapas Kumar Bandyopadhyay	Time Slot	Session: 2C (Maitreyi Hall) Theme: Advanced Materials and Coatings Session Chair: Prof. Shiv Brat Singh
14:00 - 14:30	AMKT-03 (Prof. Stefan Dietrich, Karlsruhe Institute of Technology, Germany) Non-Destructive Testing in Additive Manufacturing and Surface Engineering	14:00 - 14:30	SEKT-03 (Prof. A K Nath, Former Professor, Department of Mechanical Engineering, IIT Kharagpur)	14:00 - 14:30	TSKT-03 Prof. Prasanta K Das, IIT Kharagpur
14:30 - 15:00	AMKT-04 (Prof. Bharat Bhooshan Panigrahi, IIT Hyderabad) Microstructure and texture evolution during laser based AM and laser surface treatments	14:30 - 15:00	SEKT-04 (Prof. N K Mukhopadhyay, IIT BHU) Fe-Enriched High-Entropy Alloys and High-Entropy Steels: Microstructure, Mechanical and Tribological Behavior, and Antibacterial Properties	14:30 - 15:00	TSKT-04 (Dr. Palash Kumar Molllick, BARC) Development of SiC Coating and SiC Fibre Composite Materials for Nuclear, Space and Defence Sectors
15:00 - 15:20	AMIT-03 (Prof. Srikanth Bontha, NIT Surathkal) Fabrication and Assessment of Copper - Stainless Steel Multi-Material Structures using Laser Directed Energy Deposition	15:00 - 15:20	SEIT-03 (Dr. Gautam Anand, IIT BHU), 2300-year-old Corrosion-Resistant Coating: Lessons from Archaeometallurgy	15:00 - 15:20	TSIT-03 (Dr. Dipti Samantaray, Head, IGCAR)
15:20 - 15:40	AMIT-04 (Dr. Manab Mallik, NIT Durgapur) Metallurgical and Materials Engineering Structure-Property Correlation of Ceramics Fabricated by Direct Ink Writing	15:20 - 15:40	SEIT-04 (Dr. Tufan Chandra Bera, BITS Pilani) Microstructure Evolution Based Prediction of Surface and Subsurface Residual Stresses in High-Speed Machining of Ti-6Al-4V Abstract High-speed machining (HSM) of Ti-6Al-4V generates extreme thermo-mechanical	15:20 - 15:40	TSIT-04 (Prof. Sathi Banerjee, Jadavpur University) Hybrid treatment technologies involving advanced ceramic membranes and adsorbents for remediation of industrial wastewater aiming at its reusability properties
15:40 - 15:50	AMCT-03 (Vikas Tiwari, IIT Kanpur) Development and Characterization of Additively Manufactured Stellite 6 - TiC Metal Matrix Composite (MMC) Coatings for High Temperature Wear Resistance Applications	15:40 - 15:50	SECT-03 (Vikas Kumar, BIT Mesra) Effect of Microwave Plasma Energy on Microstructure and Nanomechanical Behaviour of MPECVD Grown Nanocrystalline Diamond Films	15:40 - 15:50	TSCT-03 (Akankshya Rout, IIT Kharagpur) Process-Property Interplay in Fe-based metallic glass coatings by HVOF spraying: A Focus on Wear and Corrosion
15:50 - 16:00	AMCT-04 (Shubhra Kamal Nandi, IIT Kharagpur) Compositionally graded laser material deposition of Cobalt based hardfacing alloy	15:50 - 16:00	SECT-04 (Meignanamoorthi G, IIT Jodhpur) Fabrication of Durable Transparent Anti-Fogging Superhydrophobic Coating for Self-Cleaning Application	15:50 - 16:00	TSCT-04 (Srikanth Batna, IIT Bombay) Advanced Non-Destructive Residual Stress Evaluation of Thermal Barrier Coatings Using Raman and Photoluminescence Spectroscopy
16:00 - 16:30	Tea Break				
Session 3	Session-3A (Kalidas Hall) Theme: Additive Manufacturing: Process Modeling, Microstructure, and Performance Session Chair: Dr. NC Murmu	Time Slot	Session: 3B (Gargi Hall) Theme: Surface Engineering: Metallic and Ceramic Materials Session Chair: Prof. C S Tiwari	Time Slot	Session: 3C (Maitreyi Hall) Theme: Advanced Materials : Energy and Structural Applications Session Chair: Prof. Pallab Banerji
16:30 - 17:00	AMKT-05 (Prof. Andreas Wetzig, Technology Field Manager, Cutting & Joining, Fraunhofer IWS, Dresden, Germany) Laser Surface Functionalisation Enables Enhanced Performance	16:30 - 17:00	SEKT-05 (Prof. Apurba Kumar Sharma, IIT Roorkee) Rapid microwave sintering of TiN-based nanocomposites with ceramic additives	16:30 - 17:00	TSKT-05 (Prof. VS Raja, IIT Bombay) Corrosion Mechanisms in Additively Manufactured Alloys: Enablers for Corrosion Resistant Alloy Development
