79th Annual Technical Meeting of The Indian Institute of Metals (IIM ATM 2025) & International Conference on Advanced Materials and Critical Minerals for Energy Transition
December 4-6, 2025, Lecture Hall Complex, IIT Hyderabad

Overall Program Schedule

International Conference on Advanced Materials & Critical Minerals		
Day 1: Thursday, 4th December 2025		
08:00 – 09:00	Registration	
09:00 – 10:00	Inauguration of International Conference and Technical Exhibition (LH-5) **Chief Guest: N. Balaram, CMD, SCCL, Hyderabad**	
	Technical Sessions on Advanced Materials (LH-5)	**Technical Sessions on Critical Minerals (LH-6)**
10:05 – 11:35	Session 1: Alloys Design and Development	Session 1: Critical Mineral Resources
11:35 – 11:55	Tea Break	
11:55 – 13:25	Session 2: Advanced Energy Materials	Session 2: Critical Mineral Processing
13:25 – 14:15	Lunch	
14:15 – 15:45	Session 3: Processing and Applications of Novel Alloys	Session 3: Critical Metal Extraction, Refining & Allied Technologies
15:45 – 16:05	Tea Break	
16:05 – 17:35	Session 4: Quantum and Electronic Materials/devices	Session 4: Recycling of Critical Metals
17:40 – 18:25		CXO Session (LH-6)
18:45 – 21:30	Cultural Program (LH-5) & Dinner at IIT Hyderabad	

Day 2: Friday, 5th December 2025		
08:00 – 09:00	Registration	
09:00 – 10:00	Inauguration of IIM ATM 2025, IIM Award Ceremony & IIM-Springer Book Release (LH-5)	
10:05 – 11:35	Technical Session 1 (14 parallel sessions)	
11:35 – 11:55	Tea Break	
11:55 – 13:00	Memorial Lectures (LH-5)	
13:00 – 14:00	Lunch Break	
14:00 – 15:30	Technical Session 2 (14 parallel sessions)	Interaction Session of Students with former Presidents of IIM (LH-5)
15:30 – 17:30	Posters Session & Metallography Contest	Tea Break
17:45 – 19:00	Transportation to LN Convention Hall	
19:00 – 21:30	Gala Banquet Dinner at LN Convention Hall	
Day 3: Saturday, 6th December 2025		
08:00 – 09:00	Registration	
09.00 – 10.00	IIM Apex Award Ceremony (LH-5) **Chief Guest: Samir Kamat,** *Secretary, DDR&D and Chairman, DRDO* **Guest of Honour: Jaiteerth R. Joshi,** *CEO & MD, Brahmos Aerospace*	
10:05 – 11:15	Technical Session 3 (13 parallel sessions)	Sponsors Speak (LH-5)
11:15 – 11:35	Tea Break	
11:35 – 13:05	Technical Session 4 (14 parallel sessions)	
13:05 – 14:00	Lunch Break	
14:00 – 15:30	Technical Session 5 (14 parallel sessions)	Panel Discussion on Startups (LH-5)
15:45 – 16:30	Valedictory Session: IIM ATM 2025 Best Oral, Poster & Metallography Award Ceremony (LH-5)	
16:30 – 17:00	High Tea	

International Conference on Advanced Materials & Critical Minerals		
Day 1: Thursday, 4th December 2025		
09:00 – 10:00	**Inaugural Session: International Conference Inauguration and Technical Exhibition (LH-5)**	
	Advanced Materials (LH-5)	**Critical Minerals (LH-6)**
10:05 – 11:35	**Session 1: Alloys Design and Development** **Chair: Pinaki P. Bhattacharjee,** *IIT Hyderabad*	**Session 1: Critical Mineral Resources** **Chair: Pradip,** Ex-*TRTDDC, Pune*
Lecture 1	Deformation phenomena in high-entropy alloys **Easo George,** *Oak Ridge National Lab, USA*	Indian Critical mineral Resources – Way Forward **M.B. Verma,** Ex-*AMD, Hyderabad*
Lecture 2	Some roles for physical metallurgy in the sustainability of metals **Matthew Barnett,** *Deakin University, Australia*	Sustainable resource recovery: Prospectivity in tailings and mine wastes for critical minerals **Mohan Yellishetty,** *Monash University, Australia*
Lecture 3	Diffusion in high-entropy alloys: “sluggish” or “anti-sluggish”? Lattice structure vs. chemical complexity **Sergiy Divinski,** *University of Münster, Germany*	Primary aluminium and copper industry; Secondary resource for critical metals **Vilas Thathavadkar,** *HINDALCO, Kolkata*
11:35 – 11:55	Tea Break	
11:55 – 13:25	**Session 2: Advanced Energy Materials** **Chair: Tata N. Rao,** *SV University*	**Session 2: Critical Mineral Processing** **Chair: Narasimha Mangadoddy,** *IIT Hyderabad*
Lecture 1	Role of Advanced Materials across Hydrogen Value Chain **Ashish Lele,** *NCL, Pune*	Using fine grinding in the beneficiation of critical minerals for the energy transitions – Does the stress energy approach work? **Aubrey Njema Mainza,** *Univ. of Cape Town, South Africa*
Lecture 2	Solar Power Development for India’s Energy Transition **Soumitra Satapathi,** *IIT Roorkee*	Critical minerals processing from indigenous resources @CSIR IMMT **Ramanuj Narayan,** *IMMT, Bhubaneswar*
Lecture 3	Alloying and Interfacial Design in Na-Ion Batteries: A Metallurgist’s Guide to High-Density Performance **Sathiya Mariyappan,** *CNRS, France*	Reimagining criticality: a materials science perspective on critical minerals **Steven Reddy,** *Curtin University, Australia*
13:25 – 14:15	Lunch	
14:15 – 15:45	**Session 3: Processing and Applications of Novel Alloys** **Chair: S.K. Jha,** *Ex-MIDHANI*	**Session 3: Critical Metal Extraction, Refining & Allied Technologies** **Chair: T. Srinivas,** *BARC, Mumbai*
Lecture 1	Mechanism of Simultaneous Increase of Both Strength and Ductility by Microstructural Refinement in Dual Phase (DP) Steels Composed of Soft and Hard Phases	Critical Materials – Challenges in Scale-up of process technologies & way forward **K Balasubramanian,** *NFTDC, Hyderabad*

	Nobuhiro Tsuji, *Kyoto University, Japan*	
Lecture 2	Development of Oxide Dispersion Strengthened Alloys for High Temperature Applications **R. Vijay,** *ARCI, Hyderabad*	Additive Manufacturing for critical minerals – Driving sustainable energy transition **Suresh Bhargava,** *RMIT, Australia*
Lecture 3	Critical Minerals: Readiness and Future Map **Raghavendra Tewari,** *BARC, Mumbai*	Rare earths – Indian Scenario of Extraction and refining **Anuttam Mishra,** *IREL*
15:45 – 16:05	Tea Break	
16:05 – 17:35	**Session 4: Quantum and Electronic Materials/devices** **Chair: K. Chattopadhyay,** *IISc, Bengaluru*	**Session 4: Recycling of Critical Metals** **Chair: Anupam Agnihotri,** *JNARDDC, Nagpur*
Lecture 1	Advancing 2D materials and heterostructures for new physics and technology **Arindam Ghosh,** *IISc, Bengaluru*	Phosphorus Recovery from Steelmaking Slag and Its Utilization for Sustainable $LiFePO_4$ Production **Shigeru Ueda,** *Tohoku University, Japan*
Lecture 2	Functionalized Semiconductor Nanostructures for Future Electronic- and Energy-related Devices **Naoki Fukata, *NIMS, Japan***	Addressing Metal Criticality through Extraction of Critical Metals from Electronic Waste **Kamalesh Singh,** *IIT (BHU), Varanasi*
Lecture 3	Critical electronic materials and devices for Atmanirbhar Bharat **R Ratheesh,** *CMET, Pune*	Green Metals Production and Recycling **Akbar Ramdhani,** *Swinburne University, Australia*
17:40 - 18:25		**CXO Panel Discussion (LH-6)**
		Chaitanya Bhanu, *Tata Steel, Panellist*
		T. Kumaresan, *L&T, Panellist*
		Satish Pai, *Hindalco, Panellist*
		P.K. Murugan, *JSW, Panellist*
		C.G.K. Nair, *Ex-HAL, Bengaluru, Moderator*
18:45 – 21:30	**Cultural Program (LH-5) & Dinner at IIT Hyderabad**	

Day 2: 5th December 2025		Technical Session-1 (10:05 - 11:35) (Each Invited Talk 20min including Q&A; Each Contributory Oral Talk 10min including Q&A)				
LHC	**Theme**	**Abstract ID**	**Presenting Author**	**Presenting Author Affiliation**	**Title**	**Subtheme**
LH-1 **T1-1**	**Advanced Materials Characterization (AMC)** **Subtheme: Microscopy (MIC)** **Chair:** **Arup Dasgupta,** *IGCAR, Kalpakkam*	**Invited Speaker**	**Ravishankar Narayanan**	IISc, Bengaluru	Defects and Interfaces in Layered Materials	
		AMC_019	Bubu Pradhan	JSW, Bellary	Evaluation of Microstructure in Dual Phase Steel Using Advanced Characterization Techniques	MIC
		AMC_023	Rajdeep Banik	IIT Madras	Correlative microscopic analysis of nano-scale B2 precipitate evolution in a B-alloyed Fe-Mn-Al-Ni-C advanced high strength steel	MIC
		AMC_026	Diya Mukherjee	CMERI, Durgapur	Substantial improvements in mechanical properties at elevated temperatures of a novel Al-Cu-Ni-X alloy through arc surface remelting	MIC
		AMC_028	Hemant Kumar	IISc, Bengaluru	Interfacially ordered phase states enable high-strength ductile eutectic Al alloys	MIC
		AMC_035	Amiya Kumar Prusty	JSL, Jajpur	Process Route Optimization and Material Characterization of Titanium-Stabilized 11Cr Ferritic Stainless Steel for Critical Deep Draw Applications	MIC
		AMC_036	Sumita Santra	NFC, Hyderabad	Understanding deformation behavior in Ti-alpha alloy: EBSD & TEM study	MIC
		AMC_062	Nagini Macha	IIT Hyderabad	DST-SATHI Centre on In-situ and Correlative Microscopy: A Cornerstone to Cutting-Edge Characterisation Across Multiple Length Scales	MIC
LH-2 **T1-2**	**Advanced Structural Materials (ASM)** **Subtheme: Superalloys (SA)**	**Invited Speaker**	**K. Gopinath**	DMRL, Hyderabad	High Temperature Structural Materials for Aeronautical Applications	
		ASM_EX2	Surendra Kumar Makineni	IISc, Bengaluru	Role of atomic scale solute segregation at interfaces in designing high strength structural alloys	
		ASM_087	Monalisa Mandal	NIT Jamshedpur	Creep Crack Growth Rate and Deformation Mechanism in IN617 alloy: Impact of testing parameters and microstructure	SA
		ASM_091	Giridhar Gudivada	NIT Warangal	Ageing-induced plasticity transition mechanism of Ni-based superalloys	SA

	Chair: **M. Narayana Rao,** *Ex-Midhani, Hyderabad*	ASM_120	Sagar Anandrao Patil	IIT Bombay	Role of η phase on hot tensile behavior of XH43 superalloy at 650 °C	SA
		ASM_134	Kaustav Barat	NAL, Bengaluru	Non-isothermal and Non-isostress creep of IN 718 superalloy: Material behavior beyond overheating under stress	SA
		ASM_140	Prafull Pandey	IIT Gandhinagar	An in-situ elevated temperature investigation of plasticity and damage evolution in a Ni-based superalloy	SA
		ASM_151	G Srinivas Kumar	DMRL, Hyderabad	Influence of quenching conditions on the microstructural evolution of an advanced Ni-base superalloy	SA
LH-3 **T1-3**	**Advanced Structural Materials (ASM)** **Subtheme: High Entropy Alloys (HEA)** **Chair: Jatin Bhatt,** *VNIT Nagpur*	**Invited Speaker**	**N.K. Mukhopadhyay**	IIT (BHU), Varanasi	Phase evolution and thermal stability in high entropy alloys and intermetallics	
		ASM_024	Shanker Kumar	NIT Warangal	Comparative Study of Empirical and Machine Learning Models to Study Indentation Size Effect in Refractory High Entropy Alloys	HEA
		ASM_066	Yagnesh Shadangi	IIT Bhilai	An insight on structure, microstructure and mechanical properties of low-density Mg containing high entropy alloy with precipitation of intermetallics	HEA
		ASM_090	Jandhyala Naga Lakshmi	University of Hyderabad	Microstructure and mechanical properties of nanocrystalline NbWTi refractory multi-principal element alloy	HEA
		ASM_107	Shruti Srivastava	DIAT, Pune	Optimization of Strength and ductility in $Fe_{40}Mn_{18}Cr_{20}Ni_{20}Co_{2}$ medium-entropy alloys (MEAs) via cold rolling and recrystallization	HEA
		ASM_116	Niraj Chawake	IIT Kanpur	Compression Creep Behaviour of non-equiatomic CoCrNi Alloy with Hierarchical Microstructure	HEA
		ASM_135	Lakshminarayan Ramasubramanian	IIT Delhi	Combining strain-assisted nanoprecipitation with nanotwins to enhance strength of laser additively manufactured high-entropy alloys	HEA
		ASM_223	Rahul Mitra	IIT Kanpur	Mechanistic Insights into Oxidation and Arc-Jet Response of ZrHfTaC and ZrHfTaTiC Multicomponent Carbides	HEA
LH-4	**Extractive Metallurgy (EXM)**	**Invited Speaker**	**Mrunmaya Pasupalak**	JSW, Bellary	Unlocking the Potential of Inferior Non-Coking Coals in Metallurgical Coke Manufacturing	

