ICPE2024 Technical Program-October 24, 2024

08:30-09:20	**Registration 08:30-17:00 (Building C01, School of Engineering)**		**Registration 08:30-17:00 (Building C01, School of Engineering)**		
09:20-09:40	**Opening Ceremony (Room 1)**	Room 2 will be used as the Satellite Room of Opening Ceremony & Plenary Sssion 1 when Room 1 is over capacity.	**Opening Ceremony (Room 1)**		
Chair	Plenary Chair: Fengzhou Fang				
09:40-10:25	**Plenary session 1 (Room 1)** **Plenary paper speaker: Prof. Andreas Fischer** **Optical precision metrology for the production of microstructures** **Andreas Fischer and Andreas Tausendfreund**		**Plenary session 1 (Room 1)**		
10:25-10:55	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**
	Keynote session 1 (Advanced manufacturing I)	**Keynote session 2 (Advanced manufacturing II)**	**Keynote session 3 (Machine learning/Systems)**	**Keynote session 4 (Measurment technologies)**	**Keynote session 5 (Measurement/Control)**
Chair	Chair: Masanori Kunieda	Chair: Daisuke Kono	Chair: Jiwang Yan	Chair: Liang-Chia Chen	Chair: Yasuhiro Takaya
10:55-11:25	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	KS2-1 **Keynote Speaker: Prof. Lihui Wang** Latest Advancement on Human-Robot Collaboration in Manufacturing (GS10-15) Lihui Wang	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	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	KS5-1 **Keynote Speaker: Prof. Enrico Savio** Integrated metrology in manufacturing: connecting digital twins and applications in metal forming (GS12-14) Enrico Savio
11:25-11:55	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	KS2-2 **Keynote Speaker:Prof. Xichun Luo** Digital twin-driven ultra precision manufacturing system (GS14-05) Xichun Luo	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	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	KS5-2 **Keynote Speaker: Prof. Benny C.F. Cheung** Advances in Autostereoscopic Freeform Surface Metrology (GS04-01) Benny C.F. Cheung
11:55-12:25	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	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	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	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	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
12:30-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		
	Feature session 1 (Laser machining)	**Feature session 2 (Ultraprecision/ Semiconductor manufacturing)**	**Feature session 3 (Machine learning/Systems)**	**Feature session 4 (Nano-scale measurements and calibrations)**	**Feature session 5 (Surface)**
Chair	Chair: Allen Yi	Chair: Sandy Suet To	Chair: Jean-Marc Linares	Chair: José A. Yagüe-Fabra	Chair: Benny C.F. Cheung
13:50-14:15	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 Lämmler and Oliver Fähnle	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	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	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	FS5-1 **Feature Speaker: Dr. Supat Ieamsupapong** Role of surface finish on corrosion properties of dissimilar welding of stainless steels (GS05-03) Supat Ieamsupapong, Palita Rangsri, Teerapat Bunnarungsi, Noparat Kanjanaprayut and Siriporn Daopiset
14:15-14:40	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	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	FS3-2 **Feature Speaker: Prof. Peng Wang** Efficient and Generlizable 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	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	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
14:40-15:05	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 Fuiji, Tsunehisa Suzuki and Masayoshi Mizutani	FS2-3 **Feature Speaker: Prof. Hao Wang** Development of Augmented Ultraprecision Machining Technology (OS05-25) Hao 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	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	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
15:05-15:35	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Feature session 6 (Additive manufacturing)	**Feature session 7 (Precision machining)**	**Feature session 8 (Optical metrology)**	**Feature session 9 (Dimensional /Machine tool metrology)**	**Feature session 10 (Measurement/Control)**
Chair	Chair: Hitomi Yamaguchi	Chair: Samanta Piano	Chair: Robert Gao	Chair: Giovanni Moroni	Chair: Enrico Savio
