

Cera4S 2024 - Technical Schedule		
TIME	DAY-2 (November 29, 2024)	VENUE
09:00-09:30	Plenary Lecture - Mr. Venkatamurugan N.S Operations & Head - DTI (India), Saint Gobain Private Limited-Glass Business	TTJ Auditorium, IC&SR
09:30-10:00	Plenary Lecture - Mr. Arghya Mukherjee Vice President - Operations, Prism Johnson Limited	
10:00-10:30	Tea Break	Annexe & Dining Halls, IC&SR
	Technical Session 6 : MATERIALS UNDER EXTREME CONDITIONS (MEC-1) Ultra-High Temperature Ceramics (UHTC), Ceramic Matrix Composites (CMCs), Ceramics Under High Pressure, Extreme Testing Techniques Session Chair: Mrityunjay Singh	TTJ Auditorium, IC&SR
	Felicitation of Mrityunjay Singh for his contributions to the field of High Temperature Ceramics	
10:30-11:00	Ajith MR , Vikram Sarabhai Space Center (VSSC), Indian Space Research Organisation (ISRO), India KL - Ceramics for space	
11:00-11:30	Stefan Schafföner , University of Bayreuth, Germany KL - Microstructural implications on the properties of all-oxide ceramic matrix composites	
11:30-11:50	Peter Tatarko , Slovak Academy of Sciences, Slovakia IL - Sustainable ceramics for high temperature applications	
11:50-12:10	Doni Daniel , Kingston University, UK IL - Materials Design for Hypersonic Applications	
12:10-12:20	Probing the crystal structure of transition metal (Zr, Hf) – rare earth (Ce, Gd, Yb, Pr, Nd) based compositionally complex oxides by Muthukumar Abishek , IIT-Madras, Chennai & Univ. of Belgrade, Serbia - OP	
12:20-12:30	Dual ion He-Fe irradiation on Reactive Sintered Borides under reactor conditions by J. Gillham , University of Warwick, UK - OP	
	Technical Session 7: CERAMICS FOR ENERGY & ENVIRONMENT (CEE-2) Photocatalysis, Electrocatalysis, Sensors and Actuators, Devices and Components Session Chair: Ashutosh S. Gandhi	Hall-1, IC&SR
10:30-11:00	Santi Maensiri , Suranaree University of Technology, Thailand KL - Oxide nanomaterials for energy storage applications	
11:00-11:20	Surendra B. Anantharaman , Indian Institute of Technology Madras (IIT Madras), India IL - Two-dimensional Materials for Harvesting Solar Energy	
11:20-11:40	Charlie O'Mahony , University of Limerick, Ireland IL - Multimodal Analysis of Transparent Hydroxyapatite Films with PFM and CARS Microscopy	
11:40-12:00	Dillip Satapathy , Indian Institute of Technology Madras (IIT Madras), India IL - Silver Selenide Based Flexible Thermoelectrics for Wearable Devices	
12:00-12:20	Manjusha Battabyal , Indian Institute of Information Technology, Design and Manufacturing (IIITDM) Kancheepuram, India IL - Smart Thermoelectrics through Carrier Filtering and Quantum Confinement for Waste Heat Harvesting	
12:20-12:30	Molecular Strategies for Binary MO ₂ (M = V, Sn, Ti, Zr, Hf) High-Entropy Oxides: Superior Catalysts for Enhanced Oxygen Evolution by Ziyaad Aytuna , A. Bhardwaj, M. Wilhelm, D. Patrun, T. Fischer, R. Sharma, K. Papakollu, R. Kumar, S. Mathur, Univ. of Cologne, Germany & IIT-Madras - OP	
	Technical Session 8: CERAMICS FOR ENERGY & ENVIRONMENT (CEE-3) Photocatalysis, Electrocatalysis, Sensors and Actuators, Devices and Components Session Chair: Rajeesh Ranjan	HALL-2, IC&SR
10:30-11:00	Sammy Lap-IP Chan , University of New South Wales, Sydney, Australia KL - High-Performance Hydrogen Storage Materials for Microgrids and Remote Area Power Supply Systems	
11:00-11:20	Pradip Kumar Roy , Indian Institute of Technology, Banaras Hindu University (IIT BHU), India IL - High-performance rare-earth-free hexaferrite materials for rotating machinery applications	
11:20-11:40	Sujith Ravindran , BITS Pilani, Hyderabad, India IL - Sodium-ion diffusion coefficients in tin-containing silicon oxycarbide nanobeads with electrochemical techniques	
11:40-12:00	Susmita Kundu , Central Glass and Ceramic Research Institute (CGCRI), Kolkata, India IL - Electrochromic Coating: A Trendsetter for Smart Devices	
12:00-12:20	Prashant Kumar , Nanyang Technological University, Singapore IL - Electron Microscopy's 'Pretty Pictures' Lead to Energy-Efficient Separation Membranes	
12:20-12:30	Cobalt-free layered oxide cathode: an attempt to counter the perennial problems of cobalt in lithium-ion batteries by Partha Saha and Abhishek Kumar, NIT-Rourkela, India - OP	
	Technical Session 9 : ADVANCED CERAMICS FROM MOLECULAR PRECURSORS (CMP-2) Synthesis, Characterization and Properties of Precursor Derived Ceramics Session Chair: Günter Motz	HALL-3 (AMM), IC&SR
10:30-11:00	Yuji Iwamoto , Nagoya Institute of Technology, Japan KL - Polymer-Derived Transition Metal-Based Nanoparticle-Dispersed Amorphous Silicon Nitrides for Catalytic Applications	
11:00-11:20	Shantanu K. Behera , National Institute of Technology Rourkela (NIT Rourkela), India IL - Functional ceramic nanostructures and hybrids from preceramic polymer route for energy applications	
11:20-11:40	BV Raja Sekhar , Vikram Sarabhai Space Centre (VSSC), Indian Space Research Organisation (ISRO), India IL - Development of C/SiC based composites for Re-usable Launch Vehicles	
11:40-12:00	Ravi Mohan Prasad , Indian Institute of Technology Ropar (IIT Ropar), India IL - Polymer-Derived SiOC Ceramics with Tunable Properties for Energy and Environmental Applications	
	Technical Session 10: MATERIALS FOR HEALTHCARE (MHC-2) Session Chair: Vladimir Srdić	Annexe Conference Hall (First Floor), IC&SR
10:30-11:00	Syed Ansar M Tofail , University of Limerick, Ireland KL - Hydroxyapatite: An Electrifying Story of the Deception, Intrigue, and Wonders of Hydroxylated Apatites	
11:00-11:20	Ashutosh Kumar Dubey , Indian Institute of Technology, Banaras Hindu University (IIT BHU), India IL - Electro-static/dynamic field stimulated osteogenic and antibacterial response	
11:20-11:40	Nanasaheb Thorat , University of Limerick, Ireland IL - Treating Cancer with Next generation hybrid magnetic nanocarriers and 3D tumor models	
11:40-12:00	Svetlana Butulija , University of Belgrade, Serbia IL - CeO ₂ Nanoparticle-Enhanced Bacterial Cellulose Composites: From Material Optimization to Enhanced Diabetic Wound Healing Applications	
12:00-12:20	Sabyasachi Roy , Ceramat Private Limited, India IL - Scaling Up Calcium Phosphate Bioceramics: From Lab to Market	
12:20-12:30	Lanthanum doped barium titanate dielectric resonator at microwave frequencies for biomedical applications by Kuppili Reshma , Mohan Ramasamy, Ravi Kumar, Kavitha Arunachalam, IIT Madras, India - OP	

