

1st Precision & Performance Conference
Cranfield University, UK
18-20 November 2025

Tuesday 18th November 2025

Time (GMT)	Programme
08:15-09:00	Registration & Refreshments
09:00-09:10	Welcome address by euspen President: Prof. Andreas Archenti, KTH, SE
09:10-09:20	Welcome address by local host: Prof. Leon William, Director of Manufacturing & Design, Cranfield University
09:20-09:25	Welcome address by Conference Chair: Prof. Andrew Longstaff, University of Huddersfield, UK
09:30-10:00	Keynote 1: Metrology for manufacturing (including the Timing Node at Cranfield University) Prof. JT Janssen, Chief Scientist, NPL, UK
Chair: Andrew Longstaff	Session 1: Measurement systems for machine evaluation and control (Metrology for Manufacturing)
10:00-10:15	01.01 Digitalized Framework for an adaptive Data Acquisition System enabling an Intelligent Thread Whirling Process <i>Arjun Balekudru Bhat, (IFW), Leibniz Hannover University, DE (PRE25103)</i>
10:15-10:30	01.02 Generalised test for evaluating the performance of large-volume metrology systems when measuring objects in motion <i>David Gorman, NPL, UK (PRE25114)</i>
10:30-10:40	Discussion
10:40 -11:00	Coffee & networking
11:00 -11:15	01.03 Characterisation of the Cyclic Errors During Linear Motion of an Articulated Robot <i>Khin Win Khant, University of Huddersfield, UK (PRE25119)</i>
11:15 -11:30	01.04 Geometric error measurement and compensation of a PKM type CNC machine <i>Simon Fletcher, University of Huddersfield, UK (PRE25127)</i>
11:30 -11:45	01.05 Geometric Error Identification of Five-axis Machining Centre Based on Cube Machining Test Results with Tool Posture Optimization <i>Ryota Kawai, Nagoya University, JP (PRE25128)</i>
11:45 -12:00	01.06 Uncertainty analysis of positioning deviations of machine tools' linear axes: A foundation for uncertainty evaluation of volumetric deviations <i>Morteza Dashtizadeh, University of Huddersfield, UK (PRE25136)</i>
12:00 -12:20	Discussion

12:20-13:15	Lunch
13:15-13:25	euspen Scholarship Awards
13:25-14:15	Tuning Node tour, NPL (Cranfield University)
14:15-14:45	Keynote 2: Dr. Blake Kendrick, RENISHAW
Chair: Andreas Archenti	Session 2: Thermal Characterisation & Error Mitigation Compensation
14:45-15:00	O2.01 Development and validation of a simplified coil model for CFD simulation of a nano-positioning planar drive system <i>Ina Naujokat IMMS GmbH, DE (PRE25101)</i>
15:00-15:15	O2.02 Experimental characterization of thermal disturbances in a 6DOF nanopositioning system under varying operational conditions <i>Parastoo Salimitari IMMS GmbH, DE (PRE25102)</i>
15:15-15:25	Discussion
15:25-16:00	Coffee & Networking
16:00-16:15	O2.03 Analysis of Thermal Volumetric Effect on Machine Structure Using FEA Model <i>Daniel Divíšek CTU in Prague, CZ (PRE25104)</i>
16:15-16:30	O2.04 High precision thermal control of fluidic mediums <i>Matthew Tucker, Fives/Cranfield Precision, UK (PRE25105)</i>
16:30-16:45	O2.05 Optimizing Grinding Processes with Machine Learning: Predictive Models for Enhanced Precision <i>Harris Farooq, Cranfield Precision/Fives UK (PRE25110)</i>
16:45-17:00	Discussion
17:00-17:10	Short break
17:10-17:25	O2.06 Physics-Informed Neural Networks for Temperature Field Reconstruction <i>Gorka Aguirre, IDEKO, ES (PRE25126)</i>
17:25-17:40	O2.07 Robust thermal error compensation using Kalman-weighted ensembles of reduced physical models <i>Lenny Rhiner inspire AG, ETH Zürich, CH (PRE25117)</i>
17:40-17:55	O2.08 Temperature Control System for CNC Milling to Improve Dimensional Accuracy and Surface Finish <i>David Felipe Ariza Martínez Javeriana, CO (PRE25124)</i>

17:55-18:05	02.09 Machine Tool Displacement Error Detection Enabling Design Changes and Active Compensation <i>Mark Stocker, Cranfield Precision, UK (PRE25139)</i>
18:05-18:25	Discussion
	CLOSE – free evening