15:35-16:00	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	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	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	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	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
16:00-16:25	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	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	FS8-2 **Feature Speaker: Dr. Ralf D. Geckeler** State of the art and novel approaches in angle metrology at the Physikalisch-Technische Bun-desanstalt (GS11-06) Ralf D. Geckeler, Matthias Schumann, Andreas Just and Michael Krause	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	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
16:25-16:50	FS6-3 **Feature Speaker: Mr. Julien Diperi** How does additive manufacturing combine with bio-inspiration for design innovation (GS02-01) Julien Diperi, David Hernandez-Aristizabal, Santiago Arroyave-Tobon and Jean-Marc Linares	FS7-3 **Feature Speaker: Prof. Sangkee Min** Invesigating the effects of crystallography on subsurface damege during ultra-precision machining of sapphire (OS07-10) Aditya nagaraj, Suk Bum Kwon, Dalei xi, Yiyang Du, Woo Kyun Kim and Sangkee Min	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	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	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
16:50-17:15	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	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	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	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	FS10-4 **Feature Speaker: Dr. Kefei Wen** Kinematically Redundant (6+3)-DOF Hybrid Parallel Robots with Very Large Rotational Workspace (GS10-14) Keifei Wen

ICPE2024 Technical Program-October 25, 2024					
08:30-09:10	**Registration 08:30-17:00 (Building C01, School of Engineering)**				
Chair	Plenary Chair: Andreas Archenti				
09:10-9:55	**Plenary Session 2 (Room 1)**	**Plenary paper speaker: Prof. Daewook Kim** Extreme optical engineering for giant telescopes Daewook Kim			
9:55-10:40	**Plenary Session 3 (Room 1)**	**Plenary paper speaker: Prof. Anthony beaucamp** AI in Precision Engineering: Recent Trends and Challenges Anthony beaucamp			
10:40-11:10	**Coffee Break (Building C01 1F)**				
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**
	Session 2-1-1: OS20 **Advanced surface processing I**	**Session 2-2-1: OS21** **Micro fabrications for functional surfaces I**	**Session 2-3-1: GS06** **Laser machining I**	**Session 2-4-1: GS15** **Artificial intelligence and machine learning in precision engineering I**	**Session 2-5-1: OS15** **Nano-scale measurements and calibrations I**
Chair	Chair: Shozo Inoue	Chair: Jun Shimizu	Chair: Thomas Liebrich	Chair: Burak Sencer	Chair: Osamu Sato
11:10-11:30	**OS20-01** Formation of Heterostructured Si Thick Films in Atmospheric Pressure Very High-Frequency Plasma Afif Hamzens, Shota Mochizuki, Hiromasa Ohmi and Hiroaki Kakiuchi	**OS21-01** Creating Pore-Gradient Ti6Al4V Alloys though the Fusion of Particle Dynamics and Powder Metallurgy Yaole Cui, Asit Kumar Gain, Liangchi Zhang and Zhen Li	**GS06-02** Investigation on the diamond cutting of Inconel 718 using negative rake angle tools by FEM Yuhan Li, Wai Sze Yip and Suet To	**GS15-01** Data-Driven Feature Selection for Bearing Vibration Signal Using Correlation-Based Graph and Social Network Analysis, SeyedHesam Hosseinizadeh Mazloumi, Madhurjya Dev Choudhury, Yuqian Lu and Jaspreet Singh Dhupia	**OS15-02** An Optical Angle Measurement Based on Dual Comb Spectroscopy Sota Iguchi, Hiraku Matsukuma, Kakeru Ikeda, Ryo Sato and Wei Gao
11:30-11:50	**OS20-03** Porous Silicon Oxide Formation Using Atmospheric-Pressure Very High-Frequency Plasma for Single-Layer Anti-Reflection Coatings on Transparent Substrates Leapheng Uon, Naoto Mizusawa, Reo Yamauchi, Hiromasa Ohmi and Hiroaki Kakiuchi	**OS21-03** Mechanism of Surface Nanostructure Generation via Hot Water Treatment for Improving the Hybrid Joining of Galvanized Steel-Polymer Jianxing Ren, Weiyan Chen, Fuminobu Kimura and Yusuke Kajihara	**GS06-05** Investigation of a laser focus detecting system for laser machining Chong Chen, Ziran Chen, Xiaokang Liu and Wei Gao	**GS15-03** Investigation of energy consumption prediction for ultra-precision machine tools in machining small samples Baolong Zhang, Zhicheng Xu, Wai Sze Yip and Suet To	**OS15-03** Calibration Method for Optical Angle Measurements using Diffraction Gratings Hiraku Matsukuma, Sota Iguchi, Kakeru Ikeda, Ryo Sato and Wei Gao