T1-4	**Subtheme:** **Raw Materials (RM)** **Chair:** **Veerendra Singh,** *Tata Steel, Jamshedpur*	EXM_016	Dhanraj Patil	JSW, Bellary	Secondary fuel injection strategies for enhanced iron ore sintering performance	RM
		EXM_056	Satyananda Patra	ArcelorMittal Nippon Steel	Improvement of Goethitic iron ore pellet quality by introducing in-house developed organic binder and its performance in blast furnace	RM
		EXM_077	Nivya S	JSW, Bellary	Influence of metallurgical waste addition on sinter characteristics: Experimental insights from RINL	RM
		EXM_100	Aurobinda Dash	JSW, Bellary	Coking coal diversification and optimization at JSW Steel	RM
		EXM_159	Mithilesh Kumar Singh	SAIL, Burnpur	An innovative way for gainful utilization of CDCP dust in sinter making	RM
LH-6 **T1-5**	**IIM-JIMM Joint Session on Advances in Steel** **Chair:** **S.S. Mohanty** *Essar Minmet Ltd.*	**Invited Speaker**	**Tadashi Furuhara**	Tohoku University, Japan	Control of chemical heterogenetities in designing high strength steel based on elemental interaction	
		Invited Speaker	**G.G. Roy**	IIT Kharagpur	Decarbonizing steelmaking for a coal-based developing economy	
		Invited Speaker	**Yoji Mine**	Kumamoto University, Japan	Micromechanical characterisation of hydrogen embrittlement of austenitic stainless steel with microstructure refinement	
		Invited Speaker	**Amarendra Kumar Singh**	IIT Kanpur	Modeling of Electric Arc Furnace Operations: Effect of Charge-Mix on Melting and Refining Behavior	
LH-7 **T1-6**	**Physical & Mechanical Metallurgy (PMM)** **Subtheme:** **Thermomechanical Processing (TMP)** **Chair:** **Rajeev Kapoor,** *BARC, Mumbai*	**Invited Speaker**	**Nagamani Jaya Balila**	IIT Bombay	Micromechanics of deformation and fracture in severe plastic deformation processed maraging steels	
		PMM_008	Anish Karmakar	IIT Roorkee	Role of rare earth precipitates on cold rolling and sub-critical annealing of low carbon steels	TMP
		PMM_028	Amit Kumar Mohanty	Tata Steel, Kalinganagar	Elimination of Zig Zag Coiling Defect in High Strength Hot Rolled Steel grade produced in an advanced Hot Strip Mill	TMP
		PMM_049	Ayyappadas C	IIT Madras	Interplay between Crystallographic Texture, Anisotropy and Stretch Flangeability in Rolled AA6061 Sheets	TMP
		PMM_050	Madhumanti Bhattacharyya	IIT(ISM) Dhanbad	Exploring the Feasibility of Retained Austenite Maximization in a Quenched and Partitioned Steel	TMP
		PMM_069	Murugesh Kumar Ramar	IIT Roorkee	Orientation-Dependent Plasticity and Damage Evolution in Ferrite and Lath Martensite from Thermomechanical Controlled Processing of Nb–V Steel	TMP

		PMM_079	Honey Gupta	HBNI, Mumbai	Grain size effect on high temperature deformation and strain rate sensitivity in a low Ni medium Mn austenitic stainless steel.	TMP
		PMM_127	Srikanth Voona	BARC, Mumbai	Solid State Diffusion Behaviour in Ni-Cr-Mo System	PM
LH-8 **T1-7**	**Materials Recovery and Recycling (MRR)** **Chair:** **M.B. Verma** *Ex-AMD, BARC*	**Invited speaker**	**P Kalpana**	BARC, Mumbai	Recovery of Uranium Metal by Induction Melting of Rich Slag Waste	
		ASM_159	Rajesh Kumar Prusty	NIT Rourkela	Recycling of Waste Glass/Epoxy composites for Reuse of Recovered Glass Fibers in Continuous and Chopped Form	
		MRR_008	Yelaka Venkatasailakshmi	GITAM	Correlation of microstructure, mechanical-properties and electrochemical-corrosion behavior of undiluted recycled Al-automotive scrap alloy with elevated Fe impurity	
		MRR_009	Vanshika Dixit	Tata Steel, Jamshedpur	Economical synthesis of MOF from CHNS analyzer waste CuO and PET bottles for congo red sequestration: A pathway towards dual mitigation	
		MRR_012	Vinay Pawar	Hindustan Zinc Limited	A Sustainable process innovation to eliminate metal losses and generate revenue from Iron residue	
		MRR_015	Praveen Kumar	JSW, Bellary	Application of waste glass wool in concrete to improve flexural strength	
		MRR_066	Mitali Gouda	IIT Hyderabad	Pt and Ni recovery from spent electrocatalyst	
		MRR_067	Dr Anas Ns	JNARDDC, Nagpur	Towards Zero-Melt Circularity: Pilot-Scale Solid-State Recycling of Aero Aluminium Machining Swarf for Extrusion Billets	
LH-9 **T1-8**	**Materials for Energy and Devices (MDSE)** **Subtheme: Batteries & Supercapacitors (B&SC)**	**Invited Speaker**	**Vanchiappan Aravindan**	IISER Tirupati	Hybrid Cathodes for Li-ion Batteries via Recycling	
		MDSE_016	Nikita Lote	VNIT Nagpur	Investigation of KOH-Activated Water Hyacinth-Derived Carbon for supercapacitor application	B&SC
		MDSE_027	Puneeth Amin	JSW, Bellary	India's First Diesel to Battery Retrofitted Zero Emission-Battery Powered Locomotive	B&SC
		MDSE_054	D P Mondal	Technocrats Institute of Technology, Bhopal	Open Cell Aluminum Foams for High Energy Density Fast Charging Battery and EMI Absorption Applications	B&SC

	Chair: **Surendra K. Martha,** *IIT Hyderabad*	MDSE_067	Katchala Nanaji	IIT Bhilai	Bridging the Gap: From Ultra-Fast Charging Tab-less Batteries to High-Energy Hybrid Capacitors for Next-Generation Energy Storage	B&SC
		MDSE_075	Y. Dhakshayani	IISC, Bengaluru	Developments and Challenges in Photobatteries	B&SC
LH-10 **T1-9**	**Secondary Materials Processing (SMP)** **Subtheme: Casting** **Chair:** **G. Venkata Sarath Kumar**, *Ashok Leyland*	**Invited Speaker**	**Padmanabhan Krishnan**	VIT, Vellore	Viscoleastic response signatures of polymers and polymer composites in sliding contacts - Discovery of a new phenomenon	
		ICME_037	Gangarapu Akhila	IIT (BHU), Varanasi	Microstructure-based FEM simulation of end milling of Aluminium alloys	Casting
		SMP_012	Ruchika Dhyani	AcSIR	Shear-Cooled Rolling of A356 Alloy and Composite for Enhanced Microstructure and Mechanical Performance	Casting
		SMP_047	K. Duraisamy	JSW, Salem	Effect of Titanium on the Solidification Behaviour and Internal Soundness of Peritectic Steel in Continuous Casting of 310 mm Round Blooms for Pipe Applications	Casting
		SMP_072	Mahathi J	PSG Tech, Coimbatore	Optimization of Titanium and Silicon Addition for Enhanced Microstructural and Mechanical Characteristics in Squeeze-Cast Zn–Al Alloys	Casting
		SMP_088	Manoj Kumar Sahoo	Tata Steel, Gamharia	Mitigating Surface Cracking in High-Nitrogen, Low-Carbon Peritectic Steels: The Role of Ti–N–Al–V Interactions and Practical Alloy Adjustments	Casting
		SMP_112	Rahul Singh Patel	IIT Bhilai	Thermomechanical Processing of Al 7068 Alloy: A Comparative Analysis of Hot, Warm, and Cold Rolling	Casting
		SMP_132	Rahul Kumar	MANIT Bhopal	Application of Numerical Simulation Technique to Cast compound casting slab	Casting
LH-11 **T1-10**	**Secondary Materials Processing (SMP)** **Subtheme:**	**Invited Speaker**	**Bernard Rolfe**	Deakin University, Australia	Laser-based powder bed fusion of Inconel 718 – progressing towards simulation benchmarks	
		SMP_005	M. Manikandan	VIT, Vellore	Tailoring Maraging Steel for Defence Applications: A Study on Pulsed CMT-WAAM and Heat Treatment Synergies	AM
		SMP_066	Rajat K Roy	NML, Jamshedpur	Additive Manufacturing of Fe-Based Amorphous Alloy Powders by DED Method	AM

	Additive Manufacturing (AM) **Chair:** **M. Gopinath,** *IIT Hyderabad*	SMP_111	Dinesh Lanka	NIT Trichy	Structure–property correlation of Laves phase morphology in rotary friction welded additively manufactured Inconel 718	AM
		SMP_162	Sahil Dhiman	IIT Hyderabad	Advancing microstructural control and performance in laser powder bed fusion additively manufactured Ti-6Al-4V	AM
		SMP_199	Soumyajit Koley	Tata Steel, Jamshedpur	Inter-layer Peening Assisted Wire-Arc Additive Manufacturing of Iron-based Shape Memory Alloy	AM
		SMP_218	Gururaj Telasang	ARCI, Hyderabad	Additive Manufacturing of Hybrid Structures: Microstructure, Properties, and Applications	AM
LH-12 **T1-11**	**Secondary Materials Processing (SMP)** **Subtheme: Joining** **Chair:** **G. Madhusudhan Reddy,** *BrahMos*	**Invited Speaker**	**Chitta Ranjan Das**	IGCAR, Kalpakkam	Type IV cracking in modified 9Cr-1Mo steel and its mitigation	
		SMP_064	Suman Patra	Tata Steel, Jamshedpur	Optimizing Fe Content in Electrodeposited Zn–Fe Coatings for Superior Resistance Spot Weldability of IF Steel	Joining
		SMP_108	Shweta Verma	GTRE, Bengaluru	Rotary Friction Welding of Cast Nickel Base Superalloy with Martensitic Stainless Steel for Aero Engine Application	Joining
		SMP_113	Tejaswi Kotha Satya	Lincoln Electric Company (India) Pvt. Ltd.	Numerical Investigation of process parameter effects on Smut Deposition in Aluminum Welding	Joining
		SMP_146	Nagumothu Kishore Babu	NIT Warangal	Friction Stir Welding of Al–5Mg/Al_2O_3 Nanocomposites: Microstructure and Mechanical Property Characterization	Joining
		SMP_161	Sandeep Kushwaha	JSW, Bellary	Analysis of Electro Resistance Welded (ERW) tubes from Galvanized Coated Structural Steels in Flaring and Flattening Test	Joining
		SMP_169	Md Jawed Quamar	NIT Warangal	Enhancing the mechanical properties of Commercially Pure Titanium welds: The Role of Boron and Carbon Additions in Gas Tungsten Arc Welding	Joining
		SMP_176	Gajanan R Deshingkar	IIT Hyderabad	Effects of Filler Wire composition on Weld integrity: A simulation Study on 18 Ni Maraging steel weldments used for Rocket Motor Casing	Joining

LH-13 **T1-12**	**Late Prof. R.K. Ray Memorial Session** **Chair:** **Suhash Ranjan Dey,** *IIT Hyderabad*	**Invited Speaker**	**Indradev Samajdar**	IIT Bombay	Grain Boundary versus Grain Interior Aqueous Corrosion – Focus Ferritic Steel	
		Invited Speaker	**Satyam Suwas**	IISc, Bengaluru	Tryst with Texture Dependence on Stacking Fault Energy	
		Invited Speaker	**Sandip Ghosh Chowdhury**	NML, Jamshedpur	Investigating the deformation behavior of cold rolled 8wt.% medium-Mn, Al-added steel	
		Invited Speaker	**Bikas C. Maji**	BARC, Mumbai	Synthesis and Characterization of MAX-phase Ceramics for Development of Accident Tolerant Fuel (ATF) Clad	
LH-14 **T1-13**	**Mineral Processing (MPR)** **Subtheme:** **Critical minerals (CM) &** **Ferrous** **Chair:** **A.K. Prasad Rao** *GITAM Visakhapatnam*	**Invited Speaker**	**Nikhil Dhavan**	IIT Roorkee	Recycling of spent tube lights for REE recovery	
		MPR_007	Sreedevi T E	JNARDDC, Nagpur	Studies on modified boehmite sorbents for efficient recovery of strategic metal: Gallium	CM
		MPR_010	Nilesh Madhavrao Sonawane	COEP Technological University Pune	Simulation of electrolysis cell for fluoride based molten salt	CM
		MPR_016	Raj Kumar Dishwar	IIT (ISM) Dhanbad	Recovery of Critical Metals from Zinc Plant Residue: Process Development for Cobalt and Zinc Separation	CM
		MPR_028	Vijay Bhooshan Kumar	Ashok Leyland	A recent trend in the use of critical element in automotive industry applications	CM
		MPR_049	Gayatri D Hazare	IMMT Bhubaneswar	Green surfactant as a collector for phosphate ore flotation	CM
		MPR_012	Mukesh Kumar Sen	Tata Steel, Kalinganagar	Comparative Property of Colour based Granular Bentonite Particles:An Insight	Ferrous
		MPR_019	Shivraj Oraon	IIT(ISM) Dhanbad	Efficient Utilization of Goethite Ore through Biochar-Based Magnetizing Roasting	Ferrous
LH-15 **T1-14**	**IIM-TMS Joint Session on Integrated Computational Materials Engineering (ICME)** **Chair:** **Srinivas Chada,** TMS, *USA*	**Invited Speaker**	**Somnath Ghosh**	Johns Hopkins University, USA	Parametrically-Upscaled Constitutive and Crack Nucleation Models for Multiscale Modeling Fatigue Crack Nucleation in Ti Alloys	ICME
		Invited Speaker	**Surya Kalidindi**	Georgia Institute of Technology, USA	Accelerated development of materials using AI/ML	ICME
		Invited Speaker	**Abhik Choudhury**	IISc, Bengaluru	Modeling assisted workflows for single-crystal Ni-based superalloy processing: Adaptations from DS to Additive	ICME
		Invited Speaker	**Ramachandran Sankarasubramanian**	DMRL, Hyderabad	Challenges and Opportunities in Multiscale Modelling for ICME	ICME

