

**BSSM 18th International Conference on Advances in Experimental Mechanics**

**Harrison Hughes Building, School of Engineering, University of Liverpool**

<b>08:00</b>	<b>Tuesday 3<sup>rd</sup> September 2024</b>		
	<b>Registration – The Foyer – Harrison Hughes Building</b>		
<b>09:00</b>	<b>Introduction and Welcome</b>		
	<b>Hele-Shaw Lecture Theatre</b>		
	<b>Conference Chair: Will Christian, University of Liverpool</b>		
	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 1.1a</b> <b>Chair: Prof Eann Patterson</b>	<b>Session 1.1b</b> <b>Chair: Dr Catrin Davies</b>	<b>Session 1.1c</b> <b>Chair: Dr Pascal Lava</b>
	<b>Fatigue and Fracture 1</b>	<b>Residual Stresses 1</b>	<b>Optical and DIC Techniques 1</b>
<b>09:20</b>	<b>Fatigue Crack Growth and Crack Tip Cyclic Plasticity Of 304L Stainless Steel at High <math>\Delta K</math></b> <u>MMJ Gillet</u> , CM Davies Imperial College London, UK	<b>Application of Machine Learning in the Investigation of Residual Stress in Electron Beam Welding</b> <u>G Wang</u> , C Truman, N Larrosa, C Jacquemoud University of Bristol, UK	<b>Initial Value Estimation using Feature-based Clustering in DIC for Measuring Large Deformations</b> S Prasad, <u>D Kumar</u> Indian Institute of Technology Madras, India
<b>09:40</b>	<b>Fatigue Life Evaluation in Corner Welded Joints</b> <u>PD Hanna</u> , Y Gao, S Whitfield, CM Davies Imperial College London, UK	<b>Introduction to Neutron Imaging at IMAT: Radiography, Tomography and Strain Mapping</b> Ruiyao Zhang Science and Technology Facilities Council (STFC), UK	<b>Effect of Combined Loads in Cracked Rails using Photoelasticity and Finite Elements</b> <u>G Ramaswamy</u> , K Ramesh, U Saravanan Indian Institute of Technology Madras, India
<b>10:00</b>	<b>A High-throughput Vibration-based Fatigue Assembly to More Quickly Characterize High Cycle Fatigue Life</b> <u>RB Berke</u> , BA Furman, JM Wagner, JB Heninger, SC Mulhall Utah State University, USA	<b>Residual Stresses in Inconel 625 Parts Produced Using Atomic Diffusion Additive Manufacturing (ADAM)</b> <u>N Naveed</u> , B Ahmad University of Sunderland, UK	<b>Accurate Strain Distribution Measurement during Large Deformations via Image Scaling Technique</b> <u>S Ri</u> , H Kichijo, M Fikry, S Ogihara National Institute of Advanced Industrial Science and Technology, Japan
<b>10:20</b>	<b>Assessment of Low Cycle Fatigue Behaviour of OFHC Copper at Room &amp; High Temperatures</b> <u>W Wan Mohammad</u> , M Mokhtarishirazabad, Y Belrhiti, M Mostafavi, C Hamelin, D Knowles University of Bristol, UK		
<b>10:40</b>	<b>Refreshments – Active Learning Lab, 3<sup>rd</sup> Floor</b>		

	Hele Shaw Lecture Theatre	Walker Lecture Theatre	Mason Bibby Room
	<b>Session 1.2a</b> <b>Chair: Dr Albert Smith</b>	<b>Session 1.2b</b> <b>Chair: Prof Janice Dullieu-Barton</b>	<b>Session 1.2c</b> <b>Chair: Dr Rachel Tomlinson</b>
	<b>Automated high spatial and temporal resolution in-situ testing in the SEM</b>	<b>Infrared and Thermal Methods 1</b>	<b>Testing of Composite Materials 1</b>
