

Room 1

Keynote session 1 (Advanced manufacturing I)

KS1-1 Keynote Speaker: Prof. Bernhard Karpuschewski
Application of coarse-grained grinding wheels for precision grinding of glassy carbon (OS06-04)
Bernhard Karpuschewski, Carsten Heinzel, Oltmann Riemer, Kai Rickens and Barnabas Adam

KS1-2 Keynote Speaker: Prof. Hitomi Yamaguchi
Polishing of Hardened Steel Components using Magnetic Abrasive Finishing (OS20-20)
Hiroyuki Matsumura, Julian Long and Hitomi Yamaguchi

KS1-3 Keynote Speaker: Prof. Erhan Budak
Experimentally backed simulation of textured CBN grinding wheels for enhanced performance (OS06-18)
Vahid Mousavi, Suzan Behrouzbaraghi and Erhan Budak

Feature session 1 (Laser machining)

FS1-1 Feature Speaker: Dr. Thomas Liebrich
Laser machining of optical elements (GS06-01)
Niklas Sass, Thomas Liebrich, Markus Stenzel, Rodolphe Catrin, Kabil Ramadani, David Bischof, Sven Lämmle and Oliver Fähnle

FS1-2 Feature Speaker: Dr. Reina Yoshizaki
Formation mechanism of Optical Waveguide in α -Quartz by Ultrashort Pulse Laser (OS10-03)
Reina Yoshizaki, Tomohiro Fukui, Yusuke Ito, Junya Hattori and Naohiko Sugita

FS1-3 Feature Speaker: Dr. Chieko Kuji
Notch effect in blanking of local heating with ultrashort pulsed laser for Fe-based amorphous alloys and its influence on soft magnetic properties (OS09-16)
Chieko Kuji, Tatsuya Fujii, Tsunehisa Suzuki and Masayoshi Mizutani

Feature session 6 (Additive manufacturing)

FS6-1 Feature Speaker: Dr. Atsushi Ezura
Laser-induced Wet Surface Treatment using Aluminum Nitrate Aqueous Solution for Improvement of Wear Resistance of Titanium Alloy (OS10-08)
Atsushi Ezura, Kazutoshi Katahira and Jun Komotori

FS6-2 Feature Speaker: Dr. Yunlong Tang
Additive Manufacturing of Multi-Scale Porous Gyroid Infill Structures with Tailored Hardness (OS01-05)
Yunlong Tang, Zifan Wang, Christopher Sutanto and Xinni Tian

FS6-3 Feature Speaker: Mr. Julien Dipéri
How does additive manufacturing combine with bio-inspiration for design innovation (GS02-01)
Julien Dipéri, David Hernandez-Aristizabal, Santiago Arroyave-Tobon and Jean-Marc Linares

FS6-4 Feature Speaker: Dr. Fatma Nur Dephoylu
A new porous biomedical implant production process development for Laser Powder Bed Fusion (L-PBF) Technology (OS23-09)
Fatma Nur Dephoylu, Evren Yasa, Özgür Poyraz and Feza Korkusuz

Room 2

Keynote session 2 (Advanced manufacturing II)

KS2-1 Keynote Speaker: Prof. Lihui Wang
Latest Advancement on Human-Robot Collaboration in Manufacturing (GS10-15)
Lihui Wang

KS2-2 Keynote Speaker: Prof. Xichun Luo
Digital twin-driven ultra precision manufacturing system (GS14-05)
Xichun Luo

KS2-3 Keynote Speaker: Prof. Samanta Piano
Enhancing in-process monitoring of additive manufacturing through virtual fringe-projection simulations (GS11-27)
Tibebe Yalew, Xiangjun Kong, Qingkang Bao, Gerardo Adesso and Samanta Piano

Feature session 2 (Ultraprecision/ Semiconductor manufacturing)

FS2-1 Feature Speaker: Dr. Jufan Zhang
Atomic and Close-to-atomic Scale Manufacturing of Large-scale Solid-state Nanopore Array (GS08-03)
Jufan Zhang, Hongshuai Liu, Boyuan Pang and Fengzhou Fang

FS2-2 Feature Speaker: Prof. Zhiyu Zhang
Fabrication of membrane optics by diamond turning combined with spin molding (OS07-05)
Zhiyu Zhang, Ruoqui Wang, Chengli Guo, Xuejun Zhang and Jiwang Yan

FS2-3 Feature Speaker: Prof. Hao Wang
Development of Augmented Ultraprecision Machining Technology (OS05-25)
Hao Wang

Feature session 7 (Precision machining)

FS7-1 Feature Speaker: Prof. Chao-Ching Ho
Enhancing Dataset Variability in Semiconductor Manufacturing through Domain Adaptation and Advanced Simulation Techniques (GS17-01)
Chong-Han Hsu, Eugene Su, Bo-En Tsai and Chao-Ching Ho

