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	**O1.01** Generalised test for evaluating the performance of large-volume metrology systems when measuring objects in motion *David Gorman, NPL, UK (PRE25114)*
10:15-10:30	**O1.02** Characterisation of the Cyclic Errors During Linear Motion of an Articulated Robot *Khin Win Khant, University of Huddersfield, UK (PRE25119)*
10:30-10:40	**Discussion**
10:40 -11:10	**Coffee & networking**
11:10 -11:25	**O1.03** Geometric error measurement and compensation of a PKM type CNC machine *Simon Fletcher, University of Huddersfield, UK (PRE25127)*
11:25 -11:40	**O1.04** Geometric Error Identification of Five-axis Machining Centre Based on Cube Machining Test Results with Tool Posture Optimization *Ryota Kawai, Nagoya University, JP (PRE25128)*
11:40 -11:55	**O1.05** Uncertainty analysis of positioning deviations of machine tools' linear axes: A foundation for uncertainty evaluation of volumetric deviations *Morteza Dashtizadeh, University of Huddersfield, UK (PRE25136)*
11:55 -12:10	**Discussion**
12:10-12:15	**euspen Scholarship Awards**
12:15-13:15	**Lunch**

13:25-14:15	Time and Frequency Innovation Laboratory, 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** Experimental characterization of thermal disturbances in a 6DOF nanopositioning system under varying operational conditions *Parastoo Salimitari, IMMS GmbH, DE (PRE25102)*
15:00-15:15	**O2.02** Development and validation of a simplified coil model for CFD simulation of a nano-positioning planar drive system *Ina Naujokat, IMMS GmbH, DE (PRE25101)*
15:15-15:25	**Discussion**
15:25-16:00	**Coffee & Networking**
16:00-16:15	**O2.03** High precision thermal control of fluidic mediums *Matthew Tucker, Cranfield Precision/Fives UK (PRE25134)*
16:15-16:30	**O2.04** Analysis of Thermal Volumetric Effect on Machine Structure Using FEA Model *Daniel Divíšek CTU in Prague, CZ (PRE25104)*
16:30-16:45	**O2.05** Optimizing Grinding Processes with Machine Learning: Predictive Models for Enhanced Precision *Harris Farooq, Cranfield Precision/Fives UK (PRE25110)*
16:45-17:00	**Discussion**
17:00-17:15	**O2.06** Physics-Informed Neural Networks for Temperature Field Reconstruction *Gorka Aguirre, IDEKO, ES (PRE25126)*
17:15-17:30	**O2.07** Temperature Control System for CNC Milling to Improve Dimensional Accuracy and Surface Finish *David Felipe Ariza Martínez Javeriana, CO (PRE25124)* - ***online***
17:30-17:40	**Discussion**
18:00	**CLOSE – free evening**

Wednesday 19th November 2025

Time (GMT)	Programme
08:30-09:00	**Keynote 3: Machine & Robot Calibration** Prof. Andreas Archenti, KTH Stockholm & Prof. Andrew Longstaff, University of Huddersfield, UK
Chair:	**Session 3: Product Design & Manufacturing Processes**
09:00-09:15	**O3.01** Inconel 625 and tungsten metal matrix composite fabrication using WAAM-TIG to achieve superior tribo-mechanical properties *Shubham Sadhya, Indian Institute of Technology Indore, IN (PRE25108)*
09:15-09:30	**O3.02** Study on the thermal stability of cold forged carbon fibre-based structural member for high dynamic machinery applications *Kevin John, University of Huddersfield, UK (PRE25118)*
09:30-09:45	**O3.03** Dual-Method Design Exploration for Parametric Sensitivity and Performance Optimization in CF-PA6 Additive Manufacturing *Ali Iqbal, National University of Sciences and Technology (NUST), PK (PRE25130)*
09:45-10:00	**Discussion**
10:00-10:30	**Coffee & networking**
10:30-10:45	**O3.04** Combined planar and non-planar path planning for wire arc additive manufacturing of an organic bow window in AlSi5: slicing optimization and process prototyping. *Atif Naseer, Politecnico di Milano (PRE25122)*
10:45-11:00	**O3.05** Finite Element Analysis of Mold Geometry Effects on Glass Flow and Stress in Wafer-Level Precision Glass Molding *Christian Strobl, Fraunhofer, DE (PRE25141)*
11:00-11:10	**Discussion**
11:10-11:25	**O3.06** Grinding optical-grade features in glass and silicon for compact vacuum cells *Joel Keen, University of Southampton, UK (PRE25125)*
11:25-11:40	**O3.07** Product-oriented design evaluation of serpentine, sar, and bilayer passive micromixers *Muhammad Muzafar CAE NUST University Pakistan (PRE25135)*
11:40-11:50	**Discussion**
11:50-12:15	**Exhibitor presentations**
12:15-13:15	**Lunch**
13:15-14:00	**Loxham Precision laboratory tour**

14:00-14:30	**Coffee & Networking**
14:30-15:15	**Session 4: Posters** P4.01 Torque testing splined work holders for EV components *Thomas Furness, University of Huddersfield, UK (PRE25109)* P4.02 Additive manufacturing process assessment framework for x-ray computer tomography derived measurement *David Gorman, NPL, UK (PRE25116)* P4.04 Towards a metrologically assisted process for multi-axis machining using a digital twin of the machine tool: a methodological approach *Ermes Xhafa, LNE, FR (PRE25123*) P4.05 Machine Tool Thermal Displacement Error Detection Enabling Design Changes and Active Compensation *Timothy Bartley, Cranfield Precision/Fives UK (PRE25129)* P4.06 Taguchi-Based Evaluation of High-Temperature Tensile Behavior in PEEK–PLA Hybrid Structures Produced via FDM *Ossama Bin Mazhar, NUST, PK (PRE25137)*
Chair:	**Session 5:** Innovations in Manufacturing Process & Thermal Control
15:15-15:30	**O5.01** A new paradigm for real-time machining optimization via an embedded near-zero latency heat flux sensor, *Umer Shaukat, University of Turku, FI (PRE25107)*
15:30-15:45	**O5.02** Low voltage ultra-high resolution electron microscopic analysis of small grain diamond abrasive media, *Marvin Groeb, Kern Microtechnik GmbH (PRE25112)*
15:45-16:00	**O5.03** Investigating the prediction of manufactured part quality using in-process vibration data and neural networks, *Daniel Povey, NPL, UK (PRE25111)*
16:00-16:15	**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	**O5.04** Model-based thermal drift compensation for high-precision hexapod robot actuators *Clément Robert LIRMM, FR (PRE25106)*
09:15-09:30	**O5.05** Experimental investigation of adaptive temperature control for energy efficient precision grinding machines *Sebastian Lang ETH Zurich / inspire AG, CH (PRE25115)*
09:30-09:45	**O5.06** Prediction of cutting force uncertainty characteristics through the integration of logical and numerical processing techniques, *Wencheng Pan, University of Huddersfield (PRE25113)*
09:45-10:00	**Discussion**
10:00-10:15	**Closing remarks and Conference ends**
10:15-10:30	**Coffee**
10:30	**Coaches to Bletchley Park for private guided tours and lunch**