<b>11:00</b>	<b>Statistical Analysis of Micro-deformation Mechanisms of HCP Zinc Coatings by in-situ SEM-DIC Aligned to EBSD</b> <u>JPM Hoefnagels</u> , G Slokker, D König, CJA Mornout, T Vermeij Eindhoven University of Technology, The Netherlands	<b>Pervasive Stress Imaging for Experimental Validation of Structural Digital Twins</b> N Rajic, C Brooks, K Khauv, A Mukhaimar, R Tennakoon, F Zambetta, P Marzocca RMIT University, Australia	<b>Compression Fatigue Characterisation of Fibre-Reinforced Polymer Composites</b> <u>MA Battley</u> , N Shepherd, J Rout, TD Allen The University of Auckland, New Zealand
<b>11:20</b>	<b>Slip and Slide – Capturing Early Deformation Behaviour in Copper-base Alloys</b> B Poole, D Lunt, C Hardie, C Hamelin, <u>A Harte</u> United Kingdom Atomic Energy Authority, UK	<b>Thermoelastic Stress Analysis using Visible-Infrared Synchronous Measurement for Resin Materials</b> <u>D Shiozawa</u> , M Tahara, T Sakagami Kobe University, Japan	<b>Investigation of Bolt Torque and Environmental Conditioning on the Mechanical Performance of Bolted Composite Laminates</b> S Spyridonidis, T Laux, BC Kim, S Ashworth, <u>N Chandarana</u> University of Bristol, UK
<b>11:40</b>	<b>Probing the Ductile-to-brittle Transition in BCC Fusion Materials</b> <u>F Goodrich</u> , D Lunt, A Smith, A Harte, J Quinta da Fonseca, E Pickering University of Manchester, UK	<b>Stress and Dissipation Assessment During Cyclic Loading Using TSA and HSR</b> A Jury, <u>RC Tighe</u> , X Balandraud University of Waikato, New Zealand	<b>Using Fibre Optical Sensors for Validation Purposes in GFRP Transverse Leaf Springs</b> T Grünheid-Ott, <u>C David</u> , O Deisser, R Schmidt DLR, Germany
<b>12:00</b>	<b>An Investigation into the Effect of Strain Localisation on Forged <math>\beta</math>-annealed Ti-6Al-4V</b> <u>P Curran</u> , P Shanthraj, P Prangnell, N Byres, B Dod, M Atkinson, A Plowman, D Hu, J Quinta da Fonseca University of Manchester, UK	<b>An Optimisation Procedure to Obtain the Coefficients of Thermal Expansion for CFRP Laminates Based on TSA</b> <u>R Ruiz-Iglesias</u> , G Ólafsson, R Cappello, OT Thomsen, JM Dullieu-Barton University of Bristol, UK	<b>From sea sponge to space: Compressive characterisation of a novel lattice structure for aerospace application</b> <u>T McArdle</u> et al., See abstract for all authors University of Bristol, UK
<b>12:20</b>	<b>Lunch – Active Learning Lab, 3<sup>rd</sup> Floor</b>		
<b>13:20</b>	<b>Plenary Session – Hele Shaw Lecture Theatre</b> <b>Experimental Measurements for Enhanced Insights in Pioneering Fusion Powerplant Development</b> <b>Professor Chris Waldon, FREng, STEP Chief Engineer, UKAEA, University of Liverpool, UK</b>		<b>Chair: Dr Will Christian</b>

	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 1.3a Chair: Dr Andrew Feeney</b>	<b>Session 1.3b Chair: Dr Neha Chandarana</b>	<b>Session 1.3c Chair: Dr Francesco Giorgi</b>
	<b>Ultrasonic Devices</b>	<b>Optical and DIC Techniques 2</b>	<b>Soft matter, electronics and robotics</b>
<b>14:10</b>	<b>High Stiffness Resin for Flexural Ultrasonic Transducers</b> <u>A Hamilton</u> , S Adams, Y Liu, M Hafezi, W Somerset, K Lam, L Kang, S Dixon, S Cochran, A Feeney University of Glasgow, UK	<b>Investigation of Strain Concentration around Geometric Features in Welding</b> <u>K Shao</u> , C Truman, N Larrosa, C Jacquemond University of Bristol, UK	<b>Conductive MRF-Based Flexible Sensor with Magneto-Mechanical Dual-Response and Adjustable Stiffness</b> <u>YX Sun</u> , M Sang, XL Gong University of Science and Technology of China, China