FS7-2 Feature Speaker: Dr. Bertolini Rachele
Enhanced Formability and Martensite Transformation in AISI 316 Stainless Steel at Sub-Zero Temperatures (GS03-02)
Bertolini Rachele, Simonetto Enrico, Savio Enrico, Ghiotti Andrea and Bruschi Stefania

FS7-3 Feature Speaker: Prof. Sangkee Min
Investigating the effects of crystallography on subsurface damage during ultra-precision machining of sapphire (OS07-10)
Aditya nagaraj, Suk Bum Kwon, Dalei xi, Yiyang Du, Woo Kyun Kim and Sangkee Min

FS7-4 Feature Speaker: Dr. Zekai Murat Kilic
Analytical cutting force prediction of axial ultrasonic vibrations-assisted milling of difficult-to-cut materials (OS05-32)
Wang Jiacheng, Namlu Ramazan Hakki, Kilic Sadik Engin, Mativenga Paul and Kilic Zekai Murat

Room 3

Keynote session 3 (Machine learning/Systems)

KS3-1 Keynote Speaker: Prof. Robert Gao

Deformation prediction in English wheeling through physics-informed machine learning (GS15-12)

Clayton Cooper, Jianjing Zhang and Robert X. Gao

KS3-2 Keynote Speaker: Dr. Daniel Meyer

Precision in Microtexturing: A Machine Learning Approach to Optimize Surface Parameters and Milling Techniques for Enhanced Topography (GS15-07)

Pooria A. Farahani, Oltmann Riemer and Daniel Meyer

KS3-3 Keynote Speaker: Prof. Jean-Marc Linares

How can nature help us find mechanical solutions: Sustainable, resilient and frugal (GS02-06)

Jean-Marc Linares

Feature session 3 (Machine learning/Systems)

FS3-1 Feature Speaker: Prof. Burak Sencer

Accurate prediction of 5-axis machining cycle times with machine learning (GS15-02)

Shih-Hsuan Chien, Shingo Tajima and Burak Sencer

FS3-2 Feature Speaker: Prof. Peng Wang

Efficient and Generalizable Machine Learning for Inline Defect Detection in Battery Laser Welding (GS15-08)

Xijia Zhao, Joseph Kershaw, Masoud Pour, Junjie Ma, Hassan Ghassemi-Armaki, Blair Calson and Peng Wang

FS3-3 Feature Speaker: Prof. Xi Vincent Wang

Design of an RFID-based part identification approach: a case study in an automotive manufacturing plant (OS01-02)

Xi Vincent Wang and Felix Buchner

Feature session 8 (Optical metrology)

FS8-1 Feature Speaker: Prof. Koji Iwamura

Verification of Effectiveness of Demand Forecast for Plant Factories (OS03-03)

Koji Iwamura, Nobuhiro Sugimura, Yasuhiro Kinoshita and Junichi Yamaguchi

FS8-2 Feature Speaker: Dr. Ralf D. Geckeler

State of the art and novel approaches in angle metrology at the Physikalisch-Technische Bundesanstalt (GS11-06)

Ralf D. Geckeler, Matthias Schumann, Andreas Just and Michael Krause

FS8-3 Feature Speaker: Prof. Feng Gao

Error analysis for near optical coaxial phase measuring deflectometry with refraction error model (GS11-05)

Yanling Li, Feng Gao, Yongjia Xu, Zonghua Zhang and Xiangqian Jiang

FS8-4 Feature Speaker: Prof. Ryo Sato

Second harmonic confocal probe with a mode-locked femtosecond laser (GS11-03)

Ryo Sato, Hiraku Matsukuma and Wei Gao

Room 4

Keynote session 4 (Measurement technologies)

KS4-1 Keynote Speaker: Prof. José A. Yagüe-Fabra
Influence of relative intensity in metal-polymer assembly evaluation by X-ray computed tomography (GS12-06)
Daniel Gallardo, Lucía Díaz, José A. Albajez and José A. Yagüe-Fabra

KS4-2 Keynote Speaker: Prof. Giovanni Moroni
Comparative analysis of surface determination techniques in coordinate metrology with X-ray computed tomography (OS19-07)
Huan Shao, Federico Pirillo, Stefano Petrò and Giovanni Moroni

KS4-3 Keynote Speaker: Dr. Gaoliang Dai
Top-down and bottom-up traceability approaches for applied nanodimensional metrology (OS15-06)
Gaoliang Dai and Jens Fluegge

Feature session 4 (Nano-scale measurements and calibrations)

