

4th Global Ceramic Leadership Roundtable
Ceramics for Frontier Sectors: Emerging Advances and Prospects (CerAP2024)
March 11-12, 2024, IIT Roorkee

Minute to Minute Programme of the Inaugural Session

Room No: 104, APJAK Block

09:00	Welcoming guests by presenting Bouquets	
09:03	Lightening of the lamp	
09:07	Kulgeet (Institute song)	
09:11	Welcome address	Prof. Sanjay H Upadhyay <i>Head, Centre for Space Science and Technology, IIT Roorkee</i> <i>Organizing Chair, CerAP2024</i>
09:15	About ACerS Northeast India Chapter	Dr L K Sharma <i>Mahamana Ceramic Development Organization, New Delhi</i> <i>Chair, ACerS Northeast India Chapter</i> <i>Organizing Co-Chair, CerAP2024</i>
09:19	About CerAP2024	Prof. B Venkata Manoj Kumar <i>Centre for Space Science and Technology, IIT Roorkee</i> <i>Vice-Chair, ACerS Northeast India Chapter</i> <i>Organizing Secretary, CerAP2024</i>
09:23	About i-HUB DivyaSampark	Mr. Manish Anand <i>CEO, i-HUB DivyaSampark, IIT Roorkee</i> <i>Co-organizer, CerAP2024</i>
09:27	Address by Distinguished Guest	Shri Sudipta Saha <i>H&R Johnson (India)</i> <i>President, Indian Ceramic Society</i>
09:33	Address by Guest of Honour	Prof. Sanjay Mathur <i>University of Cologne, Germany</i> <i>Former president, ACerS International</i>
09:43	Address by Chief Guest	Shri S Somanath <i>Chairman ISRO</i> <i>Secretary DOS</i> <i>Patron, CerAP2024</i>
10:03	Director Address	Prof. K K Pant <i>Director, IIT Roorkee</i> <i>Patron, CerAP2024</i>
10:08	Souvenir release and mementos presentation	
10:11	Vote of thanks	Prof. Bhanu Pant <i>Centre for Space Science and Technology, IIT Roorkee</i> <i>Organizing Co-Secretary, CerAP2024</i>
10:15	National Anthem	

4th Global Ceramic Leadership Roundtable
Ceramics for Frontier Sectors: Emerging Advances and Prospects (CerAP2024)
March 11-12, 2024, IIT Roorkee

Day 1: March 11, 2024 (Monday)

07:30 - 9:00	Registration and Breakfast (Venue: Ground floor, APJAK Block, IIT Roorkee)		
9:00 - 10:15	<u>Inaugural Session</u> Room No: 104, APJAK Block		
10:15-10:45	Group Photo & Coffee Break Lawn Area, APJAK Block		
10:45 - 11:15	Plenary lecture-1: Directions for High and Ultra-High Temperature Ceramic Matrix Composites Jon Binner, University of Birmingham, UK Session Chair: Bhanu Pant Room No: 104, APJAK Block		
11:15 - 11:40	Keynote lecture-1: Expanding Role of Materials in Modern Days Raghvendra Tewari, BARC, Mumbai Session Chair: Bhanu Pant Room No: 104, APJAK Block		
11:40 -12:05	Keynote lecture-2: Innovative Functional Tiles & Raw Materials Sudipta Saha, H&R Johnson (India) Session Chair: Bhanu Pant Room No: 104, APJAK Block		
12:15 - 12:30	Technical Session-1: Toshniwal Brothers Session on Structural Ceramics Room No: 001, APJAK Block Chair: Madhusoodana CD Co-Chair: Debasish Sarkar	Technical Session-2: J K Machines Session on Ceramics for Tribology Room No: 002, APJAK Block Chair: P Ramkumar Co-Chair: G B Raju	Technical Session- 3: Ceramics for Coatings Room No: 003, APJAK Block Chair: Abhendra K. Singh Co-Chair: S R Meka
12:30 - 12:45	C24145: Densification of Zr- and Ti-based ceramics at moderate pressures and temperatures L. Rangaraj, CSIR-NAL, Bangalore	C24117: Tribological properties of double-matrix-composite (SiC-C) brake disc and functionally graded ductile iron brake pads: Cross-section analysis Marko Polajnar, University of Ljubljana, Ljubljana	C24102: Wear resistant ceramic composite coatings through HVAf spraying for industrial applications: new directions G Sivakumar, ARCI Hyderabad
12:45 -13:00	C24139: TiB ₂ based ceramics and ceramic composites for armor applications Manish Patel, DMRL Hyderabad	C24109: Dry sliding behaviour of transparent yttrium aluminium garnet against 100Cr6 steel balls Sandan Kumar Sharma, IIT Patna	C24168: Fracture toughness of (Hf-Nb-Ta-Zr)C multi-element carbide coatings through microcantilever and nanoindentation testing: Decoupling the role of residual stresses Hariprasad Gopalan, IIT Ropar
13:00 - 13:15	C24129: Perspective of wear and oxidation resistant nanostructured ceramic oxides for structural applications Anshuman Patra, NIT Rourkela	C24119: Tribological properties of WC-Co tool and coated steel sheets under dry and lubricated conditions for stamping application Lucija Čoga, University of Ljubljana, Ljubljana	C24170: Surface engineering and DLC coating of Ti6Al4V for improved tribological performance and longevity of hip implant P. Ramkumar, IIT Madras