<b>14:30</b>	<b>Effect of Organic Solvent Additives on the Enhancement of Ultrasonic Strength in Water for Lithium Ion Battery</b> <u>C Lei</u> , B Jacobson, S Scott, J Hartley, I Sumarlan, T Yingnakorn, K Ryder, A Abbott University of Leicester, UK	<b>Study of Lüders Bands in a Bainitic Steel</b> <u>J Chatellier</u> , P-O Bouchard, C Pradille, C Kerisit PSL Research University, France	<b>Triple-responsive Soft Actuator with Plastically Retentive Deformation and Magnetically Programmable Recovery</b> <u>WW Li</u> , SH Xuan, XL Gong University of Science and Technology of China, China
<b>14:50</b>	<b>Resonance Frequency Stability of a Nitinol Class IV Flextensional Transducer</b> <u>GJ Puthenvila</u> , M Hafezi, A Feeney, M Lucas University of Glasgow, UK	<b>Equivalence of the Multiparameter Stress Field Equations for a Bimaterial Interfacial Crack</b> <u>K Shins</u> , K Ramesh IIT Madras, India	<b>Wearable Safeguarding Leather with Sensing, Thermal Management, and Electromagnetic Interference Shielding</b> <u>ZY Fan</u> , SH Xuan, XL Gong University of Science and Technology of China, China
<b>15:10</b>	<b>The Thermomechanical Behaviour of Nitinol for Adaptive Ultrasonic Devices</b> <u>M Hafezi</u> , A Feeney University of Glasgow, UK	<b>Damage evaluation on impacted repaired carbon fibre composites</b> <u>EYH Chai</u> , W-C Wang, WJR Christian University of Liverpool, UK	
<b>15:30</b>	<b>Refreshments - Active Learning Lab, 3<sup>rd</sup> Floor</b>		

	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 1.4a Chair: Prof Fabrice Pierron</b>	<b>Session 1.4b Chair: Dr Khurram Amjad</b>	<b>Session 1.4c Chair: Prof Genevieve Langdon</b>
	<b>Material Testing 2.0, Part 1</b>	<b>Condition Monitoring</b>	<b>Impact, Blast and High Strain Rates 1</b>
<b>16:00</b>	<b>An Alternative to Temporal Down-sampling of DIC Data in Mechanical Characterization</b> <u>M Halilović</u> , B Starman, S Coppieters University of Ljubljana, Slovenia	<b>Development of a Best-practice Approach to Utilise Real-time Condition Monitoring Data in Digital Twins</b> CA Middleton, <u>T Nguyen</u> , EA Patterson University of Liverpool, UK	<b>Multiaxial Rate Dependent Behaviour of Ti6Al4V</b> <u>G Gour</u> , Y Xu, A Pellegrino University of Oxford, UK
<b>16:20</b>	<b>On the Validation of a Crystal Plasticity-based Intragranular Stress Fields Identification Framework</b> R Langlois, J Réthoré, <u>R Seghir</u> Nantes Université, France	<b>AE Based Damage Characterization of CFRP with Considering AE Sensor Response</b> <u>T Sakai</u> , G Ankit Saitama University, Japan	<b>Mechanical Performance of Carbon Nanotube Film Subjected to Impact Loading</b> <u>W Wang</u> , V Toropov, W Tan Queen Mary University of London, UK
<b>16:40</b>	<b>Analysis of a Heterogeneous Test for Calibration of Viscoplastic Models</b> <u>T Barret</u> , A Andrade-Campos, S Thuillier Univ. Bretagne Sud, France	<b>Development on Diagnosing Method of Fuel Cells using Electromagnetic Field Excited Oscillation</b> <u>T Asai</u> , N Kurimoto, S Saeki Meijo University, Japan	<b>Searching for Elusive Solitons: Optical Detection of Strain Waves Generated by a Pulsed Laser in Acrylic Bars</b> <u>J Vizor</u> , PD Ruiz, KR Khusnutdinova Loughborough University, UK