17:00 - 17:20	AMIT-05 (Prof. Manas Das, IIT Guwahati) Post-Processing of the Additively Manufactured Biomedical Implants through Hybrid Electrochemical Magnetorheological Finishing Process	17:00 - 17:20	SEIT-05 (Prof. Sukla Mondol, NIT Warangal) A comparative study of microstructure and mechanical strength of NP addition on laser melted Al based alloy	17:00 - 17:30	TSKT-06 (Dr. Rajkumar Singh, Kalyani Centre for Technology & Innovation, R&D of Bharat Forge Ltd) Service Life Enhancement of Steel Components by Surface Modification
17:20 - 17:40	AMIT-06 (Dr. Amit Arora, IIT Gandhinagar) Department of Metallurgical Engineering Integrated Computational Framework for Thermal and Microstructural Predictions in Laser-Based Additive Manufacturing	17:20 - 17:40	SEIT-06 (Dr. Mitun Das, CGCRI) Laser Processed Functional Coatings on Titanium for Orthopedic Implants	17:30 - 17:50	TSIT-05 (Prof. Sudhanshu Shekhar Singh, IIT Kanpur) Fatigue study of additively manufactured nanoprecipitation strengthened high entropy alloys
17:40 - 18:00	AMIT-07 (Dr. Sudipta Pramanik, IIT Bhubaneswar) Fatigue behaviour of additively manufactured 316L stainless steel solid and microlattice materials	17:40 - 18:00	SEIT-07 (Dr. Mayadhar Debata, CSIR - IMMT) Understanding the role of binder modification and dispersoids on densification, microstructure and distortion characteristics of tungsten heavy alloys used for strategic applications	17:50 - 18:10	TSIT-06 (Dr. Sambit Bapari, IIT Ropar), Large Stiffness Modulations in a Pd-Pt-based Nanoporous Alloy with Continuous Solubility for Hydrogen
18:00-18:20	(Dr. Vivek Kumar Sahu, IIT-ISM Dhanbad), Prior β -grain Refinement in Additive Manufactured Ti6Al4V via ultrasonic impact peening and hot-isostatic pressing	18:00 - 18:10	SECT-05 (Dr. Shubhang Srivastava, IIT Kharagpur) Optimization of Functionalized Tin Oxide Lubricants using Novel Bootstrap based Statistical Procedures for Improved Energy Efficiency in Tribological Applications	18:10 - 18:20	TSCT-05 (Shubham Kumar Singh, CSIR- IMMT), Study of Mechanical and Tribological behaviour of SPS Inconel 718
		18:10- 18:20	SECT-06 (Mergoju Srikanth, CECRI), Microstructural Evolution and Mechanical Performance of IN939 Alloy fabricated by Selective Laser Melting through Heat Treatment Optimization		
		18:20 - 18:30	SECT-07 (Shivansh Gupta, IIT Kanpur) Microstructural and Mechanical characterization of Additively Manufactured Stainless Steel and Mild Steel compositionally graded materials for pipeline application	18:20 - 18:30	TSCT-06 (Sakshi Tiwari, IIT Kharagpur) Effect of SS316L Addition on Crack Susceptibility and Tribological Properties of Triboloy T-800 Laser Clads
19:00 - 20:00	Cultural Programme				
20:00 - 22:00	Dinner				

22nd January (Day 2)					
9:00 - 09:30	Plenary Session [Session Chair: Prof. Indranil Manna (VC, BIT Mesra)] Plenary Talk 2: (Dr. S. Somnath, ISRO) Advanced Materials and Processes for Space Program: Contributions from Indian Institutions				
9:30 - 10:00	Plenary Talk 3: Mr. J D Patil (President, INAE)				
10:00 - 10:30	Plenary Talk 4: Prof. B S Murty (Director, IIT Hyderabad) My Professional Journey at IITKGP with Indranil Da				
Session 4	Session-4A (Kalidas Hall) Session Chair- Dr. Rishi Sharma	Time Slot	Session-4B (Gargi Hall) Session Chair-Prof. Kumkum Banerjee	Time Slot	Session-4C (Maitreyi Hall) Session Chair- Prof. Sudhanshu Shekhar Singh
10:30 - 11:00	AMKT-06 (Prof. Indranil Chattoraj, (Former Director, CSIR-NML) Surface treatments for hydrogen service	10:30 - 11:00	SEKT-06 (Prof. Rahul Mitra, IIT Kharagpur) Processing and structure-property relations of Ni-TiN and Ni-Ni3Zr based in-situ nanocomposite coatings processed by magnetron sputtering	10:30 - 11:00	TSKT-07 (Prof. J Ramkumar, IIT Kanpur) Electrochemical Additive manufacturing: Technological advancement and process challenges