13:15 - 13:30	C24208: Effect of TiC addition on mechanical characteristics and ablation resistance of spark plasma sintered ZrB ₂ -SiC composites D. Benny Karunakar, IIT Roorkee	J K Machines (Sponsor's talk)	C24169: Ceramic coating for surface protection of welding torches and iron fixtures by powdered slag compounds K Chandra Sekhar, NIAMT Ranchi
13:30 - 14:15	Lunch Break Lawn Area, APJAK Block		
14:15 - 14:45	Plenary lecture-2: Chemically Processed Functional Ceramics for Energy and Health Applications Sanjay Mathur, University of Cologne, Germany Session Chair: L K Sharma Room No: 104, APJAK Block		
14:45 - 15:10	Keynote lecture-3: Crystal Chemistry and Thermoelectric Properties of Ternary and Quaternary Bulk Sulfides Emmanuel Guilmeau, CRISMAT, CNRS, France Session Chair: L K Sharma Room No: 104, APJAK Block		
	Technical Session-4: Functional Ceramics-I Room No: 001, APJAK Block Chair: Bharat Bhushan Jha Co-Chair: Marko Polajnar	Technical Session-5: Polymer Derived Ceramics Room No: 001, APJAK Block Chair: M R Ajith Co-Chair: G Sivakumar	Technical Session-6: Ceramics Processing and Simulation Room No: 003, APJAK Block Chair: K L Yadav Co-Chair: Sandan Kumar Sharma
15:20 - 15:35	C24177: Effect of talc on vitrification behaviour and thermo-mechanical properties of red porcelain bodies Asha Anil, CSIR-CGCRI, Naroda	Architecturally design of high temperature ceramics through molecular precursor route N Ravi Kumar, IIT Madras	C24163: Influence of processing conditions on the metal Ti-Al contact metallization on a silicon wafer for thermal management Manish Singh, IIT Patna
15:35 - 15:50	C24190: Development of ceramic microsphere using lower grade Indian bauxite for functional filler material applications Sushil Kumar, Ashapura Minechem Ltd., Gujarat	C24172: Polymer-derived microporous ceramics for hydrogen purification and selective hydrogen detection Ravi Mohan Prasad, IIT Ropar	C24215: Correlating interfacial segregation of dopants in ZnO with structure and properties through multiscale materials modelling Abhishek Tewari, IIT Roorkee
15:50 - 16:05	C24213: Urine and Feces Repellent Nano Cement Surfaces Sriharitha Rowthu, IIT Gandhinagar	C24188: The effect of TiB ₂ nano particles in carbon reinforced PEEK material for the high temperature applications P Sammaiah, SR University, Hanumakonda	C24171: Nanostructured ceramic coatings for aerospace applications Harish C. Barshilia, CSIR-NAL, Bangalore
16:05 - 16:20	C24118: Exfoliation of graphite for defect free high quality graphene Anup Keshri, IIT Patna	C24126: Role of ceramics in machining of composite materials Inderdeep Singh, IIT Roorkee	C24210: Effect of multi-directional C _r -SiC _m composite by LSI and characterization of mechanical properties and microstructure analysis Shibayan Roy, IIT Kharagpur
16:20 - 16:35	C24127: Steady-state contact temperature of finite, low conductivity bodies during dry sliding Tomaž Požar, University of Ljubljana, Ljubljana	Anton-Paar (Sponsor's talk)	C24217: Exploring Contrasting Roles: A Case Study of Oxide-Driven Influences on Densification and Microstructure in B ₄ C Ceramics K. Sairam, BARC Mumbai
	Coffee Break 1 st Floor Terrace, APJAK Block		
16:35 - 17:15	Poster Session 1 st Floor Terrace, APJAK Block		
17:15 - 18:30	Roundtable Discussion Ceramics for Sustainable Society: Challenges & Path Forward Panellists: Jon Binner, M. R Ajith, Valerie Pralong, S. Packirisamy, Emmanuel Guilmeau, Shyam S Rao, Sitendu Mandal, Madhusoodana CD, Bikramjit Basu (Moderator), Sanjay Mathur (Chair) Room No: 004, APJAK Block		
19:00 - 22:30			