	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 1.5a Chair: Prof Fabrice Pierron</b>	<b>Session 1.5b Chair: Dr Yevgen Gorash</b>	<b>Session 1.5c Chair: Dr David Kumar</b>
	<b>Material Testing 2.0, Part 2</b>	<b>Fatigue and Fracture 2</b>	<b>Impact, Blast, and High Strain Rates 2</b>
<b>17:00</b>	<b>Experimental validation of the spatial mapping of plastic properties in welds with the VFM</b> <u>R Hamill</u> , A Marek, A Harte, F Pierron University of Southampton, UK	<b>Evaluating Fracture Parameters from Phase Field Simulations</b> <u>C Anand</u> , K Ramesh, S Natarajan IIT Madras, India	<b>Mechanical Energy Absorption of Metal-Organic Frameworks</b> <u>A Siwji</u> , H Jiang, D Parsons, Y Sun University of Birmingham, UK
<b>17:20</b>	<b>Materials Testing 2.0 for Creep</b> <u>R Spencer</u> , L Fletcher, M Gorley, C Hamelin, A Harte United Kingdom Atomic Energy Authority, UK	<b>Challenges in Dynamic Fracture Testing - Validity of Current Standard Methods and Improved Testing Methods</b> <u>BMB Sargeant</u> , CM Davies, PA Hooper Imperial College London, UK	<b>Influence of gelatine as a transmission layer on the transient response of panels subjected to an explosion</b> <u>EL Osborne</u> , GS Langdon, JW Denny, R Waddoups, SD Clarke University of Sheffield, UK
<b>17:40</b>	<b>Optimization of the specimen geometry for one-shot discovery of material models</b> <u>S Ghoul</u> , M Flaschel, S Kumar, L De Lorenzis ETH Zürich, Switzerland	<b>Temperature and Microstructural Effects on the fracture Toughness Properties of As-Cast DP800 Steel Slabs</b> <u>OD Taiwo</u> , D Farrugia, CM Davies Imperial College London, UK	<b>Composite Kevlar Fabric-Based Triboelectric Nanogenerator with Anti-Impact and Sensing Performance</b> <u>WH Wang</u> , S Wang, XL Gong University of Science and Technology of China, China
<b>18:00</b>	<b>Welcome Reception – Victoria Gallery and Museum</b>		

<b>Wednesday 4th September 2024</b>			
	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 2.1a</b> <b>Chair: Dr Salih Gungor</b>	<b>Session 2.1b</b> <b>Chair: Dr Hari Arora</b>	<b>Session 2.1c</b> <b>Chair: Dr Matthew Roy</b>
	<b>Components for Nuclear Applications</b>	<b>Biomaterials and Biomechanics</b>	<b>Management of Residual Stress during Manufacturing</b>
<b>09:00</b>	<b>Ultrasonic Welded Straws for High Energy Physics Detectors</b> <u>KE Buchanan</u> , S Sgobba, H Danielsson CERN, Switzerland	<b>Intervertebral disc degeneration affects the distribution of internal stresses and strains within human lumbar vertebrae</b> <u>KA Raftery</u> , A Kargarzadeh, S Tavana, N Newell Imperial College London, UK	<b>Surface Integrity-Informed CPFEM: A Novel Approach to the Prediction of Fatigue Crack Initiation in Ti-6Al-4V</b> <u>MF Arcidiacono</u> , I Violatos, S Rahimi University of Strathclyde, UK
<b>09:20</b>	<b>Where Experimental Mechanics and Supercomputing Meet: Uncertainty Quantification for Fusion Validation</b> <u>L Fletcher</u> , M Atkinson, A Marsh, A Tayeb, C Hamelin UK Atomic Energy Authority, UK	<b>Using Digital Image Correlation (DIC) and the Virtual Fields method (VFM) to determine eardrum stiffness</b> <u>P Livens</u> , JJJ Dirckx University of Antwerp, Belgium	<b>Simulation and validation of residual stress generation at an interface of a Direct Energy Deposited (DED)</b> <u>MD Ferguson</u> , T Konkova, I Violatos University of Strathclyde, UK