11:00-11:20	AMIT-08 (Prof. Abhik Choudhury, IISc Bangalore), Modeling workflows for the single-crystalline processing of Ni-base superalloys: From Bridgman to additive	11:00-11:20	SEIT-08 (Dr. Sushmita Kundu, CSIR-CGCRI), Electrochromic Materials: Revolutionizing the Future of Smart Devices	11:00-11:20	TSIT-07 (Prof. Kaushik Chattopadhyay IIT BHU) Surface Modification through Ultrasonic Shot Peening and Its Effect on Corrosion, Low Cycle Fatigue Behaviour and Biocompatibility of Ti-13Nb-13Zr Alloy
11:20-11:30	Tea Break				
Session 5	Session-5A (Kalidas Hall) Theme: Microstructure Property Co-relation Session Chair- Prof. Indranil Manna	Time Slot	Session-5B (Gargi Hall) Theme: Functional Surface Engineering Session Chair- Prof. Soameet Biswas	Time Slot	Session-5C (Maitreyi Hall) Theme: Engineered surfaces-thermal/mechanical performance Session Chair- Prof. Bappa Acharee
11:30 - 11:40	AMIT -09 (Prof. Partha Pratim Chattopadhyay, Professor, IEST Shibpur) Process- Microstructure Correlation in Metal Additive Manufacturing				
11:40 - 11:50	AMIT -10 (Prof. Jyotsna Dutta Majumdar, IIT KGP)		SEKT-07 (Prof. David R Field, Washington State University, USA) Textures and Texture Gradients in Wire Arc Additive Manufacturing of Steels		TSKT-08 (Prof. Gandham Phanikumar, IIT Madras) HPC simulations for Microstructure Evolution in ICME approach
11:50 - 12:00	AMIT - 11 (Prof. Anindya Basu, NIT Rourkela) Enhancement of Surface Integrity and Corrosion Resistance of Nickel-Based Coatings on Mild Steel via Hybrid Laser Cladding/Electrodeposition and Ultrasonic Shot Peening	11:30 - 12:00		11:30 - 12:00	
12:00 - 12:10	AMIT - 12 (Prof. Debdas Roy, NIAMT Ranchi)				
12:10 - 12:20	AMIT- 13 (Dr. Manoj Kumar Chopkar, NIT Raipur) Effect of Processing Route and External Elements on High Entropy Alloys		SEIT-10 (Dr. Gautam Agarwal, IIT Roorkee) Additive Manufacturing of near-alpha titanium alloy Ti-6242		TSIT-08 (Dr. Mursid Imam, IIT Patna) Microstructural Evolution and Control in Metal 3D Printing Techniques
12:20 - 12:30	AMIT-14 (Dr. Supriya bera - NIT Durgapur) Sequential Phase Evolution in Al-Cu-Ni-(Zr) Alloys during rapid solidification				
12:30 - 12:40	AMIT-15 (Prof. Jayanta Chakraborty, Neo Metaliks Ltd.)	12:00 - 12:30		12:00 - 12:20	
12:40 - 12:50	AMIT- 16 (Dr. Swapan Karak, NIT Rourkela) On Characterization of Laser-Powder Bed Fusion (L-PBF) Fabricated SS 316L Stainless Steel Part	12:30 - 12:50	SEIT-09 (Dr. Suvradip Mullick, IIT Bhubaneswar, India) Influence of External parameters in Laser Direct Energy Deposition: Ultrasonic Vibration, Inter-pass Laser Re-melting	12:20 - 12:40	TSIT-09 (Dr. Deepak Kumar Pattanayak, CSIR-CECRI)
12:50 - 13:00	AMIT-17 (Dr. Gururaj Tebbang, ARC) Additive Manufacturing of Tool Steels: Challenges and Applications		SEIT-10 (Dr. Gautam Agarwal, IIT Roorkee) Microstructural Insights into Pulsed GMAW-Fabricated Multi-Pass Stellite-6 Hardfacings		TSIT-10 (Dr. Deepak Marb, IIT Bombay) Advancing Nanosecond Laser Color Marking on Stainless Steel: Insights from Experiments and Modeling
13:00-13:10	AMIT - 18 (Dr. Gayatri Paul, BIT Mesra) Nanofluid Engineered Nanostructured Surfaces for Superior Heat Transfer Performance	12:50 - 13:10		12:40 - 13:00	
13:10 - 13:20	AMIT-19 (Dr. Pradyut Sengupta, CSIR-IMMT) Interface-Engineered Oxide/Boride Dispersed Tungsten Alloys for High-Temperature and Extreme Environment Applications	13:10 - 13:20	SECT-08 (Sanat Kumar, BIT Mesra) Synthesis and structural analysis of nitrogen-doped MoS2 thin film using RF magnetron sputtering	13:00 - 13:10	TSCT-07 (Dr. Ahmed Shehata Abdelrahman Gad, BIT Mesra) A Nanocomposite Approach to Next-Generation Hydraulic Damper Design
13:20 - 13:30	AMIT-20 (Dr. Manoj Kumar, CSIR-IMMT) Advanced Thermal and Oxidation-Resistant Coating Strategies for IN718 using Rare Earth Oxide-Doped YSZ Based Thermal Barrier Coating and Laser Surface Alloying	13:20 - 13:30	SECT-09 (Mohd Kaleem Khan, IIT Guwahati) Selective Extraction of Decanoic Acid from Coconut Oil Using DL-Menthof: Acetic Acid (1:1) Deep Eutectic Solvent Supported on Polyetherimide Substrate in a Flow-Based System	13:10 - 13:20	TSCT-08 (Nikita Kumari, BIT Mesra) Microstructure-Hardness-Wear Correlations in GMAW -Based Wire Arc Additive Manufactured HSLA steel
