



9th International Conference on Materials Science & Smart Materials

MSSM2023

Hybrid Venue: University of Modena and Reggio Emilia, Italy
19th – 21st of June 2023

Day-1 19th of June 2023

Opening Session

09:00 9:10	Welcome Talk by: Prof. Giovanni Verzellesi Vice-Rector of the University of Modena and Reggio Emilia	
09:10 9:20	Welcome Talk by: Prof. Massimo Milani Head of the Department of Sciences and Methods for Engineering	
09:20 9:30	Welcome Talk by: Prof. Luca Montorsi Conference Chair	
9:30 -10:15	Keynote by Prof. John Dear Imperial College London UK	Experimental and Numerical Studies on the Impact Performance of Composite Materials
10:15 – 10:30	Break	

SUSTAINABLE MANUFACTURING OF CERAMICS

Session A

Chairman: Prof. Ian Reaney

10:30 – 11:00	Invited Talk by Prof. Ian M. Reaney University of Sheffield	Cold Sintering of Advanced Ceramics and Glass
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11:00 – 11:30	Keynote by Marco Manfredini Atlas Concorde SpA	Atlas Concorde: a pathway to a sustainable ceramic process
11:30 -12:00	Keynote by Prof. Monia Montorsi University of Modena and Reggio Emilia	Ceramics and Glasses: from computational modeling to industrial applications
12:00 – 12:20	Giorgia Franchin	Additive manufacturing of ceramics from liquid feedstock
12:20 – 12:40	D.J.Button	The Cold Sintering of Zinc Oxide
12:40 – 13:00	Yongbo Fan	Sodium niobate – barium titanate based electroceramics for electrical energy storage application
13:00-14:00	Lunch Break	
Session B Chairman: Prof: Ian M. Reaney		
14:00 – 14: 30	Invited Talk by Paula Vilarinho Centre for Research in Ceramics and Composites	TBC
14:30 – 15:00	Keynote by Roberto Saponelli SACMI SC	Applications of CAE technologies supporting the development of products and machines for the ceramic industry
15:00 – 15:20	Itani Given Madiba	Nano-structured VO ₂ based smart materials for optoelectronic applications
15:20 – 15:40	Yubo (Martin) Zhu	Bismuth potassium titanate - bismuth ferrite based high energy density ceramic capacitors
15:40-16:00	Break	



Session C Chairman: Prof: Ian M. Reaney		
16:00-16:30	Invited Talk by Prof. Hussam Jouhara Brunel University London	Waste heat recovery in the ceramics industry
16:30 – 17:00	Keynote By Jason Bridges/Amir Khesro Johnson Tiles	TBC
17:00 – 17:30	Keynote by Luis Guaita Keraben Grupo S.A.	ICEBERG Project: Circular Ceramic Tiles for transforming Construction and Demolition Waste into Sustainable Resources
17:30 -18:00	Keynote by Irina Celades Instituto de Tecnología Cerámica (ITC-AICE)	Overview of decarbonisation technologies in the Ceramic tile industry



Day-2 20 th June 2023		
Workshop on: Sustainable Recovery for Circular Economy Chairman Prof. Lorna Anguilano		
09:00 - 09:30	Keynote By: Prof. Lorna Anguilano Brunel University London	Sustainable Recovery for Circular Economy
9:30 – 9:50	Uche Onwukwe	Natural mining of Lithium from low grade deposits
9:50 – 10:10	Concetta Semeraro	Digital Twin Applications in Additive Manufacturing
10:10 – 10:30	Angeli Todd	Photocatalytic Degradation of Ethinyl Estradiol (EE2) Using a Novel Composite of Titanium Dioxide and Hydroxyapatite Grown on Hollow Glass Microspheres
10:30 – 11:00	Break	
Session on Materials Science Chairman: Chairman Prof. Lorna Anguilano		
11:00 – 11:15	Mohammad Al-Sayah	Carbon-Dots-Functionalized Polymer Composites for Biomedical Applications: Preparation, Antimicrobial Activity, and Impedance Studies
11:15 – 11:30	Ioannis Karapanagiotis	Superhydrophobic composites of a TEOS-based material blended with functionalised hydrophobic calcium carbonate particles for stone conservation
11:30 – 11:45	Matteo Venturelli	Experimental campaign on the chemical composition of aluminium powders for hydrogen production



