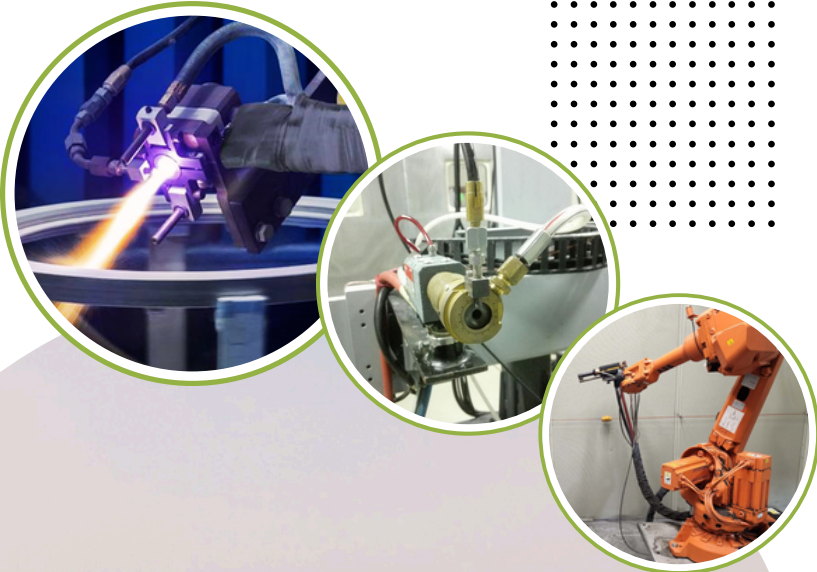




International Conference on Advancements in Thermal-Spray

July 18-21, 2024

CLH, IIT PATNA



Organized by:



Plasma Spray Coatings Laboratory

Metallurgical and Materials Engineering,
Indian Institute of Technology Patna,
Patna-801103, Bihar, India

PATRON



Prof. T.N. Singh
Director, IIT Patna



Dr. Ramanuj Narayan
Director, CSIR-IMMT
Bhubaneswar



Dr. Goutam Sutradhar
Director, NIT Jamshedpur



Dr. Naresh Chandra Murmu
Director, CSIR-CMERI
Durgapur

CONVENER



Dr. Anup Kumar Keshri
Principal Co-Ordinator,
Center of Excellence,
IIT Patna

EVENTS

- Plenary Lectures
- Keynote Lectures
- Invited Lecture
- Oral Presentations
- Poster Presentation
- Hands-on Thermal spray

AWARDS

- Best oral awards
- Poster presentation award

Tour of Bihar's beauty!