Wednesday 19th November 2025

Time (GMT)	Programme
08:30-09:00	Keynote 3: Sarah Black-Smith, Siemens, UK
Chair:	Session 3: Product Design & Manufacturing Processes
09:00-09:15	03.01 Inconel 625 and tungsten metal matrix composite fabrication using WAAM-TIG to achieve superior tribo-mechanical properties <i>Shubham Sadhya, Indian Institute of Technology Indore, IN (PRE25108)</i>
09:15-09:30	03.02 Thermal Imaging and Microstructural Characterization of Friction Stir Welded Al 6061-T6 <i>Arsalan Javaid, National University of Sciences and Technology (NUST), PK (PRE25132)</i>
09:30-09:45	03.03 Study on the thermal stability of cold forged carbon fibre-based structural member for high dynamic machinery applications <i>Kevin John, University of Huddersfield, UK (PRE25118)</i>
09:45-10:00	Discussion
10:00-10:30	Coffee & networking
10:30-10:45	03.04 Dual-Method Design Exploration for Parametric Sensitivity and Performance Optimization in CF-PA6 Additive Manufacturing <i>Ali Iqbal, National University of Sciences and Technology (NUST), PK (PRE25130)</i>
10:45-11:00	03.05 Combined planar and non-planar path planning for wire arc additive manufacturing of an organic bow window in AlSi5: slicing optimization and process prototyping. <i>Atif Naseer, Politecnico di Milano (PRE25122)</i>
11:00-11:15	03.06 Experimental Evaluation of Burr Formation in High and Low Speed Micromilling of Inconel 718 with Coated Carbide Tools using Statistical Methods <i>Ahmad Waqar Tehami, National University of Sciences and Technology (NUST) (PRE25133)</i>

11:15-11:30	Discussion
11:30-11:45	O3.07 Comparison of laser-deposited characteristics between pre-alloyed and homogenized powders of AlCoCrFeNi High Entropy Alloy and correlating with the thermal history <i>Puneeth Thati, IIT Kharagpur, IN (PRE25121)</i>
11:45-12:00	O3.08 Grinding optical-grade features in glass and silicon for compact vacuum cells <i>Joel Keen, University of Southampton, UK (PRE25125)</i>
12:00-12:15	O3.09 Product-oriented design evaluation of serpentine, sar, and bilayer passive micromixers <i>Muhammad Muzafar CAE NUST University Pakistan (PRE25135)</i>
12:15-12:30	Discussion
12:30-13:30	Lunch
13:30-14:15	Exhibitor presentations
14:15-14:45	Coffee & Networking
14:45-15:45	Session 4: Posters P4.01 Torque testing splined work holders for EV components <i>Thomas Furness, University of Huddersfield, UK (PRE25109)</i> P4.02 Additive manufacturing process assessment framework for x-ray computer tomography derived measurement <i>David Gorman, NPL, UK (PRE25116)</i> P4.03 Sustainable Repair of High-Value Components via Laser Directed Energy Deposition: Thermal Monitoring and DIC-Based Qualification of Inconel 718 Repaired Parts <i>Jha Me, IITH, IN (PRE25120)</i> P4.04 Towards a metrologically assisted process for multi-axis machining using a digital twin of the machine tool: a methodological approach <i>Ermes Xhafa, LNE, FR (PRE25123)</i> P4.05 Machine Tool Thermal Displacement Error Detection Enabling Design Changes and Active Compensation <i>Timothy Bartley, Fives, UK (PRE25129)</i> P4.06 Taguchi-Based Evaluation of High-Temperature Tensile Behavior in PEEK-PLA Hybrid Structures Produced via FDM <i>Ossama Bin Mazhar, NUST, PK (PRE25137)</i> P4.07 Thermal Imaging and Microstructural Characterization of Friction Stir Welded Al 6061-T6

	<i>Arsalan Javaid, NUST, PK (PRE25138)</i>
Chair:	Session 5: Innovations in Manufacturing Process & Thermal Control
15:45-16:00	O5.01 A new paradigm for real-time machining optimization via an embedded near-zero latency heat flux sensor, <i>Umer Shaukat, University of Turku, FI (PRE25107)</i>
16:00-16:15	O5.02 Low voltage ultra-high resolution electron microscopic analysis of small grain diamond abrasive media, <i>Marvin Groeb, Kern Microtechnik GmbH (PRE25112)</i>
16:15-16:25	Discussion
16:30-	Coaches to Cranfield Precision / Fives Group tour
18:30	Networking dinner at Chicheley Hall

Thursday 20th November 2025

Time (GMT)	Programme
08:30–09:00	Keynote 4: Dr. John Ahmet Erkoyuncu, Cranfield University
Chair:	Session 5: Innovations in Manufacturing Process & Thermal Control (cont.:)
09:00-09:15	O5.03 Model-based thermal drift compensation for high-precision hexapod robot actuators <i>Clément Robert LIRMM, FR (PRE25106)</i>
09:15-09:30	O5.04 Experimental investigation of adaptive temperature control for energy efficient precision grinding machines <i>Sebastian Lang ETH Zurich / inspire AG, CH (PRE25115)</i>
09:30-09:45	O5.05 Prediction of cutting force uncertainty characteristics through the integration of logical and numerical processing techniques, <i>Wencheng Pan, University of Huddersfield (PRE25113)</i>
09:45-10:00	Discussion
10:00-10:15	Closing remarks and end
10:15-10:30	Coffee
10:30	Coaches to Bletchley Park for private guided tours and lunch