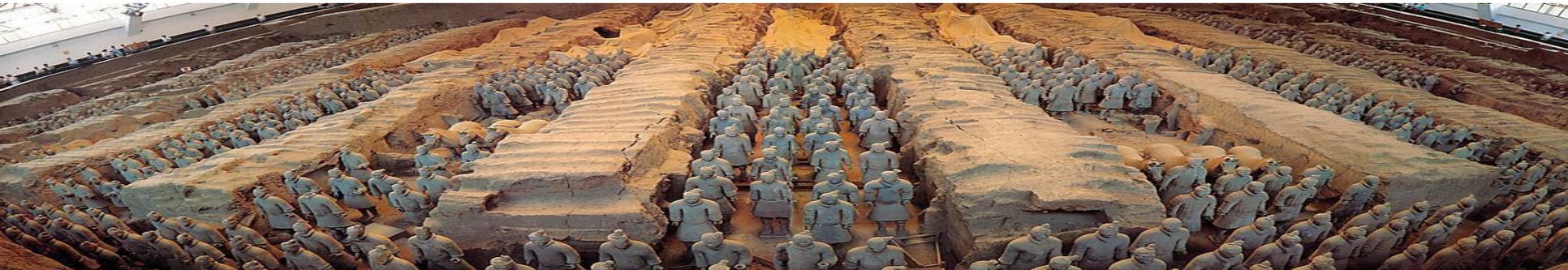


**The 13th International Symposium
on Measurement Technology and Intelligent
Instruments (ISMTEI 2017)
Summary Report**

**Xi'an Jiaotong University
September 2019**



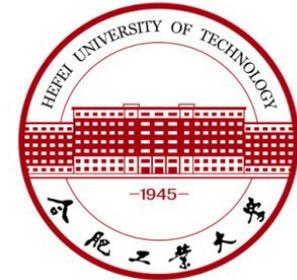
The 13th International Symposium on Measurement Technology and Intelligent Instruments - ISMTII-2017

Xi'an, Shaanxi, China

22-25 Sept, 2017

Organized by:

Xi'an Jiaotong University Harbin Institute of Technology Hefei University of Technology



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National Natural Science Foundation of China (NSFC)

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Mechanical Engineering Society of Shaanxi Province

Shaanxi Province Mechanical Engineering Society

The 13th International Symposium on Measurement Technology and Intelligent Instruments - ISMTII-2017

Xi'an, Shaanxi, China

22-25 Sept, 2017

Symposium Scope (includes but not restricted to)

- **Micro and Nano Metrology**
- **In-process and Inline Metrology**
- **Management of Measurement Processes**
- **Optical Metrology**
- **Surface Metrology**
- **Automated Optical Inspection (AOI)**
- **Machine Vision and Image Processing**
- **Macro Metrology**
- **Intelligent Instruments for Automation**
- **Sensors and Actuators**
- **Calibration and Machine Tool Performance**
- **Material Characterization**
- **Education and Training in Metrology**

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Registration Fees

Registration fee includes: Attendance at Technical Program, Welcome Party, Lunches, Dinners, Coffee breaks, Banquet, Technical Visits, Excursion, Abstracts Volume, Disc with Proceedings.

Participants: 500USD

Students: 300USD

Accompanying Person: 200USD

Publications

All accepted papers will be published in SPIE Proceedings. Some selected papers after revision were proposed for publishing in “Measurement Science and Technology”.

Technical Sessions and Round Tables

Include Keynote Speeches and Session Invited Speeches, Oral and Poster presentations. Discussions at the Round tables were organized.

Technical Tours

State Key Laboratory of Mechanical Manufacturing Systems Engineering

Social program

Eastern line: Huaqing Hot Springs, Terra Cotta Warriors and Horses

Western line: Qian Tomb and Famen Temple

Important Dates

Submission of abstracts: January 21, 2016

Notification of abstract acceptance: February 28, 2016

Submission of manuscripts of Full Papers: April 30, 2016

Notification of Full Paper acceptance: June 15, 2016

Paper received

- **Abstracts received: 377**
- **Abstracts accepted: 231**
- **Full paper received: 184**
- **Full paper accepted: 184**
- **Oral presentation: 96**
- **Poster presentation: 88**

Measurement Science and Technology (MST)