BODHIGAYA

GANGA ARTI

RAJGIR

NALANDA

GALLA DINNER



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Program Schedule



Day 1: 18th July 2024, Thursday

Time	Event		
08:00 - 9:20	Registration (CLH)		
9:30 - 10:40	Inauguration function (CLH 003)		
10:45 - 11:45	Inauguration of Centre of Excellence (CoE) along with High Tea (BLOCK 2)		
Plenary Session (CLH 003)			
11:45 - 12:25 PL 01	Dr. Ramanuj Narayan Director, CSIR-IMMT Bhubaneswar		
12:25 - 13:05 PL 02	Prof. Goutam Sutradhar Director, NIT Jamshedpur (Macro and Nano Metal Matrix Composites)		
13:05 - 13:45 PL 03	Dr. Naresh Chandra Murmu Director, CSIR-CMERI Durgapur		
13:45 - 14:45	Lunch Break (CLH 1st Floor)		
Parallel Technical Session: 01			
	Wear and Corrosion resistant coatings (CLH 003)		Thermal Barrier Coating (CLH 002)
Session Chair	Dr. Anirban Chowdhury Associate Professor, MME, IIT Patna		
14:45 - 15:10 IL 01	Wear and Corrosion Resistant Coatings on AZ91D Mg Alloy through Chemical Conversion and Electroless Deposition Processes Dr. Tushar Banerjee NIT Jamshedpur	14:45 - 15:10 IL 02 Session Chair	Advanced Thermal Barrier Coatings using Liquid Feedstock for Aerospace Propulsion Dr. Sisir Mantry CSIR-IMMT Bhubaneswar
15:10 - 15:45 KL 01	Material Advances for Spray Technologies (MAST) for Semiconductor Industries Dr. Gopi Chandran Applied Materials	15:10 - 15:45 KL 02	Thermal process (CVD) for developing graphene coating for corrosion resistance Prof. Raman Singh (Online) Monash University, Australia
15:45 - 16:10 IL 03	Development of Self-Lubricating Wear Resistant Ceramic Cutting Inserts for High Speed Machining of Steel Dr. Nilrudra Mandal CMERI-Durgapur	15:45 - 16:10 IL 04	Thermal spray coating for aerospace application Dr. Meenu Srivastava CSIR-NAL, Bengaluru
16:10 - 16:35 IL 05	Role of Graphene nanoplatelets reinforcements on Characteristics and Tribological Performance of HVOF sprayed Cr ₃ C ₂ -NiCr Coatings Dr. Sekar Prakash Saladi SVIT, Vasad, Gujarat	16:10 - 16:35 IL 06	Spectroscopic Evaluation of Thermal Barrier Coatings Prof. Ashutosh S. Gandhi IIT Bombay
16:35 - 16:50	Refreshment Break (CLH)		
16:50 - 17:15 IL 07	Effect of Cicer arietinum (Chickpea/Bengal gram) on the Corrosion of Mild Steel in Chlorinated Environments at Varying pH Levels Prof. Kallol Mondal IIT Kanpur	16:50 - 17:25 KL 03	Fabrication and Characterization of W-Cu Functionally Graded Bulk Coating by Cold Spray Process for Plasma-Facing Components (PFC) Applications Dr. Satish Tailor MECPL
17:15 - 17:40 IL 08	Hybrid Fibre Metal Laminates Prof. Srikanth Korla NIT Warangal	17:25 - 17:50 IL 09	Thermal Barrier Coatings: Strategies and Bimodality Prof. Kantesh Balani (Online) IIT Kanpur
17:40 - 18:00 IL 10	The rise of steel infrastructure in Modern India: Trends, Challenges and opportunities Shri Amit Kumar DGM, SAIL	17:50 - 18:00 CT 01	Tailoring the stoichiometry in NdNbO ₄ for advanced thermal barrier coating applications Mr. Satish Indupuri IIT Patna
19:00 onwards	GALA DINNER, Guest House IIT Patna		



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Day 2: 19th July 2024, Friday

Plenary Session (CLH 003)

09:30 - 10:05
PL 04

Strategies to Develop Environmentally Resistant Multifunctional Coatings
Prof. V. S. Raja,
IIT Bombay

Parallel Technical Session: 02

	Multifunctional Coating (CLH 003)		High Entropy alloys and Ceramics (CLH 002)
10:05 - 10:30 IL 11 (Session Chair)	Enhancement of Protective Oxide Formation Through Nanocrystalline Structure Dr. Rajiv Kumar IIT Ropar	10:05 - 10:30 IL 12 (Session Chair)	Hot corrosion behavior of thermal barrier coatings Dr. Shashi Bhushan Arya NIT Karnataka
10:30 - 10:55 IL 13	Dr. Lalita Dept. of Science and Technology, GOI	10:30 - 10:55 IL 14	Advanced Thermal Barrier Coating using Air Plasma Spray for Aerospace Applications Dr. Ranajit Ghosh CMERI-Durgapur
10:55 - 11:10 CT 02	Effects of the type and size of blasting media on the residual stress of steel Mr. Setu Suman IIT Indore	10:55 - 11:10 CT 03	Plasma sprayed bimodal particulate Al ₂ O ₃ - Ytria Stabilized Zirconia-Carbon Nanotube composite coatings: A nanoindentation study Mr. Shiven Ponnappureddy IIT Kanpur
11:10 - 11:25	Refreshment Break (CLH)		
11:25 - 11:50 IL 15	Pulsed Electrodeposited Nickel – Graphene oxide – Silicon Carbide Composite Nano Coatings: A Physico-Chemical and Tribo-Mechanical Evaluation Dr. Rashmiranjan Sahoo CMERI-Durgapur	11:25 - 11:50 IL 16	Thermal Spray Industrial perspective: Case study HVOF vs High speed Laser cladding Dr. Ragesh Bateriwala Keepsake Engineering
11:50 - 12:05 CT 04	Advancing Two-Phase Energy Systems With Ionic Liquid-Based Coating Technologies Mr. Abhash Shukla IIT Patna	11:50 - 12:05 CT 05	A Detailed Evaluation of a Nozzle-based Test Setup for Examining Sediment Erosion in Hydraulic Turbines Mr. Partha Pratim Borah NIT Silchar
12:05 - 12:20 CT 06	Current challenges and future research perspectives in thermal spray coatings on magnesium alloy Mr. S. Senthilkumar Er. Perumal Manimekalai College of Engineering, Hosur	12:05 - 12:20 CT 07	Laser remelting of plasma sprayed alumina based thermal barrier coatings. Ms. Shalini Kushwaha IIT Kanpur
12:20 - 13:30	Plasma Spray Coatings Facility & Sophisticated Coating Characterization Tools (Block 6)		
13:30 - 14:30	Lunch Break (CLH 1 st Floor)		
Parallel Technical Session: 03			
	Composite Coating (CLH 003)		Nanomaterials (CLH 002)
14:30 - 14:55 IL 17 (Session Chair)	Dr. G. ShivKumar ARCI Hyderabad	14:30 - 14:55 IL 18 (Session Chair)	Robust superhydrophobic high entropy alloy coating reinforced with Ceria (CeO ₂) + Titania (TiO ₂) and Graphene nanoplatelets (GNP) Dr. Swati Sharma Assistant Professor, MNIT Jaipur
14:55 - 15:20 IL 19	Thermal spray HVOF WC powder Mr. Hiren Parmar C&M Technology	14:55 - 15:20 IL 20	Electricity generation by splitting of water from hydroelectric cell prepared from Ferrite Nanomaterials and its Global Market Dr. Rakesh Kumar Singh AKU Patna
15:20 - 15:45 IL 21	TVS brake lining Dr. N.S. R. Kanna TVS	15:20 - 15:45 IL 22	Advancement of thermal Spray technology in modern steel industry Ms. Anushree Nag Tata Steel



