



## 8<sup>th</sup> International Conference on Materials Science & Smart Materials

**MSSM2022**

**Hybrid Venue: Brunel University London**  
**11<sup>th</sup> – 13<sup>th</sup> of July 2022**

### Day-1 11<sup>th</sup> of July 2022

#### Opening Session

09:30 10:00	<p><b>Welcome Talk by:</b> Prof. Geoffrey Rodgers, Vice Provost for Research, <i>Brunel University London</i></p> <p><b>Welcome Talk by: Conference Co-Chairs:</b> Prof. Hussam Jouhara Prof Ian Reaney Prof. Abdul Ghani Olabi</p>	
10:00 -10:45	<p><b>Keynote</b> <i>by</i> Prof. John Dear <i>“Experimental and Numerical Studies on the Impact Performance of Composite Materials”</i></p>	Imperial College
10:45 – 11:00	Break	
<p><b>Session A</b> Introducer: Prof. Ian Reaney Chairman: Dr. J A Ferriz-Papi</p>		
11:00 – 11:15	J A Ferriz-Papi	New technologies benefits for new materials and products from construction and demolition waste
11:15 -11:30	Majda Belhaj	Experimental Study on the Use of Bio-Derived Rejuvenators, Crumb Rubber and Plastic Waste for Improving Performance of



		Asphalt Mixture Containing 50% Reclaimed Asphalt
11:30 – 11:45	Gasak Abdul-Hussain	Using an EonTex conductive stretchable elastic fibre for Hand Action Recognition
11:45 – 12:00	Václav Nežerka	Computer vision-based algorithms for recognition of construction and demolition waste materials
12:00 – 12:15	Mahmudul Akonda	Mechanical properties of recycled carbon fibres friction spun yarns -epoxy composites
12:15 – 12:30	Y.C. Zhao	Effects of graphene on hydration mechanism and mechanical properties of Na <sub>2</sub> CO <sub>3</sub> activated GGBS concrete
12:30 -12:45	Roslim Ramli	Development of deproteinized natural rubber latex foam for seat cushions
12:45 – 13:00	Ai Bao Chai	Compressive stress-strain and rebound resilience properties of novel deproteinized natural rubber latex foam
13:00-14:00	<b>Lunch Break</b>	
<b>Session B</b> Chairman: Prof: Ian M. Reaney		
14:00 – 14: 15	Ian M. Reaney	Transforming the foundation industries (introduction)
14:15 – 14:45	Paula Vilarinho	Invited talk: Challenges and opportunities for the sintering of ceramics towards decarbonization
14:45 – 15:00	Alastair T.M. Marsh	Decarbonisation of the UK cement sector: do roadmaps give a clear path forward?
15:00 – 15:15	Alan Smith	Circular Routes to A More Efficient Circular Economy.



15:15 – 15:30	Visalakshi Talakokula	A signature analysis comparison during strength gain for different blended cementitious systems using smart sensors
15:30-15:45	<b>Break</b>	
<b>Session C</b> Chairman: Prof: Ian M. Reaney		
15:45-16:15	Justin Perry	Invited talk: Building Sustainability into New Materials
16:15 – 16:45	Bertrand Delpech	Invited talk: Experimental and theoretical Investigation of a Flat Heat Pipe for high temperature radiative waste heat recovery from aluminium slabs
16:45 – 17:00	Shaoqing Qu	Metal recovery process based on ionic liquid: Separation and Regeneration of Zn, Cu, and Fe from Waste Streams
17:00 -17:15	Zhiming Yan	Conversion of hard-to-use industrial wastes to new raw materials for low energy glass manufacturing
17:15 – 17:30	Yongcong Zhao	"Effects of graphene on hydration mechanism and mechanical properties of
17:30 – 18:00	Ian M. Reaney	Closing remarks and Q and A
<b>19:00 - Conference Dinner Hamilton Conference Centre Brunel University London</b>		



Day-2 12<sup>th</sup> July 2022

**The second special IMechE Greater London Region Symposium on Material Science and Smart Materials**



09:30-09:45	<b>Opening Session</b> Chairman of IMechE GLR Committee	
09:45-10:30	<b>Keynote</b> by Dr Andrew Leonard <i>"Materials Challenges Old and New in the Offshore Energy Sector"</i>	TWI
<b>Session D</b> IMechE Symposium Facilitator: Dr. Bertrand Delpech		
10:30 – 10:45	Howi George Tharme	Thermal Analysis of a Single Cylinder Engine Block Using Finite Element Analysis
10:45 – 11:00	Longbow Fan	Sodium Niobate - Barium Titanate Solid Solutions for Energy Storage Applications
11:00 – 11:15	Zoe Hall	An investigation into the response of CFRP panels under offset impact loading conditions
11:15 – 11:30	James Dear	Benchmarking of numerical integration within stiff unified constitutive equations for metal forming applications
11:30-12:00	Break	
12:00 – 12:15	Amani Al-Othman	High Temperature Go-Mof Membranes For Fuel Cells Applications
12:15-12:30	Wessam Nimir	Zirconium Phytate-Based Proton Conductors for High-Temperature Fuel Cell Applications
12:30 – 12:45	Muhammad-Adil Abbasi	In-situ grown MOF derived CoS-MXene synergized composite



