



12th International Conference on Laser Metrology, CMM and Machine Tool Performance Programme

Wednesday 15th March 2017

| Time | | Programme |
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| 08:30 – 09:00 | | Registration and coffee |
| 09:00 – 09:10 | | Welcome: Presentation |
| 09:10 – 09:40 Chair: Liam Blunt | | Meeting Keynote Surface metrology for future manufacturing <i>Prof Xiangqian (Jane) Jiang, University of Huddersfield, UK</i> |
| 09:40 – 10:35 Chair: Andrew Longstaff | 09:40-10:10 10:10-10:35 | Session 1a: Performance Evaluation for Machine Tools & CMMs 1. Session Keynote : Technical challenges behind our XM60 6-d.o.f. calibration system <i>Dr Anas Jarjour, Renishaw Plc</i> 2. Measurement of the effect of the cutting fluid on the thermal response of a five-axis machine tool <i>Mr Pablo Hernandez Becerro, ETH Zurich</i> |
| 10:35 – 10:55 | | Coffee in exhibition area |
| 10:55 – 12:10 Chair: Andrew Longstaff | 10:55-11:20 11:20-11:45 11:45-12:10 | Session 1b: Performance Evaluation for Machine Tools & CMMs 1. Evaluation of automated flexible gauge performance using experimental designs <i>Mr Moschos Papananias, University of Huddersfield</i> 2. Measurement uncertainty associated with the performance of the machine tool under quasi-static loaded test condition <i>Mr Karoly Szipka, KTH Royal Institute of Technology</i> 3. Identification of machine tools linear axes performance using on-machine embedded inertia measurement units <i>Dr Andreas Archenti, KTH Royal Institute of Technology</i> |
| 12:10 – 12:30 | | Machine Tool Standards Update from Wolfgang Knapp |
| 12:30 – 13:30 | | Finger Buffet Lunch |
| 13:30 – 15:00 | 10 mins ea | Commercial Session: attocube, Cranfield Precision, GOM, Heidenhain (GB), Lambda Photometrics, IBS, Sensofar, Mantech Geometrics Ltd, Windsor Scientific |
| 15:00 – 15:15 | | Coffee in exhibition area |
| 15:15 – 15:50 | 15:15-15:22 15:22-15:29 15:29-15:36 15:36-15:43 15:43-15:50 | Poster Session A P1.01 Simultaneous Multi-type Feature Separation for Complex Structured Surface Analysis, <i>Dr Wenhan Zeng, University of Huddersfield</i> P1.02 Evaluation of standard compensation of thermal distortion caused by rotating spindle on volumetric measurement of a floor type machining centre <i>Mr Martin Okénka, RCMT - Research Center of Manufacturing Technology, Czech Technical University in Prague</i> P1.03 Development of a surface acoustic wave sensor based smart cutting tool with application to the fly-cutting process, <i>Dr Chao Wang, The University of Warwick</i> P1.04 Calibration of an interferometric surface measurement system on an ultra-precision turning lathe, <i>Mr Duo Li, University of Huddersfield</i> P1.05 Measurement of spindle error motions by an improved multi-probe method, <i>Mr Fei Ding, University of Strathclyde</i> |



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| 15:50 – 16:05 | | HEIDENHAIN Scholarship Awards in exhibition area |
| 16:05 – 16:55 Chair: Wolfgang Knapp | 16:05-16:30 16:30-16:55 | Session 2: Novel Manufacturing Technologies & Machine Tools 1. Design of a bespoke five-axis CNC machine tool for machining thin-walled cylindrical components with internal concave circular arc surfaces <i>Dr Qunlin Cheng, Brunel University</i> 2. Compensation of dynamic machine tool deflections and geometric tool errors by TNC controller functions <i>Gero Günther, Dr. Johannes Heidenhain GmbH</i> |
| 17:00 – 18:15 | | Tour of Renishaw Innovation Centre |
| 18:30 – 19:00 | | Coach to Eastwood Park |
| 19:00 – 21:15 | | Dinner at Eastwood Park |