FS4-1 Feature Speaker: Dr. Jonghan Jin
Multi-wavelength interferometer for measuring absolute distances using numerous frequency modes of the electro-optic comb (OS15-01)
Jonghan Jin, Jungjae Park and Yoon-Soo Jang

FS4-2 Feature Speaker: Prof. Xin Xiong
Research on conjugate differential interferometric self-calibration method for large-scale planar variable-line-spacing gratings (OS15-04)
Xin Xiong, Chenguang Yin, Ziran Chen, Xiaokang Liu and Wei Gao

FS4-3 Feature Speaker: Dr. Giacomo Maculotti
Towards Nanoindentation Metrological Digital Twin: traceable automated procedure for out-of-control measurements identification (OS15-05)
Giacomo Maculotti, Rachele Bertolini, Gianfranco Genta, Lorenzo Giorio, Anna Bottin, Enrico Savio and Maurizio Galetto

Feature session 9 (Dimensional /Machine tool metrology)

FS9-1 Feature Speaker: Dr. Ankit Kumar
Enhancing Wear Resistance of IN 625 Alloy Through Parameter Optimization in Wire Arc Additive Manufacturing (OS20-19)
Ankit Kumar, Mayank Arun Sontakke, Gurminder Singh and Rahul S. Mulik

FS9-2 Feature Speaker: Dr. Osamu Sato
Optimization of multiple-orientation dimensional measurement on X-ray CT (GS12-08)
Osamu Sato, Mari Watanabe, Kazuya Matsuzaki, Mariko Kajima, Souichi Telada, Tsukasa Watanabe, Youichi Bitou and Toshiyuki Takatsuji

FS9-3 Feature Speaker: Prof. Charyar Mehdi-Souzani
Aggregation-value-based active sampling method for multi-sensor freeform surfaces measurement and reconstruction (GS12-13)
Gengxiang Chen, Yingguang Li, Charyar Mehdi-Souzani and Xu Liu

FS9-4 Feature Speaker: Dr. Yindi Cai
Volumetric error modeling and compensation for nine-axis and five-linkage turn-milling compound machine tool (GS13-02)
Yindi Cai, Daoyuan Dai, Bo Wen, Zihui Zhu, Xianglong Zhu, Zhigang Dong and Renke Kang

Room 5

Keynote session 5 (Measurement/Control)

KS5-1 Keynote Speaker: Prof. Enrico Savio

Integrated metrology in manufacturing: connecting digital twins and applications in metal forming (GS12-14)

Enrico Savio

KS5-2 Keynote Speaker: Prof. Benny C.F. Cheung

Advances in Autostereoscopic Freeform Surface Metrology (GS04-01)

Benny C.F. Cheung

KS5-3 Keynote Speaker: Dr. Jaspreet S. Dhupia

Modelling and control of the occlusal force for simulating voluntary chewing by a robot (OS13-06)

Bangxiang Chen, Jaspreet S. Dhupia and Weiliang Xu

Feature session 5 (Surface)

FS5-1 Feature Speaker: Dr. Supat leamsupapong

Role of surface finish on corrosion properties of dissimilar welding of stainless steels (GS05-03)

Supat leamsupapong, Palita Rangsi, Teerapat Bunnarungsi, Noparat Kanjanaprayut and Siriporn Daopiset

FS5-2 Feature Speaker: Dr. Peerapong Kasuriya

Investigation of surface characteristics of mirror-finished surfaces using polycrystalline sintered diamond ball end mill (OS08-03)

Peerapong Kasuriya, Takeshi Watanabe, Takashi Goto and Masahiko Jin

FS5-3 Feature Speaker: Dr. Chunjin Wang

Fluid jet polishing of functional structured surfaces (OS08-21)

Chunjin Wang, Zili Zhang and Benny C. F. Cheung

Feature session 10 (Measurement/Control)

FS10-1 Feature Speaker: Dr. Xiaohua Liu

Sol Gel Glass Micro and Metasurface Fabrication (OS21-17)

Xiaohua Liu, Xiaolin Li, Tiantong Chen, Muye Niu, Weinan Xu, Shih-Chi Chen and Allen Y Yi

FS10-2 Feature Speaker: Prof. Masanori Kunieda

Measurement of discharge reaction force acting on wire electrode in wire electrical discharge machining (GS05-01)

Wenting Gu, Masanori Kunieda and Wansheng Zhao

FS10-3 Feature Speaker: Dr. Wijayanti Dwi Astuti

Theoretical Inquiry of Type II SHG Phase Matching Angle of LBO Crystal for Small Angle Detection (OS15-32)

Wijayanti Dwi Astuti, Prastowo Murti and Wei Gao

FS10-4 Feature Speaker: Dr. Keifei Wen

Kinematically Redundant (6+3)-DOF Hybrid Parallel Robots with Very Large Rotational Workspace (GS10-14)

Keifei Wen