

THERMANS – 2024
(January 16 - January 18, 2025)

Multipurpose Hall, Training School Hostel, BARC, Anushaktinagar, Mumbai

Day 1: January 16, 2025 (Thursday)

Session & Time	Activity	Speakers
(9:30 to 10:30 hrs)	Inauguration of Symposium & ITAS Award distribution	
Session-1 (10:30 to 11:00hrs) Session Chair Dr. V. Venugopalan	PL	New Approaches in Decarbonization of Metals Production Prof. Ramana Reddy , University of Alabama, USA
High Tea (11:00 to 11:30 hrs)		
Session-2 (11:30 to 13:15 hrs) Session Chair Dr. S. R. Dharwadkar	AL - 1	Netzsch - ITAS Award Lecture
	IT – 1	Reinforced Carbon-Carbon (RCC) Composite for high temperature applications in Rockets & missiles. Dr. A. P. Dash , HEMRL, Pune
	IT – 2	Applications of Thermal Analysis Techniques in the Development of CO ₂ Removal Systems for Manned Space Missions Dr. Rajeev Raghwan , Vikram Sarabhai Space Centre (VSSC) Thiruvananthapuram,
	IT – 3	Air Processed Asymmetric Squaraine Dyes for Photovoltaic Application Prof. Vilko Mandić , University of Zagreb, Croatia
Lunch (13:15 to 14:15 hrs)		
Session-3 (14:15 to 15:30 hrs)	AL - 2	Setaram – ITAS Calorimetry Excellence Award Lecture

Session-3 (14:15 to 15:30 hrs) Session Chair Dr. C.N.Patra	IT – 4	Excitements of Thermal Analysis: Studying Thermo-oxidative Decomposition and Heat Quenching in Convenient Making of Useful Nanomaterials and in Understanding Use of Edible Oils Prof. R. K. Verma , Magadh University, Bodhgaya
	IT – 5	Thermal behaviour and application of carbon nanostructures Prof. Imre M. Szilagy i, University of Miskolc, Hungary, ONLINE
Tea (15:30 to 15:45 hrs)		
Session-4 (15:45 to 17:00 hrs) Session Chair Dr. Arun Pratap	Poster Session (A = 25 + B = 9 + C=8 → Total 42) A1: 121 – 126; A2: 121 -122, 124 – 127, 129, 131 – 134; A3: 122, 124 – 130; B1: 121 – 125; B3: 121 – 124; C2: 121 – 122; C3: 121; C4: 122; C5: 122 – 125;	
Session-5 (17:00 to 18:15 hrs) Session Chair Dr. Y. K. Bhardwaj	IT – 6	Thermal Properties of Unsaturated Soils: Theory and Measurement Prof. Rao Martand Singh , Norwegian University of Science & Technology, Norway
	SL – 1	Controlled thermal conversion of molecule to nano-sized functional material Dr. Adish Tyagi , Chemistry Division, BARC
	SL – 2	Growth of single crystals at high temperature Dr. Mohit Tyagi , Technical Physics Division, BARC
	SL – 3	Radiolytically Functionalized Amine Dense Biodegradable Adsorbents for CO ₂ capture: Thermo -gravimetric Characterization and Adsorption Analysis Dr. Nilanjil Mishra , Radiation Technology Development Division, BARC
Tea (18:15 to 18:30 hrs)		
Session-6 (18:30 to 19:30 hrs) Session Chair Prof. R. K. Verma	EL	Transforming solids into functional materials: Role of heat treatment Dr. A. K. Tyagi , HBNI
Cultural Program (19:30 to 20:30 hrs)		

Dinner (20:30 hrs onwards)

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Day 2: January 17, 2025 (Friday)