13:30 - 14:15	Lunch Break				
Session 6	Session-6A (Kalidas Hall) Additive Manufacturing: Sustainable Materials Session Chair-Prof. Anindya Basu	Time Slot	Session-6B (Gargi Hall) Theme: Additive Manufacturing: Biomedical Materials Session Chair-Prof. Tapas Laha	Time Slot	Session-6C (Maitreyi hall) Theme: Structural Alloys: Processing-Microstructure-Property Relationships Session Chair- Prof. Shampa Aich
14:15- 14:45	AMKT-07 (Dr. Sandip Ghosh Chowdhury, CSIR NML)	14:15- 14:45	SEKT-09 (Dr. Vladimir Popov, Ariel University, Israel) Biomedical Titanium Alloys by Powder-Based Additive Manufacturing: Microstructure, Corrosion Resistance, and Mechanical Properties	14:15- 14:45	TSKT-09 (Dr. L. Ramakrishna, Associate Director and Head, Centre for Engineered Coatings (CEC), ARC Hyderabad) Translating the Heterogeneous Materials into Opportunities through Surface Engineering
14:45 - 15:15	AMKT-08 (Prof. Swarup Bag, IIT Guwahati) Challenges in multi-material deposition by wire arc additive manufacturing: experiments and modelling	14:45 - 15:15	SEKT-10 (Prof. Amit Roy Chowdhury, IEST Shibpur) Application of additive manufacturing in Orthopaedic and dental implant	14:45 - 15:15	TSKT-10 (Prof. NC Santhi Srinivas IIT BHU) Mechanical behaviour of advanced structural alloys processed by powder bed fusion using laser beam (PBF-LB)
15:15 - 15:35	AMIT-21 (Dr. Anirban Bhattacharya, IIT Bhubaneswar) Computational Modelling of Laser Additive Manufacturing Processes	15:15 - 15:35	SEIT-11 (Dr. Srabane Sen, CSIR-CGCRI) Piezoelectric Nanocomposites Derived Sensors for Multifunctional Applications	15:15 - 15:35	TSIT-11 (Dr. Sumana Ghosh, CSIR - CGCRI) Efficient glass-ceramic based thermal barrier coatings for aerospace applications
15:35 - 15:55	AMIT-22 (Dr. Nisheeth Prasad, IIT Indore) Structure-electrochemistry correlation in multi-cationic mixed metal oxide coatings for impressed current cathodic protection	15:35 - 15:55	SEIT-12 (Dr. Gourhari Ghosh, IIT Jodhpur) Multi-step post-processing of additively manufactured Inconel 718 coating	15:35 - 15:55	TSIT-12 (Dr. Nilrudra Mandal, CSIR-CMERI) Development of Self-Lubricating Wear Resistant Advanced ZTA Ceramic Inserts for Sustainable Eco-friendly Machining
15:55 - 16:05	AMCT-05 (Jagannath Verma, IIT Guwahati) , Sustainable 3D Printing of Non-Planar Ceramic Geopolymer Surfaces Using an Interlocking Brick System	15:55 - 16:05	SECT-10 (Md Imdadul Hoque, IEST Shibpur) Role of Piezoelectric Bone Cement on the Electromechanical Behavior of Augmented Osteoporotic Vertebrae: A Finite Element Analysis	15:55 - 16:05	TSCT-09 (Nitesh Vashishtha, NBC Bearings) Development and tribological behaviour of solid lubricant MoS2 coating for high-speed rolling bearing application
16:05 - 16:15	AMCT-06 (Abhishek Singh, University of Michigan Ann Arbor, USA) A Data-Driven Evaluation Framework for Additive Manufacturing Education and Training Using Experimentally Validated Bridge Designs	16:05 - 16:15	SECT-11 (Sandeep Choudhury, IEST Shibpur) Multiphysics Finite Element Modelling of Piezoelectric Dental Implants for Enhanced Osseointegration	16:05 - 16:15	TSCT-10 (Kumar Kanishka, BIT Mesra) Mechanical and Tribological Performance of Nickel Aluminium Bronze Fabricated by Pulsed GMAW-WAAM
16:15-16:30	Tea Break				
Session 7	Session-7A (Kalidas Hall) Theme: Additive Manufacturing: Lightweight Materials Session Chair-Dr. Gayatri Paul	Time Slot	Session-7B (Gargi Hall) Theme: Surface Engineering: Functional Property Materials Session Chair-Prof. Tarun Kumar Kundu	Time Slot	Session-7C (Maitreyi Hall) Theme: Advanced Applications Designing & Materials Processing Session Chair-Prof. Kaushik Biswas