Technical Session 11 : SESSION: SUSTAINABILITY, RECYCLING AND URBAN MINING (SRM) Session Chair: Subhasish Mukherjee		
10:30-11:00	Ratheesh R , Centre for Materials for Electronics Technology (C-MET), Hyderabad, India KL - Environmentally Benign and Sustainable Recycling Technologies for E-waste Management: Challenges & Opportunities	Central Lecture Theatre (CLT)
11:00-11:30	Emanuel Ionescu , Fraunhofer Research Institution for Materials Recycling and Resource Strategies IWKS, Germany KL - Compositional Complexity as Enabler for the Circular Economy	
11:30-11:50	Charuta Kulkarni , Indian Institute of Technology Madras (IIT Madras), India IL - Interdisciplinarity is a requisite for addressing India's Sustainability challenges	
11:50-12:10	Ajay Kaushal , Center for Materials for Electronic Technology (C-MET), Hyderabad, India IL - Solid state synthesis of active cathode material for Li-ion batteries using secondary raw materials	
12:10-12:20	Recycling of Solid Wastes into Value-added Engineering Products for a Circular and Sustainable Economy by Shubhendra Kumar Ahirwar , Vivek Kumar Saroj and Subrata Panda, IIT BHU, Varanasi, India - OP	
12:30-14:00	Lunch	Annexe & Dining Halls, IC&SR