Day 2: 5th December 2025	**Memorial Lectures (11:55 - 13:00)**			
LHC	**Memorial Lecture**	**Presenting Author**	**Presenting Author Affiliation**	**Title**
LH-5	**Dr. Daya Swarup Memorial Lecture (Chair: Komal Kapoor,** *NFC, Hyderabad*)	**R. Balamuralikrishnan**	Director, DMRL, Hyderabad	Translational research in the High Performance Steels: From Lab to Product
	Prof. NP Gandhi Memorial Lecture (Chair: Amarendu Prakash, *SAIL*)	**Rajiv Kumar Mandal**	IIT (BHU), Varanasi	Experiences of research and teaching in structure of metallic systems beyond 1982
	IIM Aditya Birla Leadership Excellence Award for Women (Chair: S.V.S. Narayana Murty, *MIDHANI, Hyderabad*)	**T.D. Mercy**	Deputy Director, VSSC, Thiruvananthapuram	Energy Storage Systems for Space Applications: Lithium-Ion Batteries in Launch Vehicles and Satellites

Day 2: 5th December 2025		**Technical Session-2 (14:00-15:30) (Each Invited Talk 20min including Q&A; Each Contributory Oral Talk 10min including Q&A)**				
LHC	**Theme**	**Abstract ID**	**Presenting Author**	**Presenting Author Affiliation**	**Title**	**Subtheme**
LH-1 **T2-1**	**Advanced Materials Characterization (AMC)** **Subtheme: Microscopy (MIC)** **Chair:** **K.G. Pradeep** *IIT Madras*	**Invited Speaker**	**Partha Ghosal**	DMRL, Hyderabad	Characterization of Materials by Advanced Microscopy Techniques	
		AMC_045	Peddiraju V. S. Vivek Chaitanya	IIT Hyderabad	Utilizing substrate-film reactions for local tuning of phase separation pattern of immiscible Ag-Cu thin films	MIC
		AMC_060	Abhinandan Gangopadhyay	IIT Bombay	Advanced Transmission Electron Microscopy Characterization of InGaN/GaN Multiple Quantum Well Heterostructure	MIC
		AMC_EX2	C. Sudha	IGCAR, Kalpakkam	Design, Development & Characterization of High Temperature Fusible Plug for FBR Applications	MIC
		AMC_EX3	Chanchal Ghosh	IGCAR, Kalpakkam	Unveiling Atomic-Scale Chemistry and Magnetic Texture Formation in (Fe,Cr)2B Using Aberration-Corrected STEM and LTEM	MIC
		AMC_EX5	Márton Péter Iritz	Technoorg Linda, Hungary	High-Quality Sample Preparation Using Broad Ion Beam Milling	MIC

		AMC_EX6	Nitin B	IIT Bhilai	Revisiting Discontinuous Precipitation in Alloys: A Multi-Scale Microscopy Study	MIC
		AMC_037	Pritam Banerjee	Technical University of Denmark	In-situ Investigation of the birth of nano-catalyst from Zeolitic Imidazolate Frameworks Under Working Conditions	MIC
LH-2 **T2-2**	**Advanced Structural Materials (ASM)** **Subtheme: Superalloys (SA)** **Chair:** **G. Appa Rao** *University of Hyderabad*	**Invited Speaker**	**Swati Biswas**	GTRE	Degradation of a superalloy in an Aero Gas Turbine engine during testing	
		ASM_167	Rajesh Kumar Rai	MNIT Jaipur	The effects of cyclic oxidation on the low cycle fatigue deformation behavior of CM 247 DS LC alloy	SA
		ASM_181	Badri Vishal Pandey	MIDHANI, Hyderabad	Development and manufacturing of high chromium containing Nickel based superalloy for aeronautical application	SA
		ASM_196	K Somasekhar Reddy	NFC Hyderabad	Effect of surface treatment on fatigue crack growth behaviour in Alloy 800 Steam Generator Tube Material	SA
		ASM_202	B Aashranth	IGCAR, Kalpakkam	Translating laboratory experiments to industrial hot working of a Ni-Cr-Co alloy	SA
		ASM_213	Vijay Pal Shivran	DMRL, Hyderabad	Effect of Heat Treatment Parameters on the Microstructure of a PM Nickel base Superalloy	SA
		ASM_220	Pushpendra Kumar Dwivedi	IIT Madras	Creep-Fatigue Interaction and Deformation Mechanisms of Haynes 282 Superalloy under Symmetrical and Asymmetrical Waveforms at 760 °C	SA
		ASM_222	Pratik K Ray	IIT Ropar	The microscopic mechanisms of oxidation with reactive element additions	SA
LH-3 **T2-3**	**Advanced Structural Materials (ASM)** **Subtheme: High Entropy Alloys (HEA) &**	**Invited Speaker**	**Saurabh Nene**	IIT Jodhpur	Unusual yet desired microstructural stability in ultralight and ultra-strong TiAl complex alloy for space and defense applications	
		Invited Speaker	**Animesh Mandal**	IIT Bhubaneswar	Mechanical behaviour of Aluminium-Cerium alloy for high-temperature applications	
		ASM_144	Pankaj Kumar Ojha	IIT Hyderabad	Microstructure and mechanical properties of heavily cold-rolled and annealed high entropy alloy with highly deformable Laves phase	HEA

	Al&Mg Alloys (Al&Mg) **Chair:** **P.P. Bhattacharjee** *IIT Hyderabad*	ASM_160	Sudhansu Maharana	IIT Kharagpur	Unravelling the deformation mechanisms of Ni-rich high entropy alloys with varying Ti content: An experimental and atomistic approach	HEA
		ASM_177	Palleda Thaviti Naidu	IIT Hyderabad	Microstructure stability and superplasticity in Al0.3CoCrFeNi high entropy alloy	HEA
		ASM_127	Sanjib Maity	NIT Durgapur	High-Temperature Dynamic Compression Behaviour of a Microalloyed Al–Cu–Ni–Mn–X Alloy	Al&Mg
		ASM_163	Aditya Anand	IISC, Bengaluru	Effect of MWCNT Reinforcement on Rheocast Al-11Si Alloy Composite	Al&Mg
LH-4 **T2-4**	**Extractive Metallurgy (EXM)** **Subtheme:** **Hot metal DeSulfurization & Steelmaking (HMDeS & SM)** **Chair:** **R.H.G. Rau** *Ex-Mukund Iron & Steel*	**Invited Speaker**	**Satish Kumar D.**	JSW, Bellary	Improvements in Hot Metal Desulphurization	
		EXM_144	Repaka Praharsha	JAMIPOL Ltd, Jamshedpur	Innovative reagent for sustainable and cost-effective hot metal desulphurisation	HMDeS & SM
		EXM_145	Syed Furqan Bukhari	IIT Hyderabad	Mathematical modeling-based evaluation of top lance configurations for hot metal desulfurization process	HMDeS & SM
		EXM_148	Raj Kumar Yadav	JAMIPOL Ltd, Jamshedpur	Enhanced recovery in steelmaking through advanced cored wire solutions	HMDeS & SM
		EXM_053	Sooraj	Tata Steel, Jamshedpur	Sustainable medium carbon ferromanganese production by cleaner and resource-saving direct silicothermic method	HMDeS & SM
		EXM_006	Swapan Kumar Garai	Champion Ceramics	Development of nano-carbon-based ultra-low carbon magnesia carbon bricks for increasing the slag zone life of stainless teeming ladles at Jindal Hissar plant	HMDeS & SM
		EXM_157	Rinku Singroha	Jindal Stainless	Vaporization from molten steel & slag during stainless steel production	HM DeS & SM
LH-6 **T2-5**	**IIM-JIMM Joint Session Advances in Steels** **Chair:** **S. Ueda** *Tohoku University*	**Invited Speaker**	**N. Viswanathan**	IIT Bombay	Process Simulation: A Key Tool for Steel Decarbonization Efforts	
		Invited Speaker	**Nobuo Nakada**	Institute of Science Tokyo, Japan	Concurrent Multiscale Characterization of Local Deformation Band Propagation in Ferritic Steel by Low-Strain-Rate Tensile Testing and Advanced Imaging Techniques	
		Invited Speaker	**Kalaivani G**	JSW, Salem	Process Optimization to Achieve Target Hardness in Rotavator Blade Steel without Annealing	

		Invited Speaker	**Kyosuke Yoshimi**	Tohoku University, Japan	Anamalous elastic and ordering behaviours induced by thermal vacancies in FeAl single crystals	
LH-7 **T2-6**	**Physical & Mechanical Metallurgy (PMM)** **Subtheme: Physical Metallurgy (PM), Themomechanical Processing (TMP)** **Chair:** **V.V. Kutumba Rao** *Ex-JNARDDC & BHU*	**Invited speaker**	**Vikram Jayaram**	IISc, Bengaluru	Development of a DIC system for mechanical testing at high temperatures	
		Invited speaker	**V. Karthik**	IGCAR, Kalpakkam	Recent Advances in Small punch Testing for evaluating Tensile, Fatigue and Fracture Properties	
		PMM_084	Md. Serfraj Alam	SAIL, Ranchi	Contribution of Alloying Elements and Processing Techniques to the Microstructure and Mechanical Properties of Nb-V-Mo-Ti and Nb-Ti Microalloyed Steels	TMP
		PMM_090	Harsh Khawas	JSW, Bellary	Microstructural and properties characterization of high-strength micro alloyed S700MC Steel	TMP
		PMM_072	Debabrata Bhuyan	JSW, Bellary	Tailoring Dual-Phase Steels in Continuous Annealing Lines: Role of Carbon Distribution, Martensite fraction, and Recrystallization.	PM
		PMM_099	Abhay Kumar Thakur	IIT (ISM) Dhanbad	X-ray diffraction line profile analysis of deformed microstructure in Cr-Mn-N based Austenitic Stainless Steel	PM
		PMM_EX1	M. P. Phani Raj	MGIT, Hyderabad	Nanoindentation studies on ordered and disordered iron aluminides.	MM
		PMM_032	Gautam Mishra	IIT (BHU), Varanasi	Mechanical behavior of QLT-treated 3Ni-5Mn steel based on examinations of microstructural evolution	MM
LH-8 **T2-7**	**Materials Recovery and Recycling (MRR)** **Chair:** **Nikhil Dhawan** *IIT Roorkee*	**Invited speaker**	**R. Rajesh Kumar**	C-MET, Hyderabad	E waste recycling technologies for recovery of critical raw materials: sustainable solutions at Center for Materials for E-Wase management	
		MRR_020	Pamarthi Venkataravikumar	JSW, Bellary	Reducing Carbon Footprint in Sinter Making by Using Waste Utilization and Process Optimization, and Sustainable Steel Production	
		MRR_021	Rishikesh Deshmukh	VNIT Nagpur	Recycling Industrial Waste into Geopolymer Composite Bricks for Sustainable Construction	
		MRR_022	Prasenjit Chanda	Tata Steel, Jamshedpur	Circular Economy-Recycling Steel Waste into Value Added Product for Sustainable Steel Making	

		MRR_023	Nandita Das	Hindustan Zinc Limited, Debari	From Waste to Resource: A Zero-Waste Approach to Gypsum Production Using Zinc Hydrometallurgical Residue	
		MRR_026	Arpita Singh	IIT Roorkee	Enhancing Sustainable Steel Production through Improved Scrap Recycling and Green Technologies	
		MRR_029	Deepti Vishwakarma	IIT Roorkee	Recycling of end-of-life poly-crystalline silicon solar panels for separating materials and recovering Silicon solar cells	
LH-9 **T2-8**	**Materials for Energy and Devices (MDSE)** **Subtheme: Batteries & Supercapacitors (B&SC), Solar** **Chair: T.D. Mercy** *VSSC, Thiruvananthapuram*	**Invited Speaker**	**B V Sarada**	ARCI, Hyderabad	Electrocatalyst Modified Carbon Sulfur Composite Cathodes for Enhanced Performance in Li-S Batteries	
		MDSE_081	Anil Kumar Npaidi	IIT Jammu	Designing Sustainable Cathode Chemistries for Next-Generation Sodium-Ion Batteries	B&SC
		MDSE_095	Harish Verma	IIT (BHU), Varanasi	Enhancing the Electrochemical Performance of La_2FeNiO_6 via rGO Integration in electrodes for Asymmetric Supercapacitor Energy Storage Applications	B&SC
		MDSE_102	Fathima Ali K	University of Hyderabad	Multilayered Graphene Prepared from LCO-Based Spent Battery Graphite as the Anode Material of Li-Ion Battery	B&SC
		MDSE_111	Ekta Majhi	IIT Hyderabad	Hierarchical Porous N, O-Codoped Carbon via One-Step Activation for Enhanced Pseudocapacitive Supercapacitor Performance	B&SC
		MDSE_022	Surendra Anantharaman	IIT Madras	Exciton-Polaritons for Enhancing the Efficiency of 2D Perovskite Solar Cells	Solar
		MDSE_086	Ashish Kulkarni	IIT Tirupati	From Waste to Resource – Recycling of the Expensive Components from Two-Year Old Degraded Perovskite Solar Cells	Solar
		MDSE_105	Srinivas K. Yadavalli	IIT Kanpur	Lamination of Perovskite Solar Cells: Nanoscale Effects of Thermomechanical Processing	Solar
LH-10 **T2-9**	**Secondary Materials Processing (SMP)**	**Invited Speaker**	**A. Srinivasan**	NIIST, Thiruvananthapuram	Instrumented Constrained Rod Casting Technique to Evaluate Hot Tearing Susceptibility of Magnesium Alloys	
		SMP_138	Niti Kumar Jain	JSW, Bellary	Development of process metallic rolls for automotive grade steel production	Casting