16:30 - 17:00	AMKT-09 (Prof. Bikramjit Basu, IISc Bangalore) Laser-Powder Bed Fusion based manufacturing of metallic biomaterial implants: Design innovation, asymmetric mechanical properties, biocompatibility and commercialisation status	16:30 - 17:00	SEKT-11 (Dr. Sharad Chandra Sharma, Visiting Professor Centre for Space Science and Technology Indian Institute of Technology, Roorkee) Role of Free Surfaces in Materials Processing under Microgravity Environment of Space	16:30 - 17:00	TSKT-11 (Prof. Kanteswari, IIT Kanpur) Multifunctional 3D-printed Scaffolds for Bone Tissue Engineering with Effective Antibacterial Efficacy, Cytocompatibility, and Mechanical Properties
17:00 - 17:30	AMKT-10 (Dr. Kumkum Banerjee, NITK Surathkal) Additive Manufacturing of High-Performance Composites for Aerospace Applications	17:00 - 17:30	SEKT-12 (Prof. Dilip Kumar Prathar, IIT Kharagpur) Fundamentals of Al/ML Tools and their Applications in Surface Engineering and Additive Manufacturing	17:00 - 17:30	TSKT-12 (Prof. Gour Gopal Roy, IIT Kharagpur) Role of convection and beam oscillation during electron beam welding
17:30 - 17:50	AMIT-23 (Dr. Chetan, IIT Bhubaneswar) Post-processing finishing of additively manufactured alloy using sustainable approaches	17:30 - 17:50	SEIT-13 (Dr. Mahavir Singh, IIT Patna) Surface Alteration via Electrical Discharge Micro-Texturing	17:30 - 17:50	TSIT-13 (Dr. Srikanth Gollapudi, IIT Bhubaneswar) Mechanical and corrosion behavior of Zn/Ti6Al4V interpenetrating phase composites
17:50 - 18:10	AMIT-24 (Dr. Spandan Guha, KIIT Bhubaneswar)	17:50 - 18:10	SEIT-14 (Dr. Somak Dutta, BIT Mesra) Development of Hard and Wear Resistant Coating by Laser Surface Cladding as a Substitute for Hard Chrome Plating	17:50 - 18:10	TSIT-14 (Dr. Renu Kumari, NIT Jamshedpur) Fabrication of Bioactive Plasma-Sprayed Coatings on Ti-Based Alloys

18:10 - 18:20	AMCT-07 (Bona Giri Saicharan, CSIR-CECRI) Process parameter optimization of aluminum alloy Al2139 using laser bed powder fusion technique	18:10 - 18:20	SECT-12 (Sivasubramanian. J, NIT Rourkela) Influence of LSP on the electrodeposited nickel coating for the improvement of electrochemical behaviour	18:10 - 18:20	TSCT-11 (Amlan Ashish, IIT Kharagpur) 3D-Printed Flow Focusing Microfluidic Device for Generation of Janus Droplets for Mimicking Native Liver Sinusoid
18:20 - 18:30	AMCT-08 (Shrantik Kumar Dey, IIT Kharagpur) Effect of Laser Power and Laser Speed on the Defect Volume Ratio and Magnetic Properties of Nd-Tb-Fe-B alloys manufactured by Laser-Bed Powder Fusion.	18:20 - 18:30	SECT-13 (Dr. Dileep Madhana, IIT Bombay) Influence of Processing Environment on Femtosecond Laser Modification of SS316L on Surface Morphology and Electrochemical Behaviour in Simulated Body Fluid	18:20 - 18:30	TSCT-12 (Sura) Goala, IIT Guwahati) Predictive Evolutionary Modelling for Surface Roughness Optimization in EM-12K Steel Toy Molds Fabricated by Submerged Arc Additive Manufacturing
19:00 - 22:00	Dinner				
23rd January (Day 3)					
Saraswati Puja, Pusanjali & Prasadam					
08:00 - 09:00	Session-8A (Kalidas Hall) Theme: Advanced Alloys & Multi-Functional Composites Session Chair- Prof. Debalay Chakraborty		Session-8B (Gargi hall) Theme: Smart Materials & Sustainable Manufacturing: Integrating AI Session Chair-Dr. Supriya Bera		Session-8C (Maitreyi Hall) Theme: Advanced Surface Engineering & Process Control Session Chair- Prof. Sankha Mukherjee
9:00 - 9:30	AMKT-11 Prof. Partha Saha, IIT Kharagpur	9:00 - 9:30	SEKT-13 (Dr. Sushant K. Singh, Director, The Center for Artificial Intelligence and Environmental Sustainability (CAIES) Foundation An Artificial Intelligence-based Framework for Industrializing Nanoparticle Designing	9:00 - 9:30	TSKT-13 (Prof. Kallol Mondal, IIT Kanpur) Corrosion and wear resistant novel mixed carbides based on Cr-Fe-C with WC as moderate addition and metallic Cr as the binder