Technical Session 12 : MATERIALS UNDER EXTREME CONDITIONS (MEC-2) Ultra-High Temperature Ceramics (UHTC), Ceramic Matrix Composites (CMCs), Ceramics Under High Pressure, Extreme Testing Techniques Session Chair: Stefan Schafföner		
14:00- 14:30	Rahul Mitra , Indian Institute of Technology Kharagpur India (IIT Kharagpur) KL - Effect of fibre architecture and temperature on resistance to cyclic oxidation damage in Cf/SiC composites	TTJ Auditorium, IC&SR
14:30-14:50	Apurv Dash , Denmark Technical University, Denmark IL -Synthesis of non-oxide ceramic in air	
14:50-15:10	Saikat Deb Acharya , CSIR- Central Glass & Ceramic Research Institute (CGCRI), Kolkata, India IL - Electron Microscopy of High Strain Rate Induced Damage Evolution in Selected Solids	
15:10-15:30	Shrikant Bhat , Deutsches Elektronen-Synchrotron DESY Photon Science, Germany IL - In-situ Exploration of New Materials at Extreme Conditions and India @ DESY: State of the art Synchrotron Facility Access for Indian Scientists	
15:30-15:50	Hari Prasad Gopalan , Indian Institute of Technology Ropar (IIT Ropar), India IL - Hydrogen Diffusion in Amorphous Alumina Coatings and Evaluation of their Mechanical Performance using in situ Nanoindentation During Back-side Hydrogen Charging	
15:50-16:00	Novel slurry spraying-reactive sintering method for fabrication of functionally multilayered Yb-silicate environmental barrier coatings by Gauri Waghmare , Ashutosh S. Gandhi, IIT Bombay - OP	

Technical Session 13: CERAMICS FOR ENERGY & ENVIRONMENT (CEE-4) Photocatalysis, Electrocatalysis, Sensors and Actuators, Devices and Components Session Chair: Sammy Lap-IP Chan		
14:00-14:30	R Gopi Chandran , Applied Materials, India KL - Sustainable Protective Differentiated (SUPER) Ceramic Coatings for Semiconductor Machine Components	HALL-1, IC&SR
14:30-14:50	Lakshman Neelakantan , Indian Institute of Technology Madras India (IIT Madras) IL - Mesoporous silica for smart composite coatings: A strategy for corrosion protection	
14:50-15:00	Almatis Alumina Solutions for High Performance Advanced Ceramic Applications by Shankha Chatterjee , Nils Rosenberger, ALMATIS, India - OP	
15:10-15:20	Synthesis & development of sustainable Pb free ferroelectric ceramics (Sr3Sn2O7) for Piezoelectric Applications by Dinesh Barnana , Univ. of Limerick, Ireland - OP	
15:20-15:30	Non noble transition metal based high entropy oxide for seawater electrolysis by Y. S. Swaroop Sarma , A. Ghosh, M. Jaiswal, S.S. Bhattacharya, S. Ramaprabhu, IIT-Madras, Chennai, India - OP	
15:30-15:40	Influence of Processing Parameter for the Synthesis of MAX and MXenePhases and Their Properties by O. P. Pandey , Thapar Instt of Engg& Tech, Patiala, India- OP	
15:40-15:50	Ti3C2MXene-Based Electro catalysts for Sustainable Water Splitting Technologies by Vinita and O.P.Pandey, Thapar Instt of Engg& Tech, Patiala, India - OP	
15:50-16:00	Synthesis of high entropy based perovskite oxide for Solid Oxide Fuel Cell applications by solution combustion method by Barnasree Chanda , K. Chakraborty, Srijit Banerjee, Manju Priya, J. Mukhopadhyay, CSIR-CGCRI, Kolkata, India - OP	