Session & Time	Activity	Speakers
Session-7 (9:30 to 11:00hrs) Session Chair Dr. Bhasikuttan	IT – 7	Role of thermodynamics and Phase diagram in deciding the path of the transformation in Nb, Ti and Zr Based Systems Dr. R. Tewari , Bhabha Atomic Research Centre (BARC), Mumbai
	IT – 8	Nanoparticle assisted local hyperthermia in cancer therapy Prof. Vesa-Pekka Lehto , University of Eastern Finland, Finland
	IT – 9	Designing of inorganic compounds for chemical sensing applications - Insights from thermo-analytical techniques Dr. Jayraman , IGCAR
Tea (11:00 to 11:15 hrs)		
Session-8 (11:15 to 13:15 hrs) Session Chair Dr. Alok Awasthi	IT – 10	Role of lattice degree of freedom in electronic transitions in solids Dr. Bobby Joseph , Elettra-Sincrotrone Trieste, Italy
	IT – 11	Study of Terminal Solid Solubility of Hydrogen and Deuterium in Zr-2.5Nb Alloy Pressure Tube Material Dr. R. N. Singh , Bhabha Atomic Research Centre (BARC), Mumbai
	SL – 4	Hydrogen Ingress in Irradiated Coolant Channels: Role of DSC in In-Service Inspection and Monitoring Ms. Akanksha Samanta , Post Irradiation Examination Division, BARC
	SL – 5	High Temperature Processing of Materials for Steam Electrolysis Dr. R. K. Lenka , Powder Metallurgy Division, BARC

Session-8 (11:15 to 13:15 hrs)	SL – 6	Thermal Effects: An Essential Facet of Studies on Nuclear Materials Dr. Dheeraj Jain , Chemistry Division, BARC	
	Session Chair Dr. Alok Awasthi	IL	Various Research Instruments and Respective Applications Mr. Alokranjan Yadav , Kep Technologies – Sinsil International
Lunch (13:15 to 14:15 hrs)			
Session-9 (14:15 to 15:30 hrs)	IT – 12	Structure and Thermochemistry of Functional Metal Oxides Prof. Pradha Saradhi M. , SRM University, Amaravati	
	Session Chair Dr. Rajesh Pai	IT – 13	Impact of Calcination Conditions of the Catalyst on the Catalytic Performance Dr. Suneet Kumar Yadav , Süd-Chemie India Pvt. Ltd., Vadodara
	SL - 7	Spot technique - A tool for measuring the solidus and liquidus of refractory and radioactive alloys Dr. S. Balakrishnan , MCMFCG, IGCAR	
Tea (15:30 to 15:45 hrs)			
Session-10 (15:45 to 17:00 hrs)	Poster Session (C = 4 + D = 22 + E = 16 → Total 42)		
Session Chair Dr. Virendra Kumar	C5: 126; 128 – 130; D1: 123 – 126; 128 – 135; D2: 121 -122, 124 – 125; D3: 121; D4: 121 – 122; 124 – 126 E1: 121 – 125, 127 - 129; E2: 121, 123 – 126; E3: 121-122; E4: 121;		
Session-11 (17:00 to 18:15 hrs)	OP – 1 A2 - 123	Standard molar Gibbs energy of formation of Bi₂Ti₄O₁₁(s) from EMF measurements Mr. Chita Patra , IGCAR	
	Session Chair Dr. Amritprakash	OP – 2 A2 - 128	Excess enthalpy associated with PRAN reactor, validation using TEG generator and application feasibility Mr. Suhas Phapale , Chemistry Division, BARC
	OP – 3 C2 - 123	Hydrogen/Deuterium Desorption Kinetics of Pd-Ag Hydride/Deuteride Mr. Abhishek Sharma , Product Development Division, BARC	

Session-11 (17:00 to 18:15 hrs) Session Chair Dr. Amritprakash	OP – 4 C4 - 121	Catalytic Activity of CuFe ₂ O ₄ on the Thermal Decomposition of Ammonium Perchlorate Ms. Supriya N , Vikram Sarabhai Space Centre, Thiruvananthapuram
	OP – 5 C5 - 121	Synthesis, Characterization and Thermal Expansion of Multi-lanthanides Incorporated at A site of High Entropy Pyrochlore Mr. Nitin Gumber , Fuel Chemistry Division, BARC
Tea (18:15 to 18:30 hrs)		
Dinner (19:00 hrs onwards)		