	Subtheme: Casting **Chair:** **Ravi Ravindran,** *TMU, Canada*	SMP_173	Rajenthirakumar	PSG Tech, Coimbatore	Formability enhancement during die-less friction stir incremental forming of Titanium	Casting
		SMP_183	Chandan Choudhary	ITM Vocational University, Vadodara	Effect of Ti addition on the microstructure and mechanical properties of strain-induced melt activated Al-7xxx alloys	Casting
		SMP_185	Vamsi Krishna Pakki	IISC, Bengaluru	Microstructure–Texture–Property Correlation in Mg–3Al–0.2Ce Alloy Processed by Symmetric, Asymmetric reverse rolling, and Extrusion with asymmetric reverse rolling	Casting
		SMP_201	R Kiran	SAIL RSP	Cost-Optimized Development of IS 2062 E350 BR Steel with Ultra-Low Niobium Addition in Hot Strip Mill–II	Casting
		SMP_208	Sai Sashank Kodide	JINDAL, Jajpur	Minimization of Thermal Cracks in 16Cr-10Ni-2Mo Austenitic Stainless Steel	Casting
LH-11 **T2-10**	**Secondary Materials Processing (SMP)** **Subtheme: Additive Manufacturing (AM)** **Chair:** **S. Surya Kumar** *IIT Hyderabad*	**Invited Speaker**	**V Anil Kumar**	VSSC, Thiruvananthapuram	Large Format Additive Manufacturing for Space Applications	
		SMP_236	Shivank Adarsh Tyagi	NIT Warangal	Fatigue Behavior of Laser Powder Bed Fusion Manufactured Ti6Al4V Schwarz TPMS lattices with varied unit cell sizes	AM
		SMP_239	J Vinod Kumar	DMRL, Hyderabad	Effect of Build orientation on Texture and Mechanical properties of L-DED 3D Printed Ti6Al4V alloy	AM
		SMP_294	Buchibabu	IIT Palakkad	Tailoring the microstructure and mechanical properties in additive friction stir deposition of aluminum alloy: An in-depth numerical and experimental verification	AM
		SMP_311	Apurba Roy	VSSC, Thiruvananthapuram	Development of Scalable 3D-printed Metallic Auxetic Structures	AM
		SMP_316	Dineshraj S	VSSC, Thiruvananthapuram	Development of Post-Processing Strategies for Additively Manufactured Aero Materials via Hot Isostatic Pressing (HIP)	AM
LH-12 **T2-11**	**Secondary Materials**	**Invited Speaker**	**V. Balasubramanian**	Annamalai University, Chidambaram	Friction+Arc Assisted Stir Technique (Fast) For Joining High Melting Temperature Materials	

	Processing (SMP) **Subtheme: Joining, Physical Metallurgy (PM)** **Chair:** **R.K. Mandal** *IIT (BHU), Varanasi*	**Invited Speaker**	**Sisir Mantry**	IMMT, Bhubaneswar	Harnessing 2D Materials and MAX Phases to Engineer Tribocorrosion-Resistant Ceramic Coatings via Suspension Plasma Spray	
		SMP_270	S. Malarvizhi	Annamalai University, Chidambaram	Effect of Rotating Arc on Mechanical Properties and Microstructural Characteristics of Gas Metal Arc Welded Rolled Homogenised Armour (RHA) Steel Joints	Joining
		SMP_296	Rawla Rakesh	IIST, Thiruvananthapuram	Dissimilar Metal Electron Beam Welding of Monel K500 and Inconel 718: Influence of Pre- and Post-Weld Heat Treatment on Microstructure and Mechanical Properties	Joining
		SMP_297	Mohan Raj Pandiyan	IIT Palakkad	Towards understanding the structure-property evolution mechanisms in wrought-to-printed and printed-to-printed linear friction welded Ti alloy near net blanks for Aero applications	Joining
LH-13 **T2-12**	**Failure Analysis & Corrosion (FAC)** **Subtheme: Failure analysis (FA)** **Chair:** **M. Ramji** *IIT Hyderabad*	**Invited speaker**	**M Sujata**	NAL, Bengaluru	Identification of primary cause of failure of the collective control rod in helicopter accidents	
		FAC_070	Souvik Das	Tata Steel, Jamshedpur	Root Cause Analysis of Breakage in Electrode Quality Steel Wires: A Metallurgical Perspective	FA
		FAC_093	Santhoshkumar R	LPSC, Thiruvananthapuram	Metallurgical analysis on cracked AA2219 propellant tank	FA
		FAC_097	Raghavendra K	NAL, Bengaluru	Failure Analysis of a Prematurely Cracked Main wheel hub of an Aircraft	FA
		FAC_104	Kaushal Kishore	Tata Steel, Jamshedpur	A comprehensive review of complex failure mechanisms of blast furnace tuyere and a novel nature-inspired directed energy deposition solution	FA
		FAC_106	Varsha Florist	LPSC, Thiruvananthapuram	Metallurgical analysis of cracked AA7075 primary compartment body of liquid rocket engine	FA
		FAC_111	Pondy Kumar	JSW, Dolvi	Investigation of Edge Crack Formation in grade SAE 1541 during ERW Tubes Processing	FA
		AMC_EX7	Srinivas Rama Varanasi	IIT Hyderabad	Hydrogen-induced fast fracture in a 1.5 GPa dual-phase steel	FA
LH-14	**Mineral Processing (MPR)**	**Invited speaker**	**Upendra Singh**	JNARDDC, Nagpur	Challenges and Opportunities for the Recovery of Critical minerals from secondary industry wastes	

T2-13	**Subtheme:** **Coal & Critical minerals (CM)** **Chair:** **Siddhartha Misra** *Tata Steel, Jamshedpur*	MPR_037	Eswaraiah Chinthapudi	IMMT, Bhubaneswar	Comprehensive Study on the Beneficiation of Mangampeta Shungite Rock and Its Bond Work Index Behavior under Different Circulating Loads and Test Mesh Sizes	Coal
		MPR_043	Basant Kumar Sahoo	SAIL, Ranchi	Strategic Measures for Enhancing Battery Performance and Optimizing Coke Moisture Control at BSL, Bokaro	Coal
		MPR_051	Anup Kumar	SAIL, Ranchi	From Risk to Resilience: Safe Utilization of LVHR Coal in Stamp Charged Coke Oven through Pilot Oven Carbonization	Coal
		MPR_003	Atchutanna Vidyaadhari	BARC, Mumbai	Process Optimization for Leaching of Rubidium and Caesium as by-products from Micaceous Pegmatite Ore of Indian Origin	CM
LH-15 **T2-14**	**Materials for Strategic Sector (MFTS)** **Subtheme:** **Aero (Aero)** **Chair:** **Vijay Petley** *GTRE, Bengaluru*	**Invited speaker**	**Mithun Palit**	DMRL, Hyderabad	Powder Metallurgically Processed Turbine Disc for Aeroengine - Perspectives and Challenges	
		MFTS_014	Chintapatla Tirumala Surya Prakash	MANIT Bhopal	Slip Transfer Resistance across Grain Boundaries: Insights from Five-Parameter Analysis in Ni-Based Superalloys	Aero
		MFTS_041	Aditya Nema	BITS Pilani, Hyderabad	Effect of temperature on the mechanical properties of carbon-epoxy composites	Aero
		MFTS_064	Vivek Kumar	MIDHANI	Study of weld morphology and mechanical properties of thin Hastelloy C-276 sheet welded using Gas Tungsten Arc welding	Aero
		MFTS_066	Prajit C S	SRM IST, Chennai	Experimental investigation and numerical simulation of electron beam welded Inconel 718 to Stainless Steel 321 dissimilar alloy joints	Aero
		MFTS_082	Dhanyashree M D	IISc, Bengaluru	Towards Flexible Orientation Control in Single-Crystal Ni-Based Superalloy through Seed Extraction and Tilted-Seed Growth	Aero

Day 3: 6th December 2025		Technical Session-3 (10:05 -11:15) (Each Invited Talk 20min including Q&A; Each Contributory Oral Talk 10min including Q&A)				
LHC	**Theme**	**Abstract ID**	**Presenting Author**	**Presenting Author Affiliation**	**Title**	**Subtheme**
LH-1 **T3-1**	**Extractive Metallurgy (EXM)** **Subtheme: Direct Reduced Iron Process (DRI)** **Chair:** **Pratik Swarup Dash** *Tata Steel, Jamshedpur*	**Invited speaker**	**Snigdha Ghosh**	IIT Bhubaneswar	Mathematical Modelling of Hydrogen-intensive DRI Shaft Reactors	
		EXM_165	Keita Saito	Tohoku University	Synthesis of manganese carbide as an alternative alloying source for medium-Mn steels	DRI
		EXM_009	Sayantan Mukherjee	IIT (BHU), Varanasi	Direct reduction of iron ore using ammonia as reductant: A sustainable alternative for low-carbon ironmaking	DRI
		EXM_103	Avash Kumar Saha	NIT Durgapur	Utilization of biomass-derived biochar as a carbon-neutral reductant in DRI production: influence of CPR pellet coating and basicity	DRI
		EXM_136	Prakash Ranjan Sahu	Tata Steel, Meramandali	Utilizing biochar as an alternate & sustainable fuel source in DRI production for lowering carbon emissions	DRI
		MPR_026	Jyoti Prava Mukhi	IIT Bhubaneswar	Kinetic Analysis of Dehydroxilation Phenomena During Low Grade Iron Ore Induration	DRI
LH-2 **T3-2**	**Functional & Smart Materials (FMSM)** **Chair:** **Chandrasekhar Murapaka** *IIT Hyderabad*	**Invited speaker**	**Chandra Sekhar Tiwary**	IIT Kharagpur	Development of Stable, Green and Sustainable Two-Dimensional Materials	
		FMSM_046	Ravishankar Suman	IIT Bhubaneswar	Strength and corrosion behavior of Zn/Ti-6Al-4V interpenetrating phase composites: Effect of heat treatment of the LPBF Ti-6Al-4V	
		FMSM_014	Bharath Kumar Veesala	IIT (BHU), Varanasi	Effect of Fe on MnNiSi based Heusler Alloys for Magnetic Refrigeration Applications	
		FMSM_084	N. Purushotham	C-MET	Metallothermic Reduction of Neodymium Fluoride: An Efficient Pathway for High-Purity Neodymium for NdFeB Magnets	
		FMSM_069	Syamala H Aditya Kumar Reddy	IIT Hyderabad	Fly Ash – Modified Melamine Formaldehyde -Based Hydrophobic Coatings for Self-Cleaning Applications	
LH-3 **T3-3**	**Functional & Smart Materials (FMSM)**	**Invited speaker**	**Amit Kumar Chakraborty**	IISc, Bengaluru	Nanostructured Transition Metal Oxides/Hydroxides Based Hierarchical Electrodes for High Performance Energy Storage Devices	