11:45 – 12:00	Abdulrahman Alhajeri	Power Generation from Green Hydrogen obtained from Oil Wells Produced Water Desalinated using Solar energy
12:00 – 12:15	Sarawut Rimdusit	NIR light-Induced Shape Memory Composite based on GNPs filled Bio-Based Benzoxazine/Urethane Copolymers
12:15 – 12:30	Sarawut Rimdusit	Multi-Stimuli Shape Memory Polymers from Magnetic Nanoparticle-filled Biobased Benzoxazine/Epoxy Copolymers
12:30 -12:45	Muhammad Haris	Protective coating for heat transfer surfaces: A review
13:00 – 14:00	Lunch Break	
Visit to Ferrari Factory – Track – Museum		
15.00	Bus leaves from Conference Venue to Maranello	
16.30	Dedicated Bus for the visit to Ferrari Factory and Test Track	
17.15	Visit to the Ferrari Museum in Maranello	
Conference Dinner		
19.00	Bus leaves from Maranello to the Restaurant	
19.30	Conference Dinner at the Restaurant “La Trattoria” in Casalgrande (RE)	
22.30	Bus leaves from the Restaurant to the Conference Venue	



Day-3 21st June 2023



Chairman Prof. Vassilis N. Stathopoulos

09:00 - 09:30	Invited Talk <i>by</i> Prof. Luca Montorsi Prof. Hussam Jouhara	Overview of iWays project - Innovative WATER recovery Solutions through recycling of heat, materials and water across multiple sectors
9:30 – 9:50	Keynote <i>by</i> Maria Grazia Asci SIMAM S.p.A.	Water reuse and material recovery: global challenges for actively improving the sustainability of industrial processes – SIMAM contribution and experiences
9:50 – 10:10	Paraskevi Nanou	Micromachining process and silane coatings onto stainless steel surfaces for their use in heat exchangers
10:10– 10:30	Mohab Salem	Effect of the humidified air flow temperature on the condensation process in a serpentine tube heat exchanger
10:30 – 10:50	Vassilis Stathopoulos	Enhancing Carbon Steel's Corrosion Resistance through Thermal Sprayed Protective Coatings
10:50-11:10	Break	
11:10-11:30	Irina Celades, Salvador Gomar, Gerard Balaguer, Edgar Rubion, Robert Santfeliu	Design the monitoring and information system to monitor circular processes
11:30-11:50	Alina Żabnieńska-Góra	Experimental and numerical analysis of the influence of



		the heat exchanger shape on the performance of the TEG module
11:50 – 12:10	Daniel Dias	Water-Waste-Energy Nexus modelling to support the implementation of Circular Actions: Industrial water, energy consumption and waste emissions
12:10-12:30	Qusay Doraghi	Experimental and computational thermoelectric generator for waste heat recovery for aeronautic application
12:30 – 12:50	Wolfgang Gernjak	Marrying tailored membrane surface properties and water chemistry to avoid fouling and wetting in membrane distillation
12:50 – 13:10	Michele Dassisti	Sustainable Demanufacturing Technologies of Photovoltaic Panels: a benchmark
13:10 – 13:20	Khalid Alblalaid	Investigating of producing Quasi-Isotropic Honeycomb Sandwich Panels using an Additive Manufacturing
13:20 -13:40	Mahfuz Karim	High Pressure Die Cast nAlN reinforced AZ91 Magnesium Alloy
Closing Remarks		
13:40 – 15:00	Lunch	