Advanced Manufacturing Technology (JAMT)

Surface Topography: Metrology and Properties

Nanomanufacturing and Nanometrology (NMM)

Micromachines

International Journal of Nanomanufacturing

Schedule

Day 2, Sep 23	Day 3, Sep 24	Day 4, Sep 25
Session 1	Session 7	Session 16
Optical Metrology (I)	Optical Metrology (III)	Optical Metrology (VI)
Session 2	Session 8	Session 17
Sensors and Actuators (I)	Sensors and Actuators (III)	Calibration and Machine Tool Performance (II)
Session 3	Session 9	Session 18
Machine Vision and Image Processing (I)	Machine Vision and Image Processing (III)	Micro and Nano Metrology (III) & Surface Metrology (I)
Session 4	Session 10	Session 19
Optical Metrology (II)	Optical Metrology (IV)	Optical Metrology (VI) & In-Process and Online Metrology (I)
Session 5	Session 11	Session 20
Sensors and Actuators (II)	Sensors and Actuators (IV)	Intelligent Instruments for Automation (I)
Session 6	Session 12	Session 21
Machine Vision and Image Processing (II)	Micro and Nano Metrology (I)	Surface Metrology (II)
	Session 13	Session 22
	Optical Metrology (V)	In-Process and Online (II)
	Session 14	Session 23
	Calibration and Machine Tool Performance(I)& Sensors and Actuators (V)	Intelligent Instruments for Automation (II)
	Session 15	Session 24
	Micro and Nano Metrology (II)	Material Characterization & Management of Measurement Processes

Keynote speech

Day 2, Sep 23	Day 3, Sep 24	Day 4, Sep 25
Plenary Keynote Session 1 (Banquet Hall) Prof. Dame Jane Jiang, University of Huddersfield	Plenary Keynote Session 5 (Banquet Hall) Professor Harald Bosse, Physical technical federal institute	Plenary Keynote Session 8 (Banquet Hall) Prof. Seung-Woo Kim, Korea Advanced Institute of Science & Technology
Plenary Keynote Session 2 (Banquet Hall) Prof. Hans Nørgaard Hansen, Technical University of Denmark	Plenary Keynote Session 6 (Banquet Hall) Prof. Martin Booth, University of Oxford	Plenary Keynote Session 9 (Banquet Hall) Prof. Liang-Chia Chen, National Taiwan University
Plenary Keynote Session 3 (Banquet Hall) Prof. Wei Gao, Tohoku University	Plenary Keynote Session 7 (Banquet Hall) Prof. Richard Leach, University of Nottingham	
Plenary Keynote Session 4 (Banquet Hall) Prof. Shulian Zhang, Tsinghua University		

Invited talk

Day 2, Sep 23	Day 3, Sep 24	Day 4, Sep 25
Invited Talk 1 (International Hall) Prof. Benny Chi-Fai Cheung, Hong Kong Polytechnic University	Invited Talk 4 (International Hall) Prof. Liandong Yu, Hefei University of Technology	Invited Talk 7 (International Hall) Dr. Fang Cheng, Advanced Remanufacturing and Technology Centre
Invited Talk 2 (Room No.7) Prof. Satoru Takahashi, University of Tokyo	Invited Talk 5 (Room No.7) Dr. J.R. Lin , Tianjin University	Invited Talk 8 (Room No.7) Dr. Hao. Jiang, Huazhong University of Science and Technology
Invited Talk 3 (Room No.10) Prof. Ahmed Abou-Zeid, Physical technical federal institute	Invited Talk 6 (Room No.10) Dr. Lina Fei, Zeiss Industrial Metrology	Invited Talk 9 (Room No.10) Dr. Ian Forbes, Institute of Physics Publishing