	Chair: **Atul S. Deshpande** *IIT Hyderabad*	**Invited speaker**	**Pradip Paik**	IIT (BHU), Varanasi	Polymers as medicines: Organ targeted Drug delivery, Nuroprotection, regeration and anti-inflammation	
		FMSM_089	Rohiteswar Mondal	IIT Hyderabad	Interface-engineered topological BiSb/CoFeB heterostructures for superior spin-charge conversion	
		FMSM_019	Randhir Singh	IIT (BHU), Varanasi	Photo-Fenton catalytic degradation of tetracycline by medium entropy oxide	
		FMSM_023	Rajendra Kumar Goyal	MNIT Jaipur	Electrical and Microwave Absorption Properties of High Performance Polymeric Composites Manufactured by 3D Printing	
LH-4 **T3-4**	**Extractive Metallurgy (EXM)** **Subtheme:** **Blast Furnace Ironmaking (BFI)** **Chair:** **V. Ramasamy** *PSG Tech, Coimbatore*	**Invited speaker**	**Jose Martin Korath**	Tata Steel, Jamshedpur	Digitalization in Blast Furnace Operation	
		EXM_047	Kamma Ramakrishna Rao	Tata Steel, Jamshedpur	Investigating the effect of charging direct reduced iron in blast furnace operation using RIST and C-DRR Approach	BFI
		EXM_113	Mohanraj	JSW, Bellary	Stable operation of a large blast furnace under varying low-grade iron ore conditions	BFI
		EXM_115	Devendra Narsale	Tata Steel, Jamshedpur	Study on hearth temperature control and remanent thickness of blast furnace	BFI
LH-6 **T3-5**	**IIM-TMS Joint Session on HEA** **Chair:** **Srinivas Chada** *TMS, USA*	**Invited Speaker**	**Peter K. Liaw**	University of Tennessee, USA	Superior High-Temperature Strength in a Refractory High-Entropy Alloy	
		Invited Speaker	**Saryu Jindal Fensin**	Los Alamos National Laboratory, USA	SPARK: Accelerating Alloy Discovery with AI and Self-Driving Labs	
		Invited Speaker	**Koteswara Rao Rajulapati**	University of Hyderabad	Strengthening and Deformation Characteristics of Various High/Medium-Entropy Alloys	
LH-7 **T3-6**	**Physical & Mechanical Metallurgy (PMM)** **Subtheme:**	**Invited Speaker**	**R.N. Singh**	BARC, Mumbai	Can the hydride embrittlement of Zr-alloys be mitigated?	
		PMM_042	Abhisek Jena	IIT Kharagpur	Microstructural insights into the effect of thermo-mechanical processing on hydrogen embrittlement in low-manganese advanced high strength steel	TMP
		PMM_059	Durga Prasad	Tata Steel, Jamshedpur	Hydrogen resistant steel: Can an engineered microstructure mitigate the hydrogen attack?	MM

	Thermomechanical Processing (TMP), Mechanical Metallurgy (MM) & Physical Metallurgy (PM) **Chair:** **A. Nagesha** *IGCAR, Kalpakkam*	PMM_146	Shavi Agrawal	UC Louvain	Anisotropic creep and stress rupture behaviour of laser powder bed fusion processed Hastelloy X	MM
		PMM_168	T M Shreyas	IIST, Thiruvananthapuram	Exploring the Mechanical Response and Microstructural Evolution of Wrought Inconel 625 Superalloy across Extreme Temperatures	MM
		PMM_041	Sudipta Patra	IIT (BHU), Varanasi	Understanding QLT heat treatment process and development of high strength-high cryogenic toughness in 7% Ni steel	PM
LH-8 **T3-7**	**Materials Recovery and Recycling (MRR)** **Chair:** **R.N. Jayaraj,** *Ex-NFC, Hyderabad*	**Invited Speaker**	**K Jaya Shankar**	NIIST, Thiruvananthapuram	Environmentally Sustainable Resource Recovery from Electronic Waste: Key Issues & Challenges	
		MRR_EX2	Vivek Verma	IIT Kanpur	Sorting of spent Lithium-ion batteries types using Wavelength Dispersive X-ray fluorescence	
		MRR_031	A.K. Prasada Rao	GITAM, Visakhapatnam	Substituting Virgin Al-alloys with Undiluted-Recycled Al-alloys in Automotive Components	
		MRR_037	Rohit Jha	JINDAL	Sustainable Ferrochrome Production from Platinum Group Elements Tailings	
		MRR_059	Takayuki Iwama	Tohoku University, Japan	Utilization of Steelmaking Slag and Separation of Valuable Element	
		MRR_060	Shaik Saleem	NIT Warangal	Pyrometallurgical processing of obsolete NdFeB magnets and pre concentration of rare earth oxides in slag	
LH-9 **T3-8**	**Sponsors Speak** **Chair:** **K. Bhanu Sankara Rao** *IIT Hyderabad*					
LH-10 **T3-9**	**Start-up & Industry 4.0 (SMI)** **Chair:**	**Invited speaker**	**Gautam Dalapati**	Hydrogen Innovation Pte Ltd & ASTAR LAB, Singapore	Development of CuO-Based Catalysts for Advanced Electrolyzers toward Green Hydrogen and Sustainable Steel Production	

	Paravastu Rambabu *Greenko, Hyderabad*	SMI_026	Vidya Goudar	JSW, Bellary	Modular wireless train operations & information systems using Cyber signalling	
		SMI_028	Prajwal Ajay Naidu	Tata Steel, Gamharia	A boosting algorithm to predict Silicon content in Mini Blast furnaces at TSL, Gamharia	
		SMI_034	Mayank Mishra	Insitu Micron	InsituMicron: Advancing Materials Innovation through Miniaturised Mechanical Testing	
		SMI_053	Shubham Musale	JSW, Dolvi	Smart Anomaly Detection and Process Monitoring for the Direct Reduced Iron Process	
		SMI_EX1	Sivalingaraju B	Green Sustainability Services Pvt Ltd, Hyderabad	Sustainable Recycling of Steel Plant By-products through Stiff Vacuum Extrusion: A Circular Economy Approach	
LH-11 **T3-10**	**Secondary Materials Processing (SMP)** **Subtheme: Electrodeposition (ED)** **Chair: G. Sivakumar** *ARCI, Hyderabad*	**Invited speaker**	**Raman Singh**	Monash University, Australia	Circumventing Challenges in Developing CVD Graphene on Steels for Extraordinary and Durable Corrosion Resistance	
		SMP_007	Palak Kasar	AMPRI, Bhopal	Thermo-electrical conductivity enhancement through electrodeposition of Cu/GO onto commercial-grade alloy	ED
		SMP_020	Bangmaya Satpathy	NIT Warangal	Tailoring Morphology, Mechanical Properties, and Tarnish Resistance of Nano-structured Au Coatings via Surfactant Polarity and Current Density in ChCl–EG Deep Eutectic Solvent-based baths	ED
		SMP_100	Bhavani Challarapu	ARCI, Hyderabad	Development of CoFeNi medium-entropy alloy coatings by electrodeposition	ED
		SMP_143	Lakshmi Kanth Reddy Madikunta	Hindalco, Dahej	Optimization of Chemical Quality of Copper Anodes to Improve Cathode Purity in Electrorefining	ED
LH-12 **T3-11**	**Start-up & Industry 4.0 (SMI)** **Chair: CVS Kiran,**	**Invited speaker**	**Aditya Agare**	Thermoflyde Industries	From Fire to Flight: The Thermoflyde Journey from Refractories to Aerospace Powders	
		SMI_009	Sowmya Y	JSW, Bellary	Data Lake Implementation for Digitalization in the Steel Industry	
		SMI_012	Sameeran Pani	Tata Steel, Jamshedpur	Predictive barrier management with automated safety instrumented system on rail based hot metal transport at Tata Steel Jamshedpur	

	Red Balloon Aerospace, Hyderabad	SMI_019	Pankaj Kumar Gupta	JSW, Bellary	Transformative Integration of Industry 4.0 Technologies: Enhancing Efficiency, Safety, and Sustainability in Sinter Plants-Operation	
		SMI_020	Kalyanmoy Mandal	JSW, Bellary	Development of FeO prediction model for iron ore Sintering process through Machine Learning	
LH-13 **T3-12**	**Failure Analysis & Corrosion (FAC)** **Subtheme: Failure analysis (FA)** **Chair: Dilip Peshwe** *VNIT Nagpur*	**Invited speaker**	**S. Sivaprasad**	NML, Jamshedpur	The Science & Art of Failure Analysis	
		FAC_043	Kumar Gopalan	HAL, Bengaluru	Metallurgical Failure Investigation of Leaf Spring Frame belonging to Flexible Drive Shaft (FDS) assembly of a Military helicopter.	FA
		FAC_046	Ponnapu Reddy Subba Reddy	IIT Roorkee	On role of dislocation character influenced on high cycle fatigue response in carbide-free bainitic steels	FA
		FAC_047	Jivan Kumar	Gas Turbine Research Establishment	Carbide Banding-Induced Premature Failure in Martensitic Stainless Steel: Mechanistic Insights and Microstructural Engineering	FA
		FAC_051	Ashim Bikash Mandal	Tata Steel, Jamshedpur	Premature Failure of Stainless Steel Lance Pipe in a Lime Calcining Plant	FA
		FAC_066	Keerti Pandey	Ecole de Mines de Saint-Etienne, France	Investigation on corrosion fatigue crack initiation in a multilayer Al 2024 alloy	FA
LH-14 **T3-13**	**Mineral Processing (MPR)** **Subtheme: Non-Ferrous Extraction (NF)** **Chair: L. Pugazhenthy** *ILZDA, Delhi*	**Invited speaker**	**Saurabh Shekar**	NML, Jamshedpur	A clean approach for the production of high pure chromic oxide from chromite tailings	
		EXM_155	P Lalit Naidu	BARC, Mumbai	Mechanism of titanium sponge formation in laboratory-Scale Kroll Process	
		EXM_169	Vikas Kumar	BARC, Mumbai	Preparation of Volatile Rare Earth Metals (Sm, Eu, Tm, Yb) by Vacuum Reduction–Distillation: Thermodynamic Analysis	
		EXM_179	Uday Kumar Kongari	IIT Hyderabad	Coupled Tertiary Current Distribution and Euler-Euler CFD Modelling of a 2D 8 kA Multipolar MgCl2 Electrolytic Cell	
		MPR_033	Pravanjani Swain	IMMT Bhubaneswar	Sustainable Flotation of Copper and Iron Ores Using Novel Ionic Liquids: Experimental and Molecular Simulation Insights	
		MPR_060	Suharika Diddi	IIT Hyderabad	Prediction of Accurate Air-core in Hydrocyclone Using CFD Model – Validation Against ERT Data	

LH-15 **T3-14**	**Materials for Strategic Sectors (MFTS)** **Subtheme: Aerospace (Aero), Life Assessment (LA), Defence** **Chair: Vikas Saxena** *Ex-DMRL, Hyderabad*	**Invited Speaker**	**Dheepa Srinivasan**	Baker Hughes	New Alloy Development for Hybrid Additive Manufacturing for Turbine Components	
		MFTS_086	Chenna Krishna S	VSSC, Trivandrum	Flow Forming of Monel K-500: Effect of Deformation and Heat Treatment on Mechanical Properties and Microstructure	Aero
		MFTS_088	Steaphen Sigatapu	VSSC, Trivandrum	Development and Characterization of Stainless Steel and Nickel-Based Superalloy Joints Processed Through Diffusion Bonding	Aero
		MFTS_044	Shah Manan Haren	IITRAM, Ahmedabad	Lightweight Metallic Foam Sandwich Structures: Novel Fabrication Approaches and Applications in Strategic Sectors	Defence
		MFTS_069	Sukumar Govindan	DMRL	Dynamic deformation and ballistic performance of high nitrogen steel: Role of initial microstructure	Defence
		MFTS_049	Sanway Deb	LPSC, Thiruvananthapuram	Salvage and Repair of Investment Casting Defects in a value-added Aero Hardware: A Case Study on a Cryo Booster Pump Component	LA

Day 3: 6th December 2025		**Technical Session-4 (11:35 -13:05) (Each Invited Talk 20min including Q&A; Each Contributory Oral Talk 10min including Q&A)**				
LHC	**Theme**	**Abstract ID**	**Presenting Author**	**Presenting Author Affiliation**	**Title**	**Subtheme**
LH-1 **T4-1**	**Advanced Materials Characterization (AMC)** **Subtheme: Microscopy (MIC) & NDT** **Chair: Shourya Dutta-Gupta** *IIT Hyderabad*	**Invited Speaker**	**Sairam Krishna Malladi**	IIT Hyderabad	Challenges with Visualising Nanoscale Processes in Liquids in TEM	
		AMC_054	Dhanalakshmi Palanisamy	IISc, Bengaluru	Role of micro-twins on the domain structure of magnetic materials	MIC
		AMC_EX4	T. N. Prasanthi	IGCAR, Kalpakkam	Interdiffusion Studies in bcc Solid Solution of Ti-V System	MIC
		AMC_002	Gokul C Thakur	IOCL, Haryana	Study of Microstructural Evolution and Phase Transformation of Reformer Alloys (25Cr35NiNb) during Creep Exposure at High Temperature Services, using Electron Probe Micro Analyzer (EPMA)	NDT
		AMC_013	Arka Mandal	IIT Bombay	SEM-Based Non-destructive Determination of Dislocation Densities in Gallium Nitride	NDT