<b>09:40</b>	<b>Uncertainty quantification on the frequency response of fusion components using digital image correlation</b> <u>A Marsh</u> , L Fletcher, C Hamelin, A Harte UK Atomic Energy Authority, UK	<b>Mechanical Characterisation of Lymph Node Tissue and In-Vivo Needle Insertion for EBUS-TBNA</b> <u>LR Mkoh</u> , S Bicknell, R Sayer, S Cochran, E Henderson University of Glasgow, UK	<b>Prediction and control of residual stress and distortion during machining of Al705 billets</b> <u>I Violatos</u> , S Fitzpatrick, S Rahimi Advanced Forming Research Centre, UK
<b>10:00</b>		<b>Nano-bio experimental mechanics at the optical limit</b> EA Patterson, JM Curran, <u>F Giorgi</u> University of Liverpool, UK	<b>Contouring Residual Stress: A New Frontier for Polymer Composite Characterization</b> <u>Praveen KR</u> , F Hosseinzadeh, PJ Bouchard, F Lefebvre, D Guillon The Open University, UK
<b>10:20</b>	<b>Exhibitor Introductions –</b>		<b>Chair: Dr Hari Arora</b>
<b>10:40</b>	<b>Refreshments and Exhibition – Active Learning Lab, 3<sup>rd</sup> Floor</b>		

	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>
	<b>Session 2.2a</b> <b>Chair: Prof Mark Battley</b>	<b>Session 2.2b</b> <b>Chair: Dr Lloyd Fletcher</b>
	<b>Composites and Polymer Materials</b>	<b>Model Validation</b>
<b>11:10</b>	<b>Volume Decomposition of Tomography Data to Detect Damage in Mini-composites</b> CA Middleton, <a href="#">K Amjad</a> , WJR Christian, AM Hilmas, C Przybyla, EA Patterson UKAEA, UK	<b>A Case Study Approach to Evaluating Methods for Advanced Model Validation</b> <a href="#">K Dvurecenska</a> , M Campbell, D Backman University of Liverpool, UK
<b>11:30</b>	<b>Strain Measurement near Fiber-Matrix Interface of CFRP Cross Section Using DIC-FEM Hybrid Method</b> A Nakachi, K Iizuka, <a href="#">S Yoneyama</a> Aoyama Gakuin University, Japan	<b>Practical Assessment of DIC Uncertainties in View of FE Model Validation</b> A Peshave, <a href="#">P Lava</a> , F Pierron MatchID, Belgium
<b>11:50</b>	<b>Investigation of Compressive and Interlaminar Fracture Properties of GF/Acrylic Composites Under SWA Effect</b> N Siddgonde, JA Quinn, M Devine, AK Alapati, CMÓ Brádaigh, D Ray The University of Edinburgh, UK	<b>FE Validation from DIC data : A Practical Case Study in Bending</b> V Firouzbakht, A Peshave, P Lava, <a href="#">F Pierron</a> MatchID, Belgium
<b>12:10</b>	<b>An experimental and numerical study on the thermal V-bending mechanism of fibre metal laminates</b> Q Lin, Z Guan, <a href="#">WJR Christian</a> University of Liverpool	<b>Testing &amp; Modelling of Composite Substructures: Opportunities and Challenges</b> <a href="#">T Laux</a> , R Cappello, JS Callaghan, SW Boyd, DA Crump, AF Robinson, OT Thomsen, JM Dulieu-Barton University of Bristol, UK
<b>12:30</b>	<b>Plenary Session – Hele Shaw Lecture Theatre</b>	
	<b>BSSM Best Paper in ‘Strain’ Fylde Prize for 2023</b>	<b>Chair: Prof Johan Hoefnagels</b>