Oral presentation

Day 2, Sep 23

	International Hall	Conference room No.7	Conference room No.7
14:30-15:50	<p>Session 1 Optical Metrology (I) (Paper ID: 44, 46, 48, 53) Chairs: Prof. Haihua Cui, Prof. Liandong Yu</p>	<p>Session 2 Sensors and Actuators (I) (Paper ID: 18, 76, 87, 114) Chairs: Prof. Lingbao Kong, Dr. Mingjun Ren</p>	<p>Session 3 Machine Vision and Image Processing (I) (Paper ID: 16, 33, 61, 66) Chairs: Prof. Xiangchao Zhang, Dr. Jiarui Lin</p>
16:10-17:30	<p>Session 4 Optical Metrology (II) (Paper ID: 65, 70, 72, 80) Chairs: Prof. Haihua Cui, Prof. Liandong Yu</p>	<p>Session 5 Sensors and Actuators (II) (Paper ID: 140, 172, 185, 224) Chairs: Prof. Lingbao Kong, Dr. Mingjun Ren</p>	<p>Session 6 Machine Vision and Image Processing (II) (Paper ID: 88, 118, 138, 201) Chairs: Prof. Xiangchao Zhang, Dr. Jiarui Lin</p>

Oral presentation

Day 3, Sep 24

10:35-11:50	Session 7 Optical Metrology (III) (Paper ID:82, 83, 101, 102)	Session 8 Sensors and Actuators(III) (Paper ID: 225, 251, 252, 253)	Session 9 Machine Vision and Image Processing(III) (Paper ID:255, 307, 316, 339)
14:30-15:50	Session 10 Optical Metrology (IV) (Paper ID: 107, 110, 128, 137)	Session 11 Sensors and Actuators(IV) (Paper ID: 260, 250, 263, 265)	Session 12 Micro and Nano Metrology(I) (Paper ID: 23, 84, 91, 94)
16:10-17:30	Session 13 Optical Metrology (V) (Paper ID: 175, 194, 198, 207)	Session 14 Sensors and Actuators(V) & Calibration and Machine Tool Performance(I) (Paper ID: 268, 328, 50, 149)	Session 15 Micro and Nano Metrology(II) (Paper ID: 155, 159, 165, 196)

Day 4, Sep 25

10:20-11:50	Session 16 Optical Metrology (VI) (Paper ID:216, 233, 243, 282)	Session 17 Calibration and Machine Tool Performance(II) (Paper ID: 150, 377,199, 240)	Session 18 Micro and Nano Metrology(III) & Surface Metrology(I) (Paper ID: 200, 259, 63, 113)
15:00-16:20	Session 19 Optical Metrology (VII) & In- Process and Online Metrology(I) (Paper ID: 288, 340, 17, 181)	Session 20 Intelligent Instruments for Automation(I) (Paper ID: 85, 86, 109, 152)	Session 21 Surface Metrology(II) (Paper ID: 133, 285, 297, 338)
16:40-18:00	Session 22 In-Process and Online Metrology(II) (Paper ID: 206,222,231,300)	Session 23 Intelligent Instruments for Automation(II) & Management of Measurement Processes (Paper ID: 168, 213, 275, 210)	Session 24 Surface Metrology(III) & Material Characterization (Paper ID: 345, 31, 281, 283)

Poster presentation

Day 2, 23 September

17:30-18:30

Poster Session 1 (Jindian Hall)

Paper ID: 79, 237, 238, 183, 197, 209, 217, 229, 20, 34, 54, 60, 129, 21, 81, 99, 141, 40, 51, 97, 115, 116, 130, 135, 226, 236, 239, 122, 306

Day 3, 24 September

17:30-18:30

Poster Session 2 (Jindian Hall)

Paper ID: 279, 289, 308, 205, 295, 241, 266, 273, 67, 154, 164, 89, 52, 142, 171, 232, 247, 151, 158, 166, 177, 186, 203, 261, 262, 264, 271, 315, 333, 353

Day 5, 25 September

18:00-19:00

Poster Session 3 (Jindian Hall)

Paper ID: 326, 358, 337, 280, 376, 364, 375, 96, 117, 119, 256, 335, 351, 356, 234, 248, 272, 284, 322, 277, 299, 352, 355, 363, 367, 368, 370, 189, 93