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15:45 - 16:00 CT 08	Navigating the Seas of Erosion Corrosion: Assessing Challenges and Charting Future Directions in Naval Coating Technologies – A Comprehensive Review Mr. M. Anbarasu Research Scholar, NIT Trichy	15:45 - 16:00 CT 09	Application of Thermally Sprayed coating in Hydrokinetic turbines to reduce slurry-based Erosion: A Review Mr. Manabendra Mali Research Scholar, NIT Sicha
16:00 - 16:15 CT 10	Investigating the Covid-19 Pandemic Need Effective Surface Coatings by Twin Wire Arc Spraying as a Thermal Spray Technology: A Review Mr. C. Khader Government College of Engineering, Bargur	16:00 - 16:15 CT 11	Fabrication of nanoporous multilayer graphene nanoplatelets membrane for water desalination Mr. P. Sai Kiran IIT Patna
16:15 - 16:30	Poster Presentation and Refreshment (CLH)		
Plenary Session (CLH 003)			
16:30 - 17:05 PL 05	Sustainability of Metal Structures via Spray Clad Remanufacturing Prof. Sanjay Sampath (Online) Stony Brook University, USA		
Parallel Technical Session: 04			
Session Chair	Dr. Devinder Yadav Assistant Professor, MME, IIT Patna	17:05 - 17:30 IL 24 Session Chair	Dr. Shailesh M Pandey Associate Professor, NIT Patna
17:05 - 17:30 IL 23	The mechanics of cold sprayed Al coatings, with a focus on in-situ electron microscopic investigation of deformation mechanisms Dr. Pranjal Nautiyal (Online) Oklahoma State University	17:30 - 17:40 CT 12	Cavitation Wear Mitigation in Hydraulic Turbines Dr. Navneet Singh IIT Patna
17:30 - 17:50 IL 25	Optimizing Twin Wire Arc Sprayed Coatings for Enhanced Antibacterial and Virucidal Properties Against COVID-19 Dr. D.Thirumalaikumarasamy Government College of Engineering, Bargur	17:40 - 17:50 CT 13	Scaling up Simultaneous Exfoliation and 2H to 1T Phase Transformation of MoS ₂ Mr. K. Vijay Kumar IIT Patna
17:50 - 18:00 CT 14	Plasma-Sprayed Nanodiamond-Reinforced NiCrBSi Composite Coating for Improved Wear and Corrosion Resistance Mr. Abhishek Kumar Grain IIT Patna	17:50 - 18:00 CT 15	Defect engineering in nanomaterials via Thermal Spray Mr. Niranjana IIT Patna

Day 3: 20th July 2024, Saturday

08:00 AM onwards	Exploring the ancient Marvels of Bihar: A Tour of UNESCO World Heritage Site Nalanda and Rajgir
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Day 4: 21st July 2024, Sunday

Hands-on Training and Lab Visit

	HVOF and HVOF (Block 2)	Plasma Spary (Block 6)
9:00 - 11:00	Group 1	Group 2
11:00 - 13:00	Group 2	Group 1
13:30 - 14:30	Valedictory session (CLH 003)	
14:30 - 15:30	Lunch (CLH 1st floor)	

*CLH: Central Lecture Hall, PL: Plenary Lecture, KL: Keynote Lecture, IL: Invited Lecture,
CT: Contributory Talks