<b>13:00</b>	<b>Lunch and Exhibition – Active Learning Lab, 3<sup>rd</sup> Floor</b> <b>Exhibitors: Alemnis, Correlated Solutions, Dantec Dynamics, ISIS Neutron &amp; Muon Source, LAVision UK, MatchID, Photron, Quantum Design UK, Severn Thermal Solutions, Shimadzu, Techni Measure, Vishay Measurements Group, Vision Research/Ametek</b>	

14:00	<b>Plenary Session – Hele Shaw Lecture Theatre</b> <b>BSSM Young Stress Analyst Competition</b>	<b>Chair: Dr Neha Chandarana</b>
	<p>1 Maureen A. Fitzpatrick, University College London, UK  <b>Influence of Laser Preheating on Residual Stress in Ti-6Al-4V Laser Powder Bed Fusion (LPBF)</b></p> <p>2 Carla N. Villacís Núñez, University of Michigan, USA  <b>Intact and Torn Rotator Cuff Behavior Using Magnetic Resonance Imaging and Variational System Identification</b></p> <p>3 Xavier A. Ojeda, University of Manchester, UK  <b>Slip activity in Ti-6Al-4V under cold creep conditions</b></p> <p>4 Lewis S. Wallace, University of Strathclyde, UK  <b>Woven Bio-fabric Material Characterisation and FEA Comparison to Scanned Stents</b></p>	
15:30	<b>Refreshments and Exhibition – Active Learning Lab, 3<sup>rd</sup> Floor</b> <b>Exhibitors: Alemnis, Correlated Solutions, Dantec Dynamics, ISIS Neutron &amp; Muon Source, LAVision UK, MatchID, Photron, Quantum Design UK and Ireland, Severn Thermal Solutions, Shimadzu, Techni Measure, Vishay Measurements Group, Vision Research/Ametek</b>	
16:05	<b>Plenary Session – Hele Shaw Lecture Theatre</b> <b>60<sup>th</sup> Anniversary – History of the BSSM</b> <b>Prof Janice Dullieu-Barton, University of Bristol</b>	
16:25	<b>BSSM Measurements Lecture 2024</b>  <b>Measuring the behaviour of a soft material: from quasi-static to blast response'</b> <b>Professor Genevieve Langdon, University of Sheffield, UK</b>	<b>Chair: Dr Hari Arora (Chair of the BSSM)</b>
18:00	<b>Coaches leave for the Merseyside Maritime Museum</b> <b>Coaches to depart from outside of Starbucks Coffee on Mount Pleasant</b>	
18:30	<b>Pre-dinner drinks</b>	
19:00	<b>Chairman’s Gala Reception and Awards Ceremony</b>	

	<b>Thursday 5<sup>th</sup> September 2024</b>		
	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>	<b>Mason Bibby Room</b>
	<b>Session 3.1a</b> <b>Chair: Dr Rachael Tighe</b>	<b>Session 3.1b</b> <b>Chair: Dr Ksenija Dvurecenska</b>	<b>Session 3.1c</b> <b>Chair: Prof Mateusz Kopec</b>
	<b>Infrared and Thermal Methods 2</b>	<b>Modal Analysis</b>	<b>Testing of additive materials</b>
<b>09:00</b>	<b>Infrared Imaging of Thermo-Elastic Isentropic Cooling and Heating During Uniaxial Tensile Tests</b> J Carrock, <u>A Dumont</u> , H Kouser, S Burns, C Pratt, A Sefkow Telops, Canada	<b>Model Validation for Stator and Rotor of an Electric Vehicle Motor</b> <u>JA Yang</u> , CC Yu, CS Lin National Pingtung University of Science and Technology, Taiwan	<b>Mechanical properties of Polymer Matrix Composites produced by Fused Deposition Modelling (FDM) method</b> <u>CT Ong</u> , CY Yin, KL Goh, FC Lee Newcastle University Singapore