	<u>Gala Dinner</u> Venue: Ambrosia Sarovar Portico, Haridwar		
Day 2: March 12, 2024 (Tuesday)			
07:45 - 9:00	<u>Breakfast</u> Lawn Area, APJAK Block		
09:00 - 9:30	Plenary lecture-3: Bioceramics for healthcare: Where the future lies? Bikramjit Basu, IISc Bangalore Session Chair: Parag Bhargava Room No: 104, APJAK Block		
09:30 - 09:55	Keynote lecture-4: Design of New Electrode Materials for Energy Storage Valerie Pralong, CRISMAT, CNRS, France Session Chair: Parag Bhargava Room No: 104, APJAK Block		
09:55 - 10:20	Keynote lecture-5: Ceramic Matrix Composites for Harsh Thermal Environment Applications Abhendra K. Singh, Baylor University USA Session Chair: S C Sharma Room No: 104, APJAK Block		
10:20 - 10:45	Keynote lecture-6: Alchemy of Advanced Ceramics - Products and Applications Shyam S Rao, CUMI, Bangalore Session Chair: S C Sharma Room No: 104, APJAK Block		
10:45 - 11:00	<u>Coffee Break</u> Lawn Area, APJAK Block		
	Technical Session-7: i-HUB DivyaSampark Session on Ultra High Temperature Ceramics Room No: 001, APJAK Block Chair: Amrit Prakash Co-Chair: L Rangaraj	Technical Session-8: Glass & Glass Ceramics Room No: 002, APJAK Block Chair: Emmanuel Guilmeau Co-Chair: Manish Patel	Technical Session-9: HINDALCO Session on Ceramics for Energy Storage Room No: 003, APJAK Block Chair: Valerie Pralong Co-Chair: S K Pandey
11:00 - 11:15	i-HUB (Sponsor's talk)	C24202: A Roadmap towards Research and Development on Specialty Glasses for Strategic and Societal Applications Sitendu Mandal, CSIR-CGCRI, Kolkata	C24160: Effect of Microstructural Differences in Alumina and Boehmite on the Thermoelectric Properties of Polymer Composites Shekhar Nath, HINDALCO Industries Ltd., Mumbai (Sponsor's talk)
11:15 - 11:30	C24111: Silica tiles as a Thermal Protection System for Re-entry Vehicles M. R Ajith, VSSC, Thiruvananthapuram	C24187: Advanced Ceramics for Aerospace Applications Bhaskar Prasad Saha, ARCI, Hyderabad	C24148: 'Layered' transition metal oxides as cathode materials for Na-ion batteries: Composition - Structure - Environmental stability-Electrochemical behaviour/performance Amartya Mukhopadhyay, IIT Bombay
11:30 - 11:45	C24179: Challenges for Ultra High Temperature Sintering: Case Studies from CSIR-CGCRI Research Shirshendu Chakraborty, CSIR-CGCRI	C24164: Advanced Ceramics for Strategic Applications Bharat Bhushan Jha, RIT Bangalore	C24204: Solid state electrolytes for lithium ion and sodium ion batteries: some highlights on experimental findings Anjan Sil, IIT Roorkee
11:45 - 12:00	C24162: Advances in Materials for Missile Propulsion and Thermal Protection Systems Alex Daniel, ASL, DRDO, Hyderabad	C24207: Functional Properties of Conventionally Sintered Al₂O₃-CaTiO₃ Composite Prafulla. K. Mallik, IGIT Sarang, Odisha	C24110: The complexity of interfacial reactions of solid electrolyte and electrode ceramic materials during solid-state battery fabrication