		for efficient electrode material for Supercapacitors
12:45 – 13:00	Qusay Doraghi	Thermoelectric Generators; Technology, Materials, and Applications
13:00 – 14:00	<b>Lunch Break</b>	
14:00 – 14:15	Alina Żabnieńska-Góra	Application of TEGs in the automotive industry
14:15 -14:30	Richard Brooks	C-scan visualisation of barely visible impact damage (BVID) in composites for airframes
14:30 - 14:45	Shangkuan Liu	Design modelling, analysis and manufacturing of vari-focal lenses: the integrated approach and its material dimension
14:45 – 15:00	Mohammed Al-Murisi	Co chalcogenide nanowires as an effective electrode for methanol oxidation
15:00 – 15:15	Luke Beer	Reducing Carbon emissions of reverse osmosis systems for industrial applications
15:15 – 15:30	Antonis Vlasopoulos	LCA practices in the end-of-life stage of waste plastics
15:30 – 15:45	Ohood Hameed Kadhim Adhari	Ni Chalcogenides nanosheets as an effective electrode for ethanol oxidation
15:45 -16:00	Aaron Vancea	Numerically evaluating meta-honeycomb structures
16:00 – 16:15	Gurpal Singh	Energy absorption comparison of additively manufactured AlSi10Mg thin-walled structures with simple and hybrid geometries
16:15-16:30	<b>Break</b>	
16:30 – 17:00	<b>Best Presentations Awards &amp; Closing Remarks</b>	



<b>Day-3 13<sup>th</sup> of July 2022</b>		
09:15 - 10:00	<b>Keynote</b> By: Prof. Moataz Attallah <i>"In-Situ Alloying during Additive Manufacturing: Research Opportunities and Technical Challenges"</i>	University of Birmingham
<b>Session E</b> Chairman: Luca Montorsi		
10:00 – 10:15	Aled Roberts	Bioinspired hybrid materials as sustainable alternatives to cement, concrete and ceramics
10:15 – 10:30	Anshul Gupta	Computational Study of Metal Hydride Canister With Baffle Type Heat Exchanger
10:30 - 10:45	Vassilis N. Stathopoulos	Fabrication and Study of 3d Printed Abs-Carbon Composite Anodes for Single Chamber Microbial Fuel Cells
10:45 - 11:00	Pavlos K. Pandis	Energy from Tannery Waste by a Single-Chamber Microbial Fuel Cell With Fly Ash Cathodic Electrodes
11:00 – 11:15	Renata Krzyżyńska	Hydrothermal carbonisation (HTC) of anaerobic digested sludge
11:15 – 11:30	Vassilis N. Stathopoulos	Micromachining on stainless steel 304 for improved water condensation properties
11:30 – 11:45	<b>Break</b>	
<b>Session F</b> Chairman: Vassilis N. Stathopoulos		
11:45 – 12:00	Paraskevi Nanou	Construction and performance evaluation of a water condensation test unit
12:00 – 12:15	Athanasios Zarkadoulas	Development and evaluation of corrosion resistance and hydrophobic properties of thermal sprayed coatings over carbon steel
12:15 – 12:30	Noor Ghadarah	Feasibility Study on Alternative Sensors for Acoustic Emission



		Damage Detection in Composite Structures
12:30 – 12:45	Saleh A. Alghamdi	Coating glass fiber yarn with conductive materials
12:45 – 13:00	Dimitris Iatrou	Design and construction of a photocatalytic reactor using a 3D-printing approach
13:00 – 13:15	Michalis K. Arfanis	Silica-titania bilayer coatings on 3D printed polymeric substrates for efficient photocatalytic degradation of Triton X surfactant in water
13:15 – 13:30	Gabriele Discepoli/Luca Montorsi	Environmentally and economically sustainable materials for AEM electrolyzers
13:30 – 13:45	Heba Ghazal	The Use of Biochar for the Removal of Erythromycin Residues from Aqueous Environment
13:45 – 14:00	Matteo Venturelli	Recycling of heat, water and material across multiple sectors: ceramic, chemical and steel industry
Closing Remarks		