<b>09:20</b>	<b>Simultaneous thermal &amp; kinematic full-field measurements on optimal patterns based on LSA and IR thermography</b> <u>T Jailin</u> , A Jury, B Blaysat, A Vinel, X Balandraud, M Grédiac Clermont Auvergne Université, France	<b>On the detection of defects employing High Resolution Digital Image Correlation</b> AJ Molina-Viedma, <u>L Felipe-Sesé</u> , JA Almazán-Lázaro, C Huertas-Charriel, E López-Alba, FA Díaz Universidad de Jaén, Spain	<b>Effect of scanning speed on the damage behaviour of SLM printed Inconel 625</b> <u>RA Yildiz</u> , M Malekan University of Southern Denmark, Denmark
<b>09:40</b>	<b>Validation of a Numerical Model for the Non-adiabatic Thermoelastic Stress Analysis of Composite Laminates</b> <u>R Cappello</u> , R Ruiz-Iglesias, G Ólafsson G Pitarresi, G. Catalanotti, JM Dulieu-Barton University of Bristol, UK	<b>A thermoacoustic rig to test materials for challenging environments</b> <u>M Weihrauch</u> , J Lambros, EA Patterson University of Liverpool, UK	<b>Effect of Build Orientation on the Yield Surface of Stainless Steel 316L Fabricated by LPBF-M</b> <u>VP Dubey</u> , M Kopec, M Pawlik, P Wood, ZL Kowalewski Polish Academy of Sciences, Poland
<b>10:00</b>	<b>Fatigue Crack Detection by Active Infrared Thermography with Low Power Laser</b> <u>Y Murao</u> , D Shiozawa, T Sakagami Kobe University, Japan	<b>Modal Coupling Dynamics of a Nitinol Langevin Transducer</b> Y Liu, M Hafezi, <u>A Feeney</u> University of Glasgow, UK	<b>Graphene Oxide Aerogel Metamaterials for Future Human Machine Interface</b> Y Wang, Z Qin, D Wang, D Liu, Z Wang, A Jazzar, P He, Z Guo, X Chen, C Jia, X He, X Zhang, <u>BB Xu</u> , F Chen Northumbria University, UK
<b>10:20</b>	<b>Refreshments – Active Learning Lab, 3<sup>rd</sup> Floor</b>		
<b>10:40</b>	<b>Plenary Session – Hele Shaw Lecture Theatre</b> <b>Insights on the use of IR-thermography in damage identification</b> <b>Dr Chiara Colombo, Associate Professor, Politecnico Milano, Italy</b>		<b>Chair: Dr Ksenija Dvurecenska</b>



	<b>Hele Shaw Lecture Theatre</b>	<b>Walker Lecture Theatre</b>
	<b>Session 3.2a      Chair: Dr Matthew Roy</b>	<b>Session 3.2b      Chair: Dr Charchit Kumar</b>
	<b>Identification of Residual Stresses</b>	<b>Novel Experimental Techniques 1</b>
<b>11:30</b>	<b>Residual Stresses and Deformations Generated in Laser Powder Bed Fusion of Thin Metallic Samples</b> P Khanbolouki, <u>E Patterson</u> , C Sutcliffe, J Lambros University of Liverpool, UK	<b>Combining the Small Punch Test with the Small Ring Test</b> A Joshi, A Forsey, R Moat, <u>S Güngör</u> The Open University, UK
<b>11:50</b>	<b>Residual stress evaluation of laser powder bed fusion benchmarks using the contour method</b> <u>Z Cai</u> , RC Laurence, D Yang, RM Kindermann, J Kurebwa, GN Haribabu, Z Song, R Huo, MJ Roy University of Manchester, UK	<b>Advanced Measurement Technologies for Smarter Testing: Developing a multi-system setup for large scale testing</b> <u>L Reid</u> Airbus Operations Ltd., UK
<b>12:10</b>	<b>Determination of Residual Stress in Additively Manufactured Parts by Synchrotron X-ray and Neutron Diffraction</b> <u>RC Laurence</u> , D Canelo-Yubero, E Maawad, G Abreu Faria, P Staron, R Ramadhan, S Cabeza, A Paecklar, T Pirling, MF Slim, T Buslaps, M Sanchez-Poncela, W Cui, PJ Withers, MJ Roy University of Manchester, UK	<b>An optical strain gage for full-field measurements</b> <u>A Vinel</u> , M Grédiac, X Balandraud, B Blaysat, T Jailin, F Sur Clermont Auvergne Université, France