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Day 3: January 18, 2025 (Saturday)		
Session & Time	Activity	Speakers
Session-12 (9:30 to 11:00hrs) Session Chair Dr. N. Choudhury	IT – 14	Thermal Behavior of MOF membranes: Morphology-Dependent Insights into Crystallization and Glass Transition Prof. Prabhakar Singh , IIT BHU, Varanasi
	IT – 15	Metal Organic Framework Integrated Composite Patches as the Multifunctional Drug Delivery Platform for Enhanced Wound Healing and Anti-Inflammatory Applications in Freezing Conditions Dr. Naved Malek , SVNIT, Surat
	IT – 16	Tailoring the Physico-Chemical Properties of Ionic Liquids and Deep Eutectic Solvents for Enhanced Sorption and Extraction Processes Prof. Ramesh Gardas , IIT Madras
Tea (11:00 to 11:15 hrs)		

<p style="text-align: center;">Session-13 (11:15 to 13:15 hrs)</p> <p style="text-align: center;">Session Chair Dr. H.N. Jena</p>	<p>OP – 6 D1-133</p>	<p>Understanding the Na_xMnO_2 system: A Thermodynamic and XPS approach Mr. Shubham Narang, Chemistry Division, BARC</p>
	<p>OP – 7 D1 - 122</p>	<p>Examine the Structural, Magnetic, and Supercapacitance Characteristics of the Ni-Co Ferrite System after Zinc Substitution Ms. Sonam Kumari, Goa University, Goa</p>
	<p>OP – 8 D1 - 121</p>	<p>Reaction pathway governing Ti_2AlC MAX-phase formation: Insights from High - Temperature DSC Mr. Mohammad Yunus, Homi Bhabha National Institute, Mumbai</p>
	<p>OP – 9 D1 - 127</p>	<p>Thermal Analysis: An Important Tool for Preparation and Qualification of CuCrO_2 towards Hydrogen Sensing Applications Ms. Aleena Xavier, Vellore Institute of Technology</p>
	<p>OP – 10 D2 - 123</p>	<p>Pebble Bed Thermal Expansion and Sintering Investigation of Lithium Titanate for Fusion Blanket Application Mr. Aroh Srivastava, Institute of Plasma Research, Ahmadabad</p>
	<p>OP – 11 E1 - 126</p>	<p>Studies of the effect of high energy $\hat{\Gamma}^3$-radiation on the oxidative stability of Ethylene-Vinyl Acetate copolymer Mr. Arijit Ghoshal, Radiation Technology Development Division, BARC</p>
	<p>OP – 12 E1 - 130</p>	<p>Synthesis and Characterization of Polymeric Composite for Fire Retardant Application Ms. Darshana K Ghonge, Analytical Chemistry Division, BARC</p>
	<p>OP – 13 E2 - 122</p>	<p>Exploring Potential of Pluronics Induced Protein Fibrils as Drug Delivery Agents: Mechanistic Understanding via Biophysical Approach Ms. Anu Jain, Indian Institute of Technology, Bombay, Mumbai</p>
	<p>OP – 14 E4 - 122</p>	<p>Metal-Organic Framework-Integrated Polymeric Hydrogel: A promising Drug Delivery Platform for Breast Cancer Treatment Ms. Ishani Pandya, SVNIT, Surat</p>

Lunch (13:30 to 14:30 hrs)		
Session-14 (14:30 to 15:00 hrs)	SL – 8	Application of Thermodynamics in Solid State Transformations – Examples from Zirconium Dr. Mani Krishna K. V. , Mechanical Metallurgy Division, BARC
Session Chair Dr. V.M.S. Verenkar	SL – 9	Thermal studies assisted evaluation of stability and polymorphism of potentially bioactive organo -selenium compounds Dr. Prasad P. Phadnis , Chemistry Division, BARC
(15:00 – 16:00 hrs)	Valedictory and Award Distribution	
High Tea (16 hrs onwards)		

PS: (Duration: IT – 30mins; AL / SL / OP / IL-15mins; EL – 60mins); where IT- Invited Talk; AL – Award Lecture; SL – Short Lecture; OP – Oral Presentation; EL – Evening Lecture; IL – Industry Lecture