			Hari Raj, CRISMAT, CNRS, France
12:00 - 12:15	C24206: High Temperature Materials - Carbon to Ceramic Composites Lalit Mohan Manocha, (Retd.) Sardar Patel University, Gujarat	C24150: Invisible Powerhouses: Ultra High-Strength Transparent Glass-ceramics for Cutting-Edge Displays and Armor Atiar Rahaman Molla, CSIR-CGCRI, Kolkata	C24130: Fundamental and technological aspects of transition element doped lead free Ferroelectrics for Novel Photo-Ferro/Piezocatalytic Application Ranabrata Mazumdar, NIT Rourkela
12:15 - 12:30	C24106: Basic Strategies to Design and Performance Analysis of Refractories Debasish Sarkar, NIT Rourkela	C24214: Glass manufacturing & sustainability T K Chakraborty, Saint-Gobain India Pvt. Ltd., Bhiwadi	C24137: Perovskite Materials for high energy-storage applications K L Yadav, IIT Roorkee
12:30 - 12:45	C24114: Oxide scale evolution in Ultra-High Temperature Ceramics Pratik K Ray, IIT Ropar	C24186: Impact of sintering additives (ZrO ₂ /La ₂ O ₃) on the structural, thermal, morphological, and opto-electrical properties of yttria Jagmohan Datta Sharma, PEC Chandigarh	C24175: Effect of Si ₃ N ₄ and Ta on the microstructure and oxidation of ZrB ₂ G B Raju, NIT Warangal
12:45 - 13:45	<u>Lunch Break</u> Lawn Area, APJAK Block		
	Technical Session-10: Next Generation Bioceramics Room No: 002, APJAK Block Chair: Sitendu Mandal Co-Chair: Abhishek Tewari	Technical Session-11: Functional Ceramics-II Room No: 002, APJAK Block Chair: Anjan Sil Co-Chair: Shirshendu Chakraborty	
13:45 - 14:00	C24165: Synergistic influence of electrostatic and dynamic electrical stimulation towards improving osteogenic and antibacterial response Ashutosh Kumar Dubey, IIT BHU	C24166: 3D printing of ceramics through Stereolithography and lithographic ceramic manufacturing (LCM) Parag Bhargava, IIT Bombay	
14:00 - 14:15	C24199: Fluorcanasite glass-ceramic, UV-curable resin and DLP-3D printing: A scaffold's journey on the road to rehabilitation of critical sized bone defects Subrata Bandhu Ghosh, Manipal University Jaipur	C24216: Characterisation of Thermal and Fast Reactor Fuels Amrit Prakash, BARC, Mumbai	
14:15 - 14:30	C24101: Engineered porosity bioceramics for bone tissue regeneration Komalakrushna Hadagalli, Clemson University, USA	C24136: Solution combustion-processed semiconducting metal oxide-based gas sensors for the detection of toxic gases at room temperature Saumen Mandal, NIT Surathkal	
14:30 - 14:45	C24197: Biofabrication of rationally mimicked hierarchical bone scaffolds with superior mechano-biological properties Vijay Shankar Kumawat, Manipal University Jaipur	C24201: Electrocatalytic synthesis of green ammonia and green urea using metal phthalocyanine nanotubes: A Lab-to-Land initiative Uttam Kumar Ghorai, Ramkrishna Math, Belur	
14:45 - 15:00		C24189: Transition Metal Incorporation in Double-Layer Aurivillius Niobates: Magnetic and Solar Photocatalysis Sonia Rani, Dayanand Girls P. G. College, Kanpur	
	<u>Coffee Break</u> 1 st Floor Terrace, APJAK Block		
15:00 - 16:30	<u>Poster Session</u> 1 st Floor Terrace, APJAK Block		
16:30 - 17:30	<u>Valedictory Ceremony</u> Room No: 104, APJAK Block		