<b>12:30</b>	<b>The manufacture of inherently vibration damped titanium AM structures by encapsulating powder feedstock</b> <u>S Tammam-Williams</u> , C Packer, I Butler, M Baxter, S Islam, L Napper, C Holycross University of Edinburgh, UK	<b>Development and validation of human head finite element model for predicting head injuries</b> <u>A Kumagai</u> , S Hayashi, Y Zhang Sophia University, Japan
<b>12:50</b>	<b>Lunch – Active Learning Lab, 3<sup>rd</sup> Floor</b>	

	Hele Shaw Lecture Theatre	Walker Lecture Theatre	Mason Bibby Room
	Session 3.3a Chair: Prof Johan Hoefnagels	Session 3.3b Chair: Dr Will Christian	Session 3.3c Chair: Dr Daniel Mulvihill
	Metals and Microstructure	Novel Experimental Techniques 2	Tribology and Contact
14:00	<b>Mechanical response and microstructural evolution of 6061-T6 subjected to dynamic testing at low temperature</b> M Kopec, X Liu, D Gorniewicz, S Józwiak, J Janiszewski, ZL Kowalewski Polish Academy of Sciences, Poland	<b>Investigation into the Strength of Adhesive Joints at Cryogenic Temperatures Using a Modified Arcan Fixture</b> DJ Brearley, T Laux, M Lakrimi, JM Dulieu-Barton, OT Thomsen University of Bristol, UK	<b>Investigating Triboelectrification Through Real Contact Area Analysis</b> C Kumar, S Bairagi, G Khandelwal, Y Xu, N Gadegaard, DM Mulvihill University of Glasgow, UK
14:20	<b>In situ Extreme Micromechanics – Recent Innovations and Prospects</b> N Randall, R Pero, J-M Breguet Alemnis AG, Switzerland	<b>Quasi-static and High Strain Rate Simple Shear Testing of Inconel 625 Superalloy</b> L Zhang, D Townsend South China University of Technology, China	<b>Investigating Bearing Subsurface Microstructural Damage of White Etching Areas and Butterfly Wing Cracks</b> R Dai, H Long The University of Sheffield, UK
14:40	<b>Multiscale Creep Characterisation of CuCrZr Alloy as Heat Sink Used in the Divertor of Nuclear Fusion Tokamak</b> PN Kulkarni, A Forsey, S Gungor, R Moat The Open University, UK	<b>Recent Advances in Ultrasonic Fatigue Testing of Structural Steels and Their Welds</b> Y Gorash, T Comlekci, A Toumpis, L Milne, A England, C Walker University of Strathclyde, UK	<b>Small-scale test of ball-on-curved surface contact to study fretting wear of wind turbine blade pitch bearings</b> ZZ Wu, V Perez Cervantes, E Hurtado, WY Song, HJ Lee, C Ng, H Long The University of Sheffield, UK
15:00	<b>Uniaxial Creep and Creep Crack Growth Testing in 316L Stainless Steel Manufactured by Laser Powder Bed Fusion</b> A Milne, CM Davies Imperial College London, UK	<b>A novel volumetric measurement technique to measure strain in brain phantoms during needle insertion</b> TJ Pritchard, R van Loon, H Arora Swansea University, UK	<b>Bespoke test rig to measure dynamic contact behaviour of railway ballast</b> D Bonafini, BN Madhusudhan, G Watson University of Southampton
15:20	<b>Closing Plenary Session – Hele Shaw Lecture Theatre</b> <b>Conference Chair: Dr Will Christian</b>  <b>Announcement of BSSM 19th International Conference on Advances in Experimental Mechanics 2025 – Imperial College London</b> <b>Tuesday 2<sup>nd</sup> – 4<sup>th</sup> September 2025</b> Conference Chair: Dr Catrin Davies, Imperial College London		
15:30	<b>Refreshments – Conference Close –</b>		