9:30 - 10:00	AMKT-12 (Prof. Ravi K. R., IIT Jodhpur) Multi-sensor Fusion Technology for Insights into Real-Time Monitoring and Closed-Loop Control of the Directed Energy Deposition Process	9:30 - 09:50	SEIT-15 (Dr. Ravindra Kumar Jha, IIT Guwahati) Printed Microsensors: Challenges and Opportunities	9:30 - 10:00	TSKT-14 (Prof. Sunando Dasgupta, IIT Kharagpur)
10:00 - 10:20	AMIT-25 (Dr. Athira KS, ARCI) Laser Direct Metal Deposition of AISI M2 Tool Steel and Post-clad Heat Treatment: Evaluation of Microstructure and Fretting Wear Behavior	09:50 - 10:10	SEIT-16 (Dr. Sandip Bysakh, CSIR-CGCRI) Analytical Transmission Electron Microscopy Studies of Functional Coatings and Thin Films	10:00 - 10:20	TSIT-15 (Dr. Suman Saha, IIT Dhandbad) Process-induced defects in surface micro-texturing: Impacts on tribological performance, wetting behavior, durability, and sustainability
10:20 - 10:40	AMIT-26 (Dr. Koundinya NTB, IIT Jodhpur) The role of oxygen in the processability of AISI10Mg during laser directed energy deposition	10:10 - 10:20	SECT-14 (Ayesha Beg, Dayalbagh Educational Institute) Development and Characterization of Sugarcane Bagasse Cellulose-Based Bioplastic Films Reinforced with Natural Polymers	10:20 - 10:40	TSIT-16 (Dr. Krishna Dutta, NIT Rourkela) Mitigating Ratcheting Fatigue in HSLA Steel: The Role of Peening in Life Enhancement
10:40 - 10:50	AMCT-09 (Subburayalu S, IIT Jodhpur) Understanding Spatter Dynamics Using Acoustic Emission and High-Speed Imaging	10:20 - 10:30	SECT-15 (Sharukh Khan, IEM Kolkata) Sustainable Upcycling of Scrap Metal Sheets via Hydroforming with Digital Control and Simulation	10:40 - 10:50	TSCT-13 (Vasanth Kumar S, MVGR College of Engineering) Influence on hardening temperature on corrosion resistance of SAE1040 steel
10:50 - 11:00	AMCT-10 (Ayyappan Murugesan, IIT Kharagpur) Microstructural evolution and phase analysis of SS410-AI203-SiC multilayered functionally graded composite fabricated through laser cladding	10:30 - 10:40	SECT-16 (Utkarsh Pandey, BIT Mesra) Dry Sliding Wear Behaviour of AA6061/B4C-Gr Hybrid Nanocomposites Fabricated via a Combined Stir-Ultrasonic-Squeeze Casting Process	10:50 - 11:00	TSCT-14 (Reena Kumari, BIT Mesra) Combined effect of electroless Ni-P coating on the mechanical and tribological behaviour of low carbon steel
11:00-11:15	Tea Break				
11:15 - 11:45	AMKT-13 (Prof. G. P. Das, TCG-CREST, Kolkata) Exploring Interfaces with DFT	11:15 - 11:45	SEKT-14 (Prof. Shrikrishna N. Joshi, IIT Guwahati) Geometric Evolution of Surface Micro Dimples during Long Pulsed Laser Beam Micro-machining	11:15 - 11:45	TSKT-15 (Prof. Samit K Ray, IIT Kharagpur) Semiconductor Nanostructures for Optoelectronic Devices
11:45 - 12:05	AMIT-27 (Dr. Anirudha Kumar, BARC) Nanosecond Pulsed Fiber Laser Based Techniques for Surface Engineering	11:45 - 12:15	SEKT-15 (Prof. TS Sampath Kumar - IIT Madras) Tailoring the surface functionalization of bioresorbable magnesium implants	11:45 - 12:15	TSKT-16 (Dr. Joydip Joadar, ARCI Hyderabad) Surface Characteristics of Two-Dimensional Materials-based Composites
12:05 - 12:25	AMIT-28 (Dr. Gopala Krishna Kurapati, CSIR- National Metallurgical Laboratory) Indigenous development of metal powders suitable for additive manufacturing - Initiatives at CSIR-NML towards Atmanirbhar Bharat	12:15 - 12:35	SEIT-17 (Dr. Shitanshu Shekhar Chakraborty, CSIR - CMERI) Robotic laser deposition for refurbishment application	12:15 - 12:35	TSIT-17 (Dr. Mahesh Gulab, CSIR NML) Advancement in Coating Technologies through Modulation of Advanced Surface Engineering for Excellent Properties and Corrosion Performance: A New Approach
12:25 - 12:45	AMIT-29 (Dr. Bappa Acherjee, BIT Mesra) Effect of Welding Modes on Mechanical Properties of Structural Steel Produced by Arc Additive Manufacturing	12:35 - 12:55	SEIT-18 (Dr. Minakshi Sen, Assanoli Girls College) Entanglement Dynamics Qudit and Qudits in the Photon-Induced Sequential Double Photoionization of Argon: A Theoretical Approach	12:35 - 12:55	TSIT-18 (Prof. Zaheer Khan, IIT BHU) Cladding of thick copper on steel substrate using friction stir welding process