Life contribution awards



Professor Zhuoxian Zhao
Xi'an Jiaotong University



Professor Shulian Zhang
Tsinghua University

Best paper and best poster awards

Best paper awards

- Paper No. 17: In-process measurement on the thickness of photosensitive resin in evanescent wave-based nano-stereolithography
- Paper No. 84: Non-contact detection of surface defects by using a micro thermal sensor
- Paper No. 102: High-precision lateral distortion correction in 2D and 3D optical imaging systems using an arbitrary surface
- Paper No. 128: Intracavity laser spectroscopy of waveguide structures
- Paper No. 133: A method for inspecting double-sided high-sloped structured surfaces based on dual-probe wavelength scanning interferometer
- Paper No. 138: Improvement of high temperature deformation measurement accuracy based on image restoration method
- Paper No. 181: Use of multiple air beams for in-process form error measurement
- Paper No. 194: Innovative full-field chromatic confocal microscopy using multispectral sensors
- Paper No. 207: Recent development of next generation of laser interferometer at harbin institute of technology
- Paper No. 210: Whole gear outline scanning measurement of internal gear by using CNC gear measuring machine
- Paper No. 252: Voice coil based actuator with scanning range of 25 mm using built-in interferometric sub-nanometre position feedback
- Paper No. 260: Novel annular-circular coupled piezoelectric micromachined ultrasonic transducers
- Paper No. 275: The method for laser drift restraining based on mirror control
- Paper No. 345: 3-D surface profiling of rough surfaces by coherence scanning interferometry using femtosecond pulsed laser

Best poster awards

- Paper No. 183: A New In-Process Optical Method for Surface Form Profile Measurement in Precision Machining

Papers transferred to *MST*

10 papers accepted for the Special Issue

	Title
1	An ultra-precision tool nanoindentation instrument for replication of single point diamond tool cutting edges
2	A new capacitive long-range displacement nanometer sensor with differential sensing structure based on time-grating
3	Modified Linnik microscopic interferometry for quantitative depth evaluation of diffraction-limited microgroove
4	Correction of phase-shifting error in wavelength scanning digital holographic microscopy
5	Use of dual coolant displacing media for in-process optical measurement of form profiles
6	Measurement configuration optimization for dynamic metrology using Stokes polarimetry
7	Intelligent measurement and compensation of linear motor force ripple: a projection-based learning approach in the presence of noise
8	Measurement method of rotation angle and clearance in intelligent spherical hinge
9	Improvement of high-temperature deformation measurement accuracy based on image restoration method
10	The NIM continuous full circle angle standard

Papers transferred to *JAMT*

4 papers accepted for the Special Issue

	Title
1	A calibration method for non-overlapping cameras based on mirrored absolute phase target
2	The influence of fractal dimension in the micro contact of three-dimensional elastic-plastic fractal surfaces
3	A method for inspecting near-right-angle V-groove surfaces based on dual-probe wavelength scanning interferometry
4	A new method to produce optical nano-needle

Papers transferred to *Micromachines*

10 papers transferred for the Special Issue

	Title
1	Design of Optical Detection System for Centrifugal Microfluidic Chip
2	Fabrication and Testing of Wireless Passive and Thin Film Temperature Sensor
3	Bio-electronic System for Megapolis Water Supply Monitoring
4	An Temperature Compensation System for Quartz Differential Resonant Accelerometer Using FPGA and SOPC
5	A novel calibration method for NIR MOEMS spectrometer with one single detector
6	Development of a Cutting Force Sensor Based on MEMS strain gauge
7	Research of a novel ultra-high pressure sensor with high-temperature resistance
8	Theoretical analysis of capacitive sensor based micro-angle measurement unit
9	The Calibration and Analysis of Inertia Sensors for Unmanned Aerial Vehicle
10	Geometrical Deviation Induced Measurement Error of Freeform Surfaces for CMM

Papers transferred to *NMM*

11 papers transferred to the Special Issue

	Title
1	Super-resolution Scanning Microscopy with Virtually Structured Illumination
2	Experimental Research on Online Dynamic Balancing System of Grinding Machine
3	A multi-scale seed point selection algorithm for registration
4	Study on adaptive Kalman filtering for laser Doppler velocimetry
5	Design, Simulation and Fabrication of Micro Gas Chromatography Column for Breath
6	In-Situ Geometric Parameters Measurement for Thin-Wall Rotary Body Based on Doub
7	A New MOV Online Monitoring Device in Series Compensation Capacitor System
8	Numerical investigation on refractive index compensation performance of three-color method
9	Motion interaction of 2-DOF linear inertial drive mechanism with single friction
10	Non-focused Common-path Laser Rotary Encoder
11	Integrated Optomechanical Design and Analysis of a Korsch-type Three Mirror Anastigmat Telescope Mirror Anastigmat Telescope

Thank You!