		AMC_016	Sandip Bysakh	CGCRI, Kolkata	Analytical Transmission Electron Microscopy of nanostructures in Advanced Materials, Coatings and Thin Films: A few case Studies	NDT
		AMC_EX1	Chandra Sekhar Anjania	GITAM	Differential Transient Eddy Current Oscillations Probe for the Detection of Surface and Subsurface Crack in Steel Plate	NDT
		ASM_156	Dhandapani P	Mahindra and Mahindra Ltd	Advanced Material Selection, material model and Non-Destructive Testing Approaches for Enhancing Structural Integrity in Born Electric Vehicles	NDT
LH-2 **T4-2**	**Functional & Smart Materials (FMSM)** **Subtheme: Biomedical (BM)** **Chair: Mudrika Khandelwal** *IIT Hyderabad*	**Invited Speaker**	**Raj Shabadi**	University of Lille, France	Lean Mg-Zn-Ca Alloys for Next-Generation Orthopedic Devices	
		FMSM_022	Karnam Nanda Kishore	University of Hyderabad	Development of nanocrystalline Ti-Zr-Nb-Mo complex concentrated alloys for bio-implant applications.	BM
		FMSM_041	Debolina Saha	CGCRI, Kolkata	Novel Non-Invasive In-Situ Synergistic Magneto-Acoustic Regenerative Therapy (i-SMART) for Accelerated Bone Regeneration	BM
		FMSM_048	Samvidha Das	IISc, Bengaluru	pH-Responsive MOF Nanocarriers for Improved Anticancer Drug Loading, Efficacy and Therapy	BM
		FMSM_091	Aniket Rajendra Navale	IISc, Bengaluru	Development of Stimuli- Responsive Nanoparticles for Cancer Theragnosis	BM
		FMSM_054	Rentala Jayasree	ARCI, Hyderabad	Spark Plasma Sintered Ti6Al4V-YSZ functionally graded composites: in vitro cytocompatibility, corrosion and tribo-mechanical properties	BM
LH-3 **T4-3**	**Advanced Structural Materials (ASM)** **Subtheme: Ti Alloys (Ti), Ceramics & Composites (CC)**	**Invited Speaker**	**TPD Rajan**	IIST Thiruvananthapuram	Advanced Aluminium Matrix Composites for Strategic Sectors: Process and Product Development	
		ASM_105	Karthikeyan K	Hindalco	Influence of Alumina Feedstock Rheology and Sintering Parameters on Injection Molded Ceramic Composite Properties	CC
		ASM_207	Dr Alka Gupta	CSJM UNIVERSITY KANPUR	Grain Boundary Mobility of CeO2 Reinforced 8mol. % Y2O3 Stabilised ZrO2 (8YSZ) Ceramic via Conventional and Non-Conventional Sintering Routes	CC
		ASM_138	Shibayan Roy	IIT Kharagpur	Heterogeneous nano-mechanical response of titanium alloys	Ti

	Chair: **Amit Bhattacharjee** *DMRL, Hyderabad*	ASM_210	Jonnala Subba Reddy	Lakireddy Bali Reddy College of Engineering	Numerical Simulation and Optimization of Electro Discharge Machining Parameters on Titanium Alloy	Ti
		ASM_216	Prasadinee Maharana	IISc, Bengaluru	Deformation mechanism of crept additively manufactured Ti-6242 alloy	Ti
LH-4 **T4-4**	**Extractive Metallurgy (EXM)** **Subtheme: Primary steelmaking (PSM)** **Chair:** **Debashish Bhattacharjee** *IIT Madras*	**Invited Speaker**	**T. Bhaskar**	Tata Steel, Jamshedpur	Top Trends Shaping the Future of Iron & Steel Industry	
		EXM_164	Jayasree Biswas	IIT Bombay	Dynamic modelling of electric arc furnace steelmaking process	PSM
		EXM_110	Vidhyasagar Malaiyappan	JSW, Salem	Enhanced dephosphorization in energy-optimizing furnace steelmaking using alternative flux additives	PSM
		EXM_041	Subhadeep Bakshi	Tata Steel, Jamshedpur	Mitigation of skulling and jam cutting in BOF oxygen blowing lances through high-temperature boron nitride coating	PSM
		EXM_020	Raghuram Peddinti	Visakhapatnam Steel Plant, RINL	Effect of calcium ferrite on dephosphorization efficiency in basic oxygen furnaces: insights from plant-scale experiments at Visakhapatnam Steel Plant	PSM
		EXM_146	Arghya Swarnakar	JSW BPSL, Sambalpur	Enhancing EAF steelmaking efficiency through advanced shrouded oxygen lances: operational and economic perspectives	PSM
		EXM_024	Rajeev Ranjan	Tata Steel, Jamshedpur	A hybrid modelling framework for optimizing ferroalloy additions in secondary steelmaking	PSM
LH-6 **T4-5**	**Integrated and Computational Materials Engineering (ICME)** **Subtheme Continuum**	**Invited Speaker**	**BP Gautham**	TCS, Pune	Accelerating Discovery to Deployment of Materials leveraging science, AI and tacit knowledge in tandem	
		ICME_003	Subhasisa Rath	JINDAL	CFD Modeling of Inclusion Flotation in a Six-Strand Billet Caster Tundish with Integrated Argon Diffuser Blocks	Continuum
		ICME_011	Shibashankar Das	NFC, Hyderabad	Transient Thermal Analysis of the TIG Welded BWR Fuel Cladding Joints and its Experimental Validation via Microstructural Characterization	Continuum
		ICME_013	Soumya Mishra	IISc, Bengaluru	LSW-type scaling laws are surprisingly robust: Alloys with two precipitate phases in core-shell morphology	Continuum

	Chair: Subhradeep Chatterjee *IIT Hyderabad*	ICME_038	Ajithkannan R	IIT Madras	Microstructure Control and Influence of Synchronized Gas Cooling on Laser Powder-Directed Energy Deposition of Haynes 282 superalloy	Continuum
		ICME_079	Arka Lahiri	IIT Roorkee	Multiscale modelling approaches to identify dominant mechanisms in macroscale materials phenomena	Continuum
		ICME_082	Appa Rao Chintha	Tata Steel, Jamshedpur	Integrated Process Modelling: A Differentiating Factor in Modern Steel R&D	Continuum
LH-7 **T4-6**	**Physical & Mechanical Metallurgy (PMM)** **Subtheme: Mechanical Metallurgy (MM), Physical Metallurgy (PM)** **Chair: N. Eswara Prasad,** *MGIT, Hyderabad*	**Invited speaker**	**Sudharshan Phani Pardhasaradhi**	University of Hyderabad	Pushing the frontiers of high strain rate nanoindentation testing	
		PMM_038	Guntreddy Damodhar Naidu	NIT Warangal	Effect of high-temperature exposure on Creep-Fatigue Interaction behaviour of Haynes 282 alloy under AUSC operating conditions	MM
		PMM_111	J Veerababu	IGCAR, Kalpakkam	Generation of Creep-Fatigue Interaction Diagram for Modified 9Cr-1Mo steel	MM
		PMM_121	Pavan A H V	BHEL, Hyderabad	Fatigue life prediction of solution strengthened Ni-based superalloys using a modified universal slope method for thermal power plant applications	MM
		PMM_131	M Nani Babu	IGCAR, Kalpakkam	Effect of PWHT on the Environmental Assisted Fatigue Crack Growth Behaviour of Ferritic Steels	MM
		PMM_141	Sree Harsha Nandam	IIT (BHU), Varanasi	Effects of Minor Addition of Chromium on Shear Transformation Zone Parameters and Incipient Plasticity in Cu-Ti-Based Metallic Glasses	MM
		PMM_145	K. Ganesh Pandiyan	ISRO	Tailoring of Ductility at Cryogenic Temperature for AA2219 Alloy with Severe Plastic Deformation and Annealing	MM
		PMM_164	Anil Kumar Ramavajjala	JNARDDC, Nagpur	Optimization of Heat Treatment Parameters for Cr-V Modified high Fe-ADC12 Aluminium Alloy and its effect on Microstructure and Mechanical Properties	PM
LH-8 **T4-7**	**Integrated and Computational Materials Engineering;**	**Invited Speaker**	**T. A. Abinandanan**	IISc, Bengaluru	Phase Field Study of Alloys with Core-Shell Precipitates	
		ICME_078	Vaishali Shah	Savitribai Phule Pune University	Estimation of interface energy in solid alloys	Atomistic

	AI/ML (ICME) **Subtheme: Atomistic & Computational Thermodynamics (CT)** **Chair: Saswata Bhattacharya** *IIT Hyderabad*	ICME_081	Anuj Goyal	IIT Hyderabad	Ab initio Modelling of Point Defects in Complex Transition Metal Oxides	Atomistic
		ICME_096	Venkata Vamsi Koruprolu	IIT Indore	Predicting elastic moduli in L12 compositions using data-driven methods	Atomistic
		ICME_112	N S Harsha Gunda	IIT Delhi	First-Principles Statistical Mechanics Methods to Understand Phase Stability in Titanium Interstitial Alloys	Atomistic
		ICME_035	Gunti Shiva	University of Hyderabad	Design and Experimental Investigation of Immiscible High-Entropy Alloys	CT
		ICME_115	Rohit Ojha	Thermo-Calc Software	Case Studies of CALPHAD based calculations for Alloy and Process Development	CT
LH-9 **T4-8**	**Materials for Energy & Devices (MDSE)** **Subtheme: Hydrogen & Others** **Chair: R.N. Singh** *BARC, Mumbai*	**Invited Speaker**	**Krishanu Biswas**	IIT Kanpur	High Entropy Alloy Catalysts for Green Hydrogen	
		Invited Speaker	**Thakur Prasad Yadav**	University of Allahabad	Materials for Hydrogen Production and Storage	
		MDSE_050	Dr Sudeshna Das Chakraborty	Tata Steel, Jamshedpur	Tailoring Solid Oxide Electrolyzer Materials for Efficient CO_2 Utilization from Steel Industry Off-Gases	Hydrogen
		MDSE_082	Asheesh Kumar	BARC, Mumbai	Hydrogen storage properties of Tin doped Ti2CrV alloy	Hydrogen
		MDSE_085	Ipsita Marathe	NIT Raipur	Tuning Electrodeposited Multicomponent Alloys toward High-Performance Hydrogen Evolution Catalysis	Hydrogen
		MDSE_103	Gopi Krishna Bhonagiri	University of Hyderabad	Precious metal free Bifunctional electrocatalyst for H2 production using alkaline seawater electrolysis	Hydrogen
LH-10 **T4-9**	**Secondary Materials Processing (SMP)** **Subtheme: Casting, Al&Mg Alloys (Al&Mg)** **Chair:**	**Invited Speaker**	**Anushri Nag**	Tata Steel, Jamshedpur	Waste to wealth: aspects of secondary materials processing creating pathways to Circular Economy and Sustainability	
		SMP_210	Sumit Katiyar	IIT Madras	Hot Deformation Behaviour and Microstructural Evolution of Additively Manufactured H13 Tool Steel	casting
		SMP_235	Abhijeet Anand	DMRL, Hyderabad	Evaluating the high temperature Deformation Behaviour and Continuous Dynamic Recrystallization Characteristics in an as-cast near – α Titanium alloy	casting
		SMP_248	Anurup Datta	IIT Hyderabad	The effect of laser beam profile on the melt pool shape and dendrite growth orientation during the melting and solidification of a single-crystal alloy	casting

	Anil Chaubey *IMMT Bhubaneswar*	SMP_317	Ram Jee Soni	University of Hyderabad	Microstructure, texture and magnetic properties of warm thermomechanical processed carbon free Fe-1.5% Si (Wt.%) non-oriented electrical steels	casting
		ASM_162	Sambit Kumar Sahoo	IISC, Bengaluru	Multiphase CFD modelling of Solidification Transport phenomena and Microstructure evolution in Rheocast Al-7Si-XMWCNT composite	Al&Mg Alloys
LH-11 **T4-10**	**Secondary Materials Processing (SMP)** **Subtheme: Powder Processing (PP), Additive Manufacturing (AM)** **Chair:** **Rajesh Korla** *IIT Hyderabad*	**Invited Speaker**	**Lukas Bichler**	Univ. of British Columbia, Canada	Heat Treatment Optimization of A356 Al Alloy: Relationships Between Electrical Conductivity, Mechanical Properties, and Wear Behaviour	
		SMP_024	Swathi Tudumu	IISc, Bengaluru	Enhancing Printability of AA6061 Alloy during the Laser Powder Bed Fusion Process through Inoculation	PP
		SMP_025	Sreekumar Vadakke Madam	MNIT Jaipur	An advanced metal mixing technique for nanocomposite cast parts	PP
		SMP_230	Sreedhara Sudhakara Sarma	ARCI, Hyderabad	Cryo-milling Approach for Producing the Nanomaterials with Enhanced Performance.	PP
		SMP_251	Abhishek Raj	DMRL, Hyderabad	Development of indigenous Spherical Tungsten powder for Additive Manufacturing using Plasma Spheroidization Technology	PP
		SMP_305	Vikram Dabhade	IIT Roorkee	Development of IN718 Oxide Dispersion Strengthened (ODS) Superalloys by Powder Forging	PP
		SMP_EX1	Ravi K R	IIT Jodhpur	Smart Sensor-Driven Framework for Digitalization and Closed-Loop Control in Directed Energy Deposition under Industry 4.0 Paradigm	AM
		SMP_268	P Sai Kiran	IIT Patna	Plasma sprayed nanoporous multilayer graphene nanoplatelets membrane for water desalination	SE
LH-12 **T4-11**	**Secondary Materials Processing (SMP)** **Subtheme:**	**Invited Speaker**	**Usha JM**	HAL, Bengaluru	Effect of ‘Reverted Austenite’ phase formation during high temperature precipitation treatment on Proof strength of 17-4 PH Steel.	
		SMP_010	Johny Varghese	Universität Siegen	Effect of Direct Aging on Microstructure and Mechanical Properties of Laser Powder Bed Fused Maraging Steel 1.2709	HT
		SMP_021	Prashant Kumar Singh	IIT (BHU), Varanasi	Effect of Heat Treatments on Impact and Tensile Properties of Novel Grade 450 Ferritic Martensitic Steels	HT