12:45 - 13:05	AMIT-30 (Dr. Ravi Shankar Kottada, IIT Madras) Understanding the high temperature deformation of additively manufactured Ni-base superalloys	12:55 - 13:05	SECT-19 (Dr. Amarnish Kumar Shukla, Madan Mohan Malviya University of Technology, Gorakhpur) Wear and Corrosion Behaviour of Aluminum Cenosphere Composite Foam	12:55 - 13:05	TSCT-15 (Yahea Malek Hussien, IIT Hyderabad) Hard and wear-resistant coatings on Ti-based materials produced by weld deposition
13:05 - 13:15	AMCT-11 (Dr. Kulbir Singh Sandhu, Punjab Institute), Deterministic characterization of additive reinforced nano-particles embedded aluminium alloy based surface composites by FSP	13:05 - 13:15	SECT-20 (Purnushottam Kumar, BIT Mesra) Evaluating Hydrothermal Durability of Laser-fabricated Steel-Polymer-Steel Sandwich Composites	13:05 - 13:15	TSCT-16 (Reetik Singh, BIT Mesra) Advanced epoxy nanocomposites: Graphene-zinc-silica ternary system for enhanced durability and corrosion resistance
13:15 - 14:00	Valedictory & Closure				
14:00 - 15:00	Lunch Break				
Contributory Poster Presentation					
Session chair: Prof. U K Chatterjee, Prof. Moushumi Chakraborty, Dr. Anupam Midya, Dr. Nirmalya Bag					
	Name	Title			
FSM26 - CP - 01	Ranjan Prakash, NIT Durgapur	Development of Alloy Sinter for Sustainable Steelmaking Applications			
FSM26 - CP - 02	Dr. Aakash Rathore, BIT Mesra	Studies of electron beam welded commercially pure aluminium using oscillating beam Casting design and simulation of gating system in Bonnet Extension using procast software for defect minimization			
FSM26 - CP - 03	Navin Kumar, Centre for Advanced studies, Lucknow	Casting Defect Minimization in Canard Fins Using MAGMA or ProCAST: A Simulation-Assisted Approach			
FSM26 - CP - 04	Prashant Yadav, Centre for Advanced studies, Lucknow	Microstructural and mechanical properties evolution of W-Ni/Inconel alloys and effect of oxide-dispersion synthesized by mechanical alloying			
FSM26 - CP - 05	Atiqur Rahman Khan, CSIR-IMMT	Improvement in Wear and Corrosion Resistance Properties of Laser Processed TiC/TiN/TiCN Reinforced Titanium Matrix Composites under different Shrouding Environment			
FSM26 - CP - 06	Bipasha Das, IIT Kharagpur	Microstructural characterisation and corrosion behaviour of multi-layered cladding of Fe based alloy on Al			
FSM26 - CP - 07	Bidipta Dam, IIT Kharagpur	Laser non-reactive and reactive surface processing of near beta titanium alloy			
FSM26 - CP - 08	Tapas Bera, IIT Kharagpur	Microstructural and Surface Characteristics of Laser Composite Surfaced Ti-6Al-4V using FeCoCrMnTi Multicomponent System			
FSM26 - CP - 09	Abhinay Rajput, IIT Kharagpur	Role of Local Electronic Structure in Color Evolution of Ti _{1-x} Al _x Thin Films			
FSM26 - CP - 10	Prii Vishwakarma, BIT Mesra	Laser powder bed fusion of AISI 4140 high-strength low-alloy steel: parameter optimization, microstructural and mechanical properties			
FSM26 - CP - 11	Sarojini Sahu, IIT Kharagpur	Crop yield estimation with help of UAV			
FSM26 - CP - 12	Vedant Priyadarshi, Centre for Advanced studies, Lucknow	Exploring 4D Printing: Enhancing Mechanical Performance of ABS-PC Blend Prototypes			
FSM26 - CP - 13	Sibani Mahapatra, IIT Kharagpur	Surface Engineering Approaches for Performance Enhancement of Additively Manufactured Metallic Components			
FSM26 - CP - 14	Nitish Kumar, IIT Kharagpur	Studies on High-Temperature Wear Mechanism in Laser-Cladded Tribology T400 Coating on AISI 316 SS			
FSM26 - CP - 15	Kishan Kumar, IIT Kharagpur	Functionally graded austenitic implant structures with controlled Poisson's ratio			
FSM26 - CP - 16	NAWAJ SHARIF, IEST Shibpur	Investigation on the influence of laser scan speed on the physical, mechanical, and electrochemical behavior of laser surface treated TiO ₂ alloyed with Ti6Al4V.			