Thursday 16th March 2017

| Time | | Programme |
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| 08:40 – 09:00 | | Coffee |
| 09:00 – 09:30 Chair: Liam Blunt | | Meeting Keynote Thermal error compensation of machine tools <i>Dr Josef MAYR, IWF, ETH Zurich, CH</i> |
| 09:30 – 10:50 Chair: Liam Blunt | 09:30-10:00 10:00-10:25 10:25-10:50 | Session 3a: New Developments in Measurement Techniques 1. Session Keynote : A novel coordinate measurement system based on frequency scanning interferometry and multilateration <i>Ben Hughes, National Physical Laboratory (NPL)</i> 2. Displacement measurement using an I2 frequency stabilized laser diode based on sinusoidal phase/frequency modulation, <i>Dr Masato Aketagawa, Nagaoka University of Technology</i> 3. Thermo-elastic deformation of rotary axes <i>Mr Robert Spierling, Laboratory of Machine Tools and Production Engineering (WZL)</i> |
| 10:50 – 11:15 | | Coffee in exhibition area |
| 11:15 – 11:50 | 11:15-11:22 11:22-11:29 11:29-11:36 11:36-11:43 11:43-11:50 | Poster Session B P1.06 An investigation on the profile accuracy control in abrasive flow machining: CFD simulation and experiment case study, <i>Mr Yizhi Shao, Brunel University</i> P1.07 An experimental-based investigation on micro milling of micro-featured dies/moulds in hard-steel, <i>Mr Liang Zhao, Harbin Institute of Technology</i> P1.08 Inter-comparison on multi-feature bar calibration for determining machine-tool geometric errors, <i>Dr Fabien Viprey, ENS Paris-Saclay</i> P1.09 Optical difference engine for defect inspection in highly-parallel manufacturing processes, <i>Dr Xiaobing Feng, The University of Nottingham</i> P1.10 Confocal fusion: towards the universal optical 3D metrology technology <i>Mr Carlos Bermudez, Sensofar Tech SL</i> |
| 12:00 – 13:00 | | Finger Buffet Lunch in exhibition area |



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| <p>13:00 – 14:15 Chair: Andreas Archenti</p> | <p>13:00-13:25 13:25-13:50 13:50-14:15</p> | <p>Session 3b: New Developments in Measurement Techniques</p> <ol style="list-style-type: none"> 1. Analysis of spatial and temporal dependencies of the TCP-dislocation measurement for the assessment of the thermo-elastic behavior of 3-axis machine tools <i>Mr Filippos Tzanetos, Fraunhofer IPT</i> 2. Uncertainties in Dimensional Measurements due to Thermal Expansion <i>Dr Jody Muelaner, The University of Bath</i> 3. Precise measurement of large scale surfaces with micro-topographies without overlapping fields of view by white light interferometry <i>Ms Yiting Wu, Institute of Manufacturing Metrology, Friedrich-Alexander-Universität Erlangen-Nürnberg</i> |
| <p>14:15 – 14:30</p> | | <p>Coffee in exhibition area</p> |
| <p>14:30 – 15:45 Chair: Nick Weston</p> | <p>14:30-14:55 14:55-15:20 15:20-15:45</p> | <p>Session 3c: New Developments in Measurement Techniques</p> <ol style="list-style-type: none"> 1. Calibration of five-axis machine tool using r-test procedure <i>Mr Tae Hun Lee, Fraunhofer Institute for Production Technology IPT</i> 2. A Unified Approach to Uncertainty for Quality Improvement <i>Dr Jody Muelaner, The University of Bath</i> 3. Areal Surface Measurement Using Multidirectional Laser Line Scanning <i>Mr Kwame Akowua, University of Huddersfield</i> |
| <p>15:45 – 16:00</p> | | <p>Closing remarks: Prof Liam Blunt, University of Huddersfield</p> |

Session keynote presentation times: 25 minutes + 5 minutes for questions

Oral presentations: 20 minutes + 5 minutes for questions

Commercial presentations: 10 minutes each

Poster pitch presentations in front of their poster: 5 minutes + 2 minutes for questions

All presentations will take place in the auditorium (apart from the poster presentations which will take place in front of their poster).

Please ensure all presentations should be in **PowerPoint format** only and all sound and video must be embedded into the presentations and brought in on a USB to be loaded onto the integrated AV equipment on-site. No other formats are supported and no laptops are permitted to be plugged into their equipment.