Technical Session 14: CERAMICS FOR ENERGY & ENVIRONMENT (CEE-5) Photocatalysis, Electrocatalysis, Sensors and Actuators, Devices and Components Session Chair: Ajit R Kulkarni		
14:00-14:30	Silke Christiansen , Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany KL - Scale-Bridging Multi-Modal Analytics in Battery Research: Harnessing Data Correlation and Machine Learning for Enhanced Device Optimization	HALL-2, IC&SR
14:30-14:50	Rajeev Ranjan , Indian Institute of Science (IISc), Bangalore, India IL - A critical analysis of ultrahigh electrostrain in lead-free piezoceramics	
14:50-15:10	Ajay Kumar Kalyani , Indian Institute of Technology Patna (IIT Patna), India IL - Enhanced piezoelectric, ferroelectric and dielectric response in (Na0.5Bi0.5)TiO3-based piezoceramics	
15:10-15:30	Abhishek Sarkar , Indian Institute of Technology Delhi (IIT Delhi), India IL - Magneto-electronic phase separation driven functionalities in high entropy oxides	
15:30-15:50	Anil Gopala , Lab India IL - Equipments required for Ceramic , Sintering and Battery Materials Development	
15:50-16:00	Structure and electrocatalytic response of Na/Li added (Co, Ni, Cu, Zn, Fe)O high entropy oxide by Ashwani Gautamand , Md. Imteyaz Ahmad, IIT-BHU, Varanasi, India - OP	
15:50-16:00	Structure and electrocatalytic response of Na/Li added (Co, Ni, Cu, Zn, Fe)O high entropy oxide by Ashwani Gautamand , Md. Imteyaz Ahmad, IIT-BHU, Varanasi, India - OP	

Technical Session 15: ENERGY EFFICIENT PROCESSING TECHNIQUES (EPT-2) Materials, Defect Engineering & Science Session Chair: Dietrich E. Wolf		
14:00-14:30	Uthamalingam Balachandran , University of Colorado, USA KL - Nanocarbon-Infused Copper Conductors by Electric Field Assisted Processing	Annexe Conference Hall (First Floor), IC&SR
14:30-14:50	Tamoghna Chakrabarti , Indian Institute of Technology Patna (IIT Patna), India IL - Effect of Band Gap and Electrode Potential on the Onset Temperature and Electric Field of Flash Sintering	
14:50-15:10	Paula Vilarinho , University of Aveiro, Portugal IL - Alternative Sintering of Ceramics for a Sustainable Growth	
15:10-15:20	Flash assisted roasting and densification (FARD): One step synthesis technique to obtain dense ZnOpellets from ZnS powder by Pranav Rai , Devinder Yadav, IIT Patna, IIT Madras -OP	
15:20-15:30	Reactive flash sintering Advancements in Ceramic Densification for Efficient BaZrO3 and 8YSZ Composite Production in SOFC Applications by Vikaskumar Mishra , Chandan Singh, Devinder Yadav, IIT Patna, India - OP	
15:30-15:40	Flash Sintering of hydrothermally synthesized nano-sized nuclei of CuCrO2 by Anand Mohan P , Akshai Shyam, Ramasubramanian Swaminathan, Nanda Kumar A K, Amrita Vishwa Vidyapeetham, Coimbatore, India -OP	
15:40-15:50	Influence of sintering on mechanical and thermal properties of entropy stabilized oxide by Sabyasachi Panda , G Yaswanth Kumar, Emanuel Ionescu, Ravi Kumar, IIT Madras, India - OP	
15:50-16:00	Enhance kinetics during flash joining of TiO2 and ZnO by Raghav Mundra , Anupam Halder, Shikahr Krishn Jha, IIT, Kanpur - OP	
16:00-16:10	Analysis of the synthesis and high temperature electrical properties of single phase layered LiCrO2 produced by the reactive flash method by Sreelakshmi Jayaprakash , Anand Mohan P, Mariya George, Nanda Kumar A K, Amrita Vishwa Vidyapeetham, Coimbatore - OP	
16:00-16:30	Tea Break & POSTER SESSION (Poster Session till 17.30 hours - Hall-4)	

16:30-17:30	Special Session on Publishing Papers in the Transactions of the Indian Ceramic Society Organised for Young Researchers By the Editorial Team Co-ordinated by C.D. Madhusoodana	TTJ Auditorium, IC&SR
18:30-19:30	CULTURAL PROGRAM- CLASSICAL AND FOLK DANCES by KALAKSHETRA FOUNDATION	Student Activity Centre (SAC)
19:30-21:30	DINNER	Terrace & Dining Halls, IC&SR