FSM26 - CP - 17	Tarun Kumar Gayen, IIT Kharagpur	Effect of Surface Roughness of AISI H13 Tool Steel substrate on the Morphological Evolution and consequently Mechanical Property development upon Laser Surface Cladding with H13 Tool Steel Powders			
FSM26 - CP - 18	Abhijit Kumar Khanra, IIT Kharagpur	Surface Characterization of Plasma Nitrided Porous Titanium			
FSM26 - CP - 19	Pratim Das, IIT Kharagpur	Laser Assisted Multicomponent Alloy Surface on AISI 316L Stainless Steel for Improved Wear, Corrosion and Tribocorrosion Behavior			
FSM26 - CP - 20	Shree Krishna	Investigation of the thermal oxidation behavior of Mg-1% Ca alloy			
FSM26 - CP - 21	Barsha Nag, IIT Kharagpur	Tribocorrosion behavior of Fe-based amorphous/nanocrystalline composite coating synthesized by atmospheric plasma spraying			
FSM26 - CP - 22	Md Akif Faridi, IIT Kharagpur	Ti-rich High Entropy Alloys for Next-Generation Articulating Surfaces in Total Joint Replacement			
FSM26 - CP - 23	Avula Indu, IIT Kharagpur	Surface-engineered Mg alloy with stearic acid treated polypropylene coating for controlled degradation and fracture healing			
FSM26 - CP - 24	Satyabrata Nigamananda Sahoo, IIT Kharagpur	Mechanical properties of porous Si3N4-SiC composites fabricated at low temperature			
FSM26 - CP - 25	Siddharth, IIT Kharagpur	Effect of gradient composition on the structural, mechanical, thermal and ablation properties of spark plasma sintered ZrB2-B4C-SiC-LaB6 functionally graded material designed for ultrahigh temperature lightweight space applications			
FSM26 - CP - 26	AJIT KUMAR NAIK, IIT Kharagpur	From As-Built to Service Conditions: Mechanical Behavior of PBF-LB Fabricated IN939 Superalloy			
FSM26 - CP - 27	Md Shahwaz, IIT Kharagpur				

Parallel virtual session (NPTEL studio, 1st floor of Takshashila Building)			
Session Chair 21.01.2026 : Prof. Jyotsna Dutta Majumdar/ Session Chair 23.01.2026 : Prof. Siddhartha Roy			
	Name and affiliation	Date & Time	Title
1	OS-01, (Prof. Jeff Th. M. DeHosson, University of Groningen The Netherlands)	21.01.2026 14:00 IST 09:30 CET	Multiplex coatings: DLC protective coatings on elastomers
2	OS-02, Prof. Manoj Gupta, National University of Singapore	21.01.2026 14:30 IST 12:00 SGT	New Magnesium-Based Materials: Future Horizons
3	OS-03, (Prof. Raman Singh, Monash University, Australia)	21.01.2026 15:00 IST 20:30 AET 10:30 CET	Success in Developing CVD Graphene Coating on Mild Steel: A Disruptive Approach to Remarkable/Durable Corrosion Resistance
3	OS -04, (Prof. Nikhilesh chawla, Purdue University, USA)	23.01.2026 10:00 IST 23:30 EST	3D Microstructural Evolution in Additively Manufactured Alloys by X-ray Microtomography and Correlative Microscopy
4	OS-05, Dr. Harish Rao, Peoples University, India	23.01.2026 10:30 IST	
5	OS-06, Prof. D P Mondal, Technocrats Institute of Technology, India	23.01.2026 11:00 IST	Nano-particle Decorated Carbon and Aluminium Open Cell Foams for Improved EMI shielding and Energy Storage Applications