	Heat Treatment (HT), Al&Mg Alloys (Al&Mg) **Chair:** **Basudev Bhattacharya** *TATA Steel, Jamshedpur*	SMP_038	Jitendra Narayan Mohapatra	JSW, Bellary	Medium Mn TRIP steel as the future of next generation automotive steels	HT
		SMP_046	Sakthivel A	JSW, Bellary	Optimizing Quenching Parameters to Enhance Hardness and Microstructure in Grinding Media Production	HT
		SMP_065	Aman Mohtta	IIT Madras	Enhancing the Stretch Flangeability of DP 980 Steel through Microstructural Modification of Various Cut Edge	HT
		SMP_110	Kunal Bhansali	IIT Bombay	Optimizing Heat Treatment Parameters for Enhanced Mechanical Properties of IS 1786 Fe550 Rebars: Insights from Plant Data Analysis	HT
		ASM_199	Baipalli Latha	IIT Kharagpur	High temperature deformation response of Al-Cu-Mn-Zr (ACMZ) alloys	Al&Mg
LH-13 **T4-12**	**Failure Analysis & Corrosion (FAC)** **Subthemes** **Failure analysis (FA),** **Corrosion (Corr)** **Chair:** **Rajendra Kumar Goyal** *MNIT, Jaipur*	**Invited Speaker**	**V S Raja**	IIT Bombay	Challenges and Opportunities for Corrosion Researchers in the Hydrogen-Energy Paradigm	
		FAC_094	Praveen Kumar Pandey	IIT Kanpur	Mechanistic Insights into Heat-Treatment-Induced Microstructural Variations and their Correlation with Wear and Corrosion Behaviour of Additively Manufactured 15-5 PH Stainless Steel	Corr
		FAC_096	M Suresh Kumar	NAL, Bengaluru	Corrosion behavior of friction stir lap welded dissimilar AA 2024-T3/AA 7075-T6 aluminum alloy joints	Corr
		FAC_099	G. Keerthiga	IIT Bombay	Effect of Secondary Phase Fraction and Grain Size in Electrochemical Corrosion of Austenitic Low-Density Steel	Corr
		FAC_016	Arpit Gupta	IIT (BHU) Varanasi	High Cycle Fatigue Behaviour and Deformation Mechanism of Superalloy at 750 °C	FA
		FAC_039	Amarjeet Kumar Singh	JSW, Bellary	Failure of Slag Pot Wheel Shafts: Role of Heat Treatment and Magnetic NDE	FA
		FAC_040	Sujata Panda	JSW, Bellary	Comprehensive Microstructural Assement for Sustainable Performance of Electric Resistance Welded Steel Pipes	FA
		FAC_041	Vedula Ram Prasad	HAL, Bengaluru	Metallurgical Failure Investigation of 90° Bent sub-assembly of a Flexible Hose in Hydraulic system belonging to a Military aircraft.	FA
LH-14	**Mineral Processing (MPR)**	**Invited Speaker**	**Kali Sanjay**	IMMT, Bhubaneswar	Strategic R&D on Critical Minerals Technologies at IMMT	

T4-13	**Subtheme: Non-Ferrous Extraction (NF)** **Chair: Vamsi Vikram Gande** *IIT Hyderabad*	MPR_063	B R Sushobhan	ArcelorMittal Nippon Steel India	Iron ore pelletization using Agro-residue biochar: A step towards defossilization	Ferrous
		EXM_001	Chittaranjan Jena	Gharda Scientific Research Foundation	Aluminium extraction through Chloride Based Molten-Salt Electrolysis	
		EXM_005	Nidhi Parmar Rowthu	Hindalco, Gujarat	Influence of Cast Copper Anode Air-Side Slag Contamination on 2D Dendritic Growth During Electrorefining	
		EXM_015	Saurabh Shekhar	NML, Jamshedpur	A clean approach for the production of high pure chromic oxide from chromite tailings	
		EXM_105	Asutosh Acharya	Hindalco	Analysis of Electrolyte in copper refinery process by X-ray technology an alternative for faster and better process control	
		EXM_130	Swapnil Ghatage	Aditya Birla Science & Technology Company Pvt Ltd	Design Aspects of Precipitation Tanks in Alumina Refinery	
LH-15 **T4-14**	**Materials for Strategic Sectors (MFTS)** **Subtheme: Nuclear Energy Systems (NES)** **Chair: T Jayakumar** *Ex-IGCAR, Kalpakkam*	**Invited speaker**	**M. Vasudevan**	IGCAR, Kalpakkam	High Performance Structural Materials and their Associated Processing and Welding Technologies for FBR Applications	
		MFTS_071	Dr. Poulami Chakraborty	BARC, Mumbai	Irradiation response of Indian Reduced Activation Ferritic/Martensitic Steel for Fusion	NES
		MFTS_019	T Narayana Murty	BARC, Mumbai	A Threshold Phenomenon-Based Method for Experimental Characterization of Residual Stress in Engineering Materials	NES
		MFTS_022	Apu Sarkar	BARC, Mumbai	Pull-Out Strength of Pressure Tube–End Fitting Rolled Joints in Indian PHWRs	NES
		MFTS_023	Arvind Kumar Bind	BARC, Mumbai	η_{pl} and γ_{pl} factors evaluation of ODS steel clad material using load separation method and their use in fracture toughness evaluation	NES
		MFTS_026	Navinkumar Sureshchandra Dubey	NFC, Hyderabad	Development of Double Clad Tube by Co-Pilgering process for future Fast Breeder Reactors	NES
		MFTS_030	Santu Dey	VECC, Kolkata	X-ray diffraction and first-principles DFT study of microstructural changes in proton-irradiated RAFM alloy	NES

		MFTS_034	Swarup Acharya	NFC, Hyderabad	Influence of hot deformation, cold swaging and annealing cycles on microstructure-texture evolution in Zircaloy-4 rod material	NES

Day 3: 6th December 2025	**Technical Session-5 (14:00 - 15:30) (Each Invited Talk 20min including Q&A; Each Contributory Oral Talk 10min including Q&A)**					
LHC	**Theme**	**Abstract ID**	**Presenting Author**	**Presenting Author Affiliation**	**Title**	**Subtheme**
LH-1 **T5-1**	**Advanced Structural Materials (ASM)** **Subtheme: Ceramics & Composites (CC)** **Chair:** **B. Jana** *RCMA, Hyderabad*	**Invited Speaker**	**Eun Soo Park**	Seoul National University, Korea	High entropy alloy foam: open a new era of thermal protection utilizing metals	
		ASM_016	Siddharth	IIT Kharagpur	Effect of SiC particle size and content on the mechanical and tribological properties of porous Si3N4-SiC composites fabricated following a facile low-temperature processing route	CC
		ASM_019	Shruti Dubey	IIT Kanpur	Structural and Mechanical stability of spark plasma sintered HfB2 reinforced with CNT, GNP, Graphite and Diamond	CC
		ASM_021	Vasanth Ravindran	CGCRI, Kolkata	Processing of Bioinspired 2D-Few Layer Graphene Nanosheets Encapsulated Silicon Carbide/Graphene Composite	CC
		ASM_048	Himangshu Saikia	IIT Madras	Synthesis, Characterization and CO_2 Adsorption Behaviour of a Novel Medium Entropy MAX Phase $(Ti_{0.5}V_{0.4}Cr_{0.1})_2AlC$ via Molten Salt Route	CC
		ASM_050	Sambit Swain	NIT Rourkela	Effect of nano-dispersed Y2O3 on oxidation behavior of Mo-Ni-Si-Co alloys synthesized by mechanical alloying and sintering	CC
		ASM_054	Srikant Gollapudi	IIT Bhubaneswar	Si based composites for structural applications	CC
		ASM_098	Yash Aryan Singh	IIT Bhubaneswar	Samarium and Erbium Oxide Doped Yttria Stabilized Zirconia	CC

LH-2 T5-2	**Functional & Smart Materials (FMSM)** **Chair:** **Deepu J. Babu** *IIT Hyderabad*	**Invited Speaker**	**VVSS Srikanth**	University of Hyderabad	Multifunctionality by Design: The Potential of Novel Nanocarbons and Their Composites	
		FMSM_072	Aali Jan	IIT Delhi	Porous Metallic Fibre Network Materials for High-Performance Electromagnetic Shielding	
		FMSM_073	Premkumar Murugaiyan	NML, Jamshedpur	Bulk Synthesis of Rare-Earth-Free α''-$Fe_{16}N_2$ Hard Magnets via Fe-Based Melt-Spun Precursors	
		FMSM_075	Reshma I R	IIT Hyderabad	Portable Raman Spectroscopy Platform integrated with Shape-Tuned Gold Nanostructures for Advanced Plasmonic Sensing	
		FMSM_077	Jagathpriya L M	IIT Hyderabad	Flexible Cavity-Coupled Plasmonic Substrates for Tunable SERS Sensing	
		FMSM_081	Suvendu Kumar Barik	IIT Madras	Berry Curvature-Driven Anomalous Hall Effect in Polycrystalline Ferromagnet Fe5Sn3	
LH-3 **T5-3**	**Advanced Structural Materials (ASM)** **Subtheme: AdvanceSteels (AS)** **Chair:** **MS Chalapathi** *Ex-MIDHANI, Hyderabad*	**Invited Speaker**	**Sourav Das**	IIT Roorkee	Application of phase transformation and microstructural engineering to develop ultra high strength cold rolled bainitic steel	
		Invited Speaker	**S. Sankaran**	IIT Madras	Development of High-Strength Stretch Flangeable Automotive Steel Through Quenching and Partitioning Process	
		ASM_011	Akeshwar Singh Yadav	JINDAL	Development of high strength thick normalized steel plates for structural application	AS
		ASM_017	Jayanthi	HAL, Bengaluru	Dynamic Recrystallization Modelling and Microstructural Characterisation of Ferrium® C64 steel under hot deformation	AS
		ASM_022	Mohan K	PSG Tech Coimbatore	Microstructural Evolution and Mechanical properties of hot deformed Novel Low-Carbon Martensitic Steel	AS
		ASM_212	U Savitha	Midhani, Hyderabad	Indigenisation of cobalt free maraging steel	AS
		ASM_226	Sindhu Banothu	University of Hyderabad	Comparative Microstructural Evolution of Scrap-Based and High-Purity Fe–4%Si Alloys during Warm Rolling and Early Recrystallization	AS
LH-4	**Extractive Metallurgy (EXM)**	**Invited Speaker**	**Suvankar Ganguly**	Tata Steel, Jamshedpur	Mathematical Modelling of Heat Transfer in Continuous Casting Mould: Industrial Case Study	

T5-4	**Subtheme: Secondary steelmaking (SSM)** **Chair:** **Ashok Kamaraj** *IIT Hyderabad*	EXM_071	Ravi Golani	Tata steel, Jamshedpur	Optimizing CaSi Wire Injection Parameters for Enhanced Calcium Recovery in Steelmaking	SSM
		EXM_120	Pavani Sapota	JSW, Bellary	Process optimization of RH vacuum degassing to deduce clogging-related abnormalities at the caster	SSM
		EXM_043	Gopisetti Vara Prasad	Mukand Sumi Special Steel Limited	Process-based approach to reducing oxygen levels and ds-type inclusions in bearing steel	SSM
		EXM_063	Vipul Kumar Tiwari	Tata Steel, Jamshedpur	Auto-Pilot for Casting Speed Maximization at Slab Caster	SSM
		EXM_073	Soorya Prakash Jayaraj	JSW, Salem	Kinetic model development to predict steel and slag composition in Bearing steels	SSM
		EXM_108	Krushna Bansode	IIT Bombay	Characterization of inclusions during ladle refining of Resulfurized steel grade (38MnSiVS5) using pin samples	SSM
		EXM_151	Dibyendu Mukherjee	SAIL, Durgapur	Utilization of Al-killed steel slag for effective sulfur control at ladle refining furnace during silicon-killed steel making	SSM
LH-5 T5	**Startup Panel Discussion** **Chair:** **S. Manjini** *JSW, Bellary*	**Siddhartha Misra**		*Tata Steel, Jamshedpur*		
		Vijay Rajendran		*Entellus, Chennai*		
		Vikram Vishal		*IIT Bombay, UrjanovaC Pvt Ltd.*		
		Nishanth Dongari		*IIT Hyderabad, PUR Energy Pvt Ltd.*		
LH-6 **T5-5**	**Integrated and Computational Materials Engineering; (ICME)** **Subtheme: Continuum and Tools** **Chair:** **Viswanath Chintapenta**	**Invited Speaker**	**Rajdip Mukherjee**	IIT Kanpur	Effect of segregation on grain growth in polycrystalline alloys: A multiscale modeling approach	
		ICME_091	Chirantandip Mahanta	IISC, Bengaluru	A phase-field study of the influence of melt-convection during alloy solidification.	Continuum
		ICME_109	Suryanarayana Vikrant Karra	IIT Delhi	Surface and Grain Boundary Phase Transitions: A Variational Framework for Complexions	Continuum
		ICME_120	Swapnil Bhure	IISc, Bengaluru	Dynamic change of process parameters for producing single-crystalline CMSX-4 builds using laser-directed energy deposition (L-DED)	Continuum
		ICME_002	Lopamudra Singh	IIT Bombay	Modelling Temperature-Dependent Anisotropic Deformation of CP-Ti Using a Dislocation Density-based Crystal Plasticity Model	Tools

	IIT Hyderabad	ICME_028	Gurumurthy S	IIT Indore	Phase Field Simulation of Microstructural Evolution of AA7075 Aluminium Alloy During Friction Stir Processing	Tools
		ICME_103	Gerald Tennyson	TCS	ICME and Semantic Frameworks for Intelligent Materials Design	Tools
LH-7 **T5-6**	**Physical & Mechanical Metallurgy (PMM)** **Subthemes: Modelling, Simulation (MS) & Material and Technology Development (MTD)** **Chair:** **Mayur Vaidya** *IIT Hyderabad*	**Invited Speaker**	**Aloke Paul**	IISc, Bengaluru	Solving the unsolved in multicomponent diffusion	
		PMM_064	Sankalp Biswal	IIT Kharagpur	An atomistic and discrete dislocation dynamics approach to precipitation strengthening via η-Ni3Ti precipitates in maraging steels	MS
		PMM_129	Amir Hasan	IIT Kharagpur	First-principles investigation of alloying effects on stacking fault energies and lattice constants of γ″-Ni3Nb: A comprehensive study	MS
		PMM_150	Amit Kumar	DMRL, Hyderabad	Study of high temperature workability of high strength aluminium alloy based on 7XXX series	MS
		PMM_086	Nemai Chandra Gorain	Tata Steel, Jamshedpur	Unlocking Dual-Phase Steel Potential: Microstructure by Design Through Continuous Annealing Simulation	MTD
		PMM_123	Sumit Bhan	IIT Roorkee	Developed strong-ductile B2-strengthened austenitic light-weight steel for automotive applications	MTD
		PMM_134	Pravesh Narang	Tata Steel, Jamshedpur	Accelerated In-House Development of Advanced High-Strength CRDP Steels at Tata Steel	MTD
		PMM_173	Ajit Hanumant Shinde	JSW, Dolvi	Development of Nb-Mo Microalloyed “Fire Resistance” Construction Steels	MTD
LH-8 **T5-7**	**Integrated and Computational Materials Engineering (ICME)** **Subtheme: Machine learning (ML), Hydrogen, Advanced Steels (AS)**	**Invited Speaker**	**Gandham Phanikumar**	IIT Madras	HPC simulations for Microstructure Evolution in ICME approach	
		ICME_EX1	Somnath Bhowmick	IIT Kanpur	Machine learning-driven materials modeling	ML
		ICME_044	Jag Parvesh Dahiya	IIT Madras	CoCrMo-Fe alloy composition design framework based on non-dominated sorting genetic algorithm II	ML
		ICME_063	Soumya Sridar	IIT Kanpur	Rapid Data Acquisition and Machine Learning-Assisted Composition Design of Functionally Graded Alloys via Wire-Feed Additive Manufacturing	ML
		ICME_086	Krishnaiah Jallu	IIITDM Kurnool	Data-Driven Screening of Thermodynamically Stable and Structurally Compact Perovskites	ML

	Chair: **Saptarshi Majumdar** *IIT Hyderabad*	ICME_094	Kishalay Mitra	IIT Hyderabad	Faster, Smarter, Safer: Physics-Informed Surrogates for Process Optimization	ML
		MDSE_076	Masampally Vishnu Swaroopji	TCS, Pune	Modeling and Simulation of Hydrogen Production in a PEM Water Electrolyzer at High Current Densities	Hydrogen
		ASM_126	Shetti Swamy	IIT Jodhpur	Design and Development of a Lightweight Steel Through Computational Thermodynamics Approach and Experiments	AS
LH-9 **T5-8**	**Materials for Energy and Devices (MDSE)** **Subtheme: Thermoelectrics and Pyroelectrics (Thermo & Pyro)** **Chair:** **Dibakar Das** *University of Hyderabad*	**Invited Speaker**	**Tanmoy Ghosh**	RGIPT	Design of Advanced GeSe-Based Thermoelectric Materials by Entropy-Driven Alloying and Metavalent Bonding	
		MDSE_EX1	Vikrant Trivedi	NIMS, Japan	Synergistic Enhancement of Thermoelectric Performance in $SrSi_2$ via Graphene Nanoplatelet Integration	
		MDSE_033	S E Arthiya	IIT Hyderabad	Composition-dependent Nanostructured Higher Manganese Silicide for Thermoelectric Power Generation	
		MDSE_049	Valaparla Usharani	IIT Hyderabad	Effects of Nanostructuring on the Lattice Thermal Conductivity of n-type Indium Antimonide	
		MDSE_058	Uday Kumar M	IIT Hyderabad	Realization of Low Thermal Conductivity in n-type Ni2CuCrFeAl Thermoelectric High Entropy Alloy	
		MDSE_073	Kaushik Das	IIEST, Shibpur	Polyurethane-matrix Piezoelectric Nanocomposite Paints for Energy Harvesting Applications	
		MDSE_090	Soumya Ranjan Mishra	IIT Madras	Tailoring InSb alloy for enhanced thermoelectric applications by thermodynamic routes	
		MDSE_094	Kunal Kishore	IIT Kanpur	Optimization of device parameters in Thermoelectric Generator for Enhanced Waste Heat Recovery in Industrial Systems	
LH-10 **T5-9**	**Archeometallurgy (AMT)** **Chair:** **K. Bhanu Sankara Rao** *IIT Hyderabad*	**Invited Speaker**	**B. Venkataraman**	IGCAR, Kalpakkam	Bronzes, Gold, and a Cosmic Dancer: An NDE Journey Through Indian Archeometallurgy	
		AMT_002	Koushik Das	IIEST, Shibpur	Did Ancient Indian Crucible Steelmakers use Flux?	
		AMT_005	Rajat Gupta	IIT (BHU), Varanasi	Rediscovering Damascus Steel: Insights from Ancient Metallurgical Engineering	
		AMT_006	Nayanathara S	IIT Hyderabad	Ancient metallurgy and Early Sustainable Practices-Recycling, Alloying and Resource Management	
		AMT_011	Sriperumbudur Jaikishan	Bhavans New Science College, Hyderabad	Forge Welded Iron Cannon in Medieval Deccan Forts	

		AMT_013	Menaka M	IGCAR, Kalpakkam	Characterization of Ancient Coins using Lock-in Thermography	
		AMT_EX1	Meghana Desai	The Cyprus Institute, Cyprus	Surface matters: Decarburising crucible steel Ingots	
		FMSM_090	Jitendra Sharma	Shri Mata Vaishno Devi University, Katra	Rare Earth Based Luminescent Nanomaterials	
LH-11 **T5-10**	**Secondary Materials Processing (SMP)** **Subtheme: Surface Engineering (SE)** **Chair: L. Ramakrishna** *ARCI, Hyderabad*	**Invited Speaker**	**Christopher Berndt**	Swinburne University of Technology Australia	The Beauty of Imperfect Microstructures Exhibited by Thermal Spray Coatings	
		SMP_028	Ajay Kumar Jha	Tata Steel, Jamshedpur	The Elusive Uncoated Spot: A Complex Metallurgical Mystery in Continuous Galvanizing	
		SMP_033	Swati Sharma	MNIT Jaipur	Enhanced mechanical properties and corrosion resistance of plasma sprayed CeO2 reinforced High entropy alloy coatings	
		SMP_152	Dr Pitchuka Suresh Babu	ARCI, Hyderabad	Optimization of spray conditions and performance evaluation of thin WC-Co-Cr coating by HVAF	
		SMP_154	Kishoore Kumar S	IIT Madras	Study on interface properties of copper Cold-Sprayed Ti-6Al-4V Composite plates via Vacuum Annealing and Friction Stir Processing	
		SMP_214	Manoj Kumar	IMMT Bhubaneswar	Microstructural, Phase, and Mechanical Gradation with Depth in Laser Surface Alloyed and Melted Zones of Inconel 718	
		SMP_224	Mo Rizwan Ahmad Qureshi	IIT Gandhinagar	Fabrication of Al-Sn Surface Composite using Friction Stir Processing: Influence of Soft-Reinforcement Phase on Mechanical, Wear, and Electrochemical Properties	
		SMP_246	Bura Kavya	ARCI, Hyderabad	Tribological and Electrochemical Behavior of Micro Arc Oxidation Coated 5083 Al Alloy	
LH-12 **T5-11**	**Secondary Materials Processing (SMP)** **Subtheme:**	**Invited Speaker**	**Do-Hyang Kim**	Yonsei University, South Korea	Amorphous Phase Precursor Route to Ni-Ti Based Shape Memory Nanostructures	
		SMP_EX3	Lava Kumar Pillari	UBC Canada	Effects of Solution Heat Treatment and Natural Aging on Microstructure, Mechanical Properties, and Electrical Conductivity of B319 Aluminum Alloy	HT

	Heat Treatment (HT) & Other Processes (OP) **Chair: Ramaguru Gurusamy** *DRDO DIA CoE, IIT Hyderabad*	SMP_EX2	Mr Ludger Wahlers	Erichsen GmbH & Co.Kg. Germany	Hydraulic bulge testing at elevated temperatures	OP
		SMP_127	Ajay Kumar	Tata Steel, Jamshedpur	Reduction in flying scales during descaling through in house primary descaler hood modification	OP
		SMP_147	Sivakumar K	NIIST, Thiruvananthapuram	Sustainable processing of rare earth added aluminium alloys for Aero and automobile applications	OP
		SMP_303	Sanjeev Kumar	SAIL, Ranchi	Process Innovation and Performance Evaluation of R350HT Rails for 25-Ton Axle Load Freight Corridors.	OP
LH-13 **T5-12**	**Failure Analysis & Corrosion (FAC)** **Subtheme: Corrosion (Corr)** **Chair: Atul Kumar Ballal,** *VNIT Nagpur*	**Invited Speaker**	**Shashi Bhushan Arya**	NIT Suratkal	Internal Corrosion of Pipeline steels in Indian Oilfield Water	
		FAC_002	Rutuja Bhosale	Hindalco	Assessment of Protective Coatings on Aluminium Under Acidic Conditions via Electrochemical Impedance Spectroscopy	Corr
		FAC_007	Jitendra Kumar Singh	JINDAL	Assessment of Corrosion Resistance Index of Corrosion-Resistant Steel Rebars by Weight Loss Method under Salt Spray Exposure	Corr
		FAC_008	RAMESH P	Ashok Leyland	An assessment of the pitting susceptibility of aluminium alloy in different cooling fluids	Corr
		FAC_035	P.V.S. Chaithanya	NML Jamshedpur	Oxidation behaviour of Ni-based superlloy IN740H: Influence of γ' size and lattice misfit (δ)	Corr
		FAC_057	Vineet Patel	JSW, Bellary	To study of Cut edge protection of Zn-Al-Mg alloy coated steel	Corr
		FAC_072	Ghrutanjali Sahu	IMMT Bhubaneswar	Electrophoretic deposition of two-dimensional GO-MXene nanocomposite coating for corrosion prevention	Corr
LH-14 **T5-13**	**Mineral Processing (MPR)** **Subtheme: Ferrous and Other Processes (OP)**	**Invited Speaker**	**Ranjeet Kumar Singh**	NML, Jamshedpur	Fine Particle Gravity Separation: Toward Next-Generation Techniques	
		MPR_023	Rajdeep Mishra	IMMT Bhubaneswar	Eco-Friendly Upgradation of Low-Grade Iron Ore via Biomass-Assisted Magnetization Roasting	Ferrous
		MPR_054	Gutti Chinna Chandrudu	IIT Kharagpur	Novel Low-Temperature Alkali Treatment for Iron Ore Slime Beneficiation	Ferrous

	Chair: **Bankim Tripathy** *IMMT Bhubaneswar*	MPR_056	Vibhuti Roshan	NMDC Limited	Beneficiation Studies on Composite Sample of Bailadila sector, NMDC: Development of process flowsheet for new mines	Ferrous
		MPR_057	Sibangi Rath	IMMT Bhubaneswar	Hydrogen-Based Reduction Roasting of Banded Iron Ore: Enabling Sustainable Valorization of Low-Grade Resources	Ferrous
		MPR_059	Amit Mogale	JSW, Dolvi	Enhancing Cold Crushing Strength (CCS) of Iron Ore Pellet through Flux Size Optimization	Ferrous
		MPR_061	Teja Reddy Vakamalla	NIT Calicut	Development of an efficient machine learning model for hydrocyclone performance parameters prediction	Ferrous
		MDSE_020	Ashok Patnaik	JSW BPSL, Sambalpur	Efficient Utilization of Compressed Air in Ash Handling System through QC Approach at JSW BPSL DRI Unit	OP
LH-15 **T5-14**	**Materials for Strategic Sectors (MFTS)** **Subtheme Nuclear Energy Systems (NES)** **Chair:** **Bharat B Panigrahi**, *IIT Hyderabad*	**Invited Speaker**	**G. Varaprasad Reddy**	IGCAR, Kalpakkam	Materials Development and Evaluation for India's Mission on Advanced Ultra Supercritical Coal-fired Technology	
		MFTS_035	Saurav Sunil	BARC, Mumbai	Effect of crack orientation on delayed hydride cracking in Zr-2.5Nb pressure tube material	NES
		MFTS_047	Vijay Kaushik	NFC Hyderabad	Modeling of the Electron Beam Melt Refining of Niobium w.r.t Nitrogen, Carbon, and Oxygen Impurities	NES
		MFTS_057	Utpal Singha	NFC Hyderabad	Advances in Manufacturing and Performance of Pressure Tubes and Calandria Tubes for Indian PHWRs	NES
		MFTS_060	Kumar Vaibhaw	NFC Hyderabad	Modified Billet Cu-jacketing process for Enhanced Recovery in Hot Extrusion of Zr/Ti Alloys for Nuclear Application	NES
		MFTS_076	Diptimayee Samantaray	IGCAR, Kalpakkam	Developing constitutive models to depict deformation behaviour of advanced alloys	NES
		MFTS_081	Aniket Shingewad	IGCAR, Kalpakkam	Study of Mechanical and Metallurgical Properties of Cobalt Base Hard faced Deposit on Austenitic Stainless Steel Component with Narrow Inner Diameter	NES
		MFTS_055	Ankit Agarwal	NFC, Hyderabad	Development of Hastalloy Tubes for Indian Molten Salt Breeder Reactor	NES