11:50-12:10	**OS20-04** Surface modification of Si-MEMS using electron beam induced silicon nanodots Abbhiraj Singh, Shingo Kammachi, Nobutaka Goami, Muncyuki Naito, Ryosuke Matsumoto and Takahiro Namazu	**OS21-04** Development of optical trapping substrates for the capturing of microparticles Masahiko Yoshino, Ryuji Yamasaki, Motoki Terano and Takashi Matsumura	**GS06-06** Micromachining of carbon fiber reinforced plastics by femtosecond pulsed laser Yuhei Konishi and Jiwang Yan	**GS15-04** Dynamic and Precise Localization of Near- Surface Defects in Composite Materials Using Shearography and Spatiotemporal Object Detection GuanLin Li, Yao Hu and Qun Hao	**OS15-07** Understanding the Interplay between Hardness and Yield Stress in Fused Silica Asit Kumar Gain, Liangchi Zhang and Zhen Li
12:10-12:30	**OS20-05** Ultrasonic-assisted fabrication of water-dispersed photonic crystals for self-reporting surface pressure sensor application Daniel Saldivar-Ayala and Takahiro Namazu	**OS21-05** Study on Fabrication of Functional Electromagnetic Shielding Material Based on Flake Carbonyl Iron Powder and Reduced Graphene Oxide Wei-chi Chen, Hsiang-Yi Chung and Hung-Yin Tsai	**GS06-07** Fused silica cylindrical microlens array fabricated by multi-focus laser with CO2 laser polishing Zongyao Li, Peilin Huang, Kang Xu and Shaolin Xu	**GS15-05** The application of CNNs for angle measurement based on second harmonic generation Zhiyang Zhang, Jiahui Lin, Ryo Sato, Hiraku Matsukuma and Wei Gao	**OS15-08** A non-orthogonal Lloyd's mirror interferometer with a spatial light modulator for arbitrary pattern fabrication Nozomu Takahiro and Yuki Shimizu
12:30-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**				
	Session 2-1-2: OS20 **Advanced surface processing II**	**Session 2-2-2: OS21** **Micro fabrications for functional surfaces II**	**Session 2-3-2: GS06/OS10** **Laser machining II** **Energy beam processing I**	**Session 2-4-2: GS15** **Artificial intelligence and machine learning in precision engineering II**	**Session 2-5-2: OS15** **Nano-scale measurements and calibrations II**
Chair	Chair: Hiroaki Kakiuchi	Chair: Arata Kaneko	Chair: Masaki Michihata	Chair: Peng Wang	Chair: Panart Khajornrungruang
13:50-14:10	**OS20-07** Effect of substrate temperature on mechanical property of amorphous silicon carbon nitride films deposited by surface-wave plasma CVD Ippei Tanaka, Yuki Hattori, Yuki Hatae and Yasunori Harada	**OS21-06** Applicability of Projection Lithography Using a Gradient-Index Lens Array to Thick Resist Patterning Toshiyuki Horiuchi, Naoyuki Otsuka, Takeharu Fukuhara and Hiroshi Kobayashi	**GS06-08** Freeform 3D glass microstructures sculptured with dynamic multi-focus laser Li Yao and Shaolin Xu	**GS15-06** Research on Misjudgments Caused by Indistinguishable Speckle Patterns in Bolt Looseness Detection Lin Deng and Zhan Gao	**OS15-09** Sensitivity improvement of an optical head for measurement of the pitch deviation of a diffraction grating based on angles of diffraction of diffracted laser beams Tomoki Kitazume, Yuya Yamazaki and Yuki Shimizu
14:10-14:30	**OS20-08** Effect of Containing Copper Particles on Mechanical Characteristics of Sintered Ag film for SiC Die Bonding Chessadakorn Chantawong, Michiko Shindo, Mitsuhiro Nishida and Takahiro Namazu	**OS21-07** Lubrication Characteristics of Aluminum Alloy Surfaces Textured by Microvibration-assisted Cutting Jun Shimizu, Ryuta Koakutsu, Takeyuki Yamamoto, Kazuki Kaneko, Teppei Onuki and Hirotaka Ojima	**GS06-09** All-glass nanohole metalens by Non-diffracting Direct Laser Writing Kang Xu, Mandong Zheng, Lingyu Huang and Shaolin Xu	**GS15-10** Enhancing Optical Lateral Resolution through Deep Learning-Based Estimation of Zernike Coefficients from System Transfer Functions Ming-Jie Liu, Y. Cheng, Y. Huang and L. Chen	**OS15-10** Development of a modified optical head for measurement of the pitch deviation of a diffraction grating having a pitch narrower than laser wavelength Yuya Yamazaki, Tomoki Kitazume and Yuki Shimizu
14:30-14:50	**OS20-09** Evaluation of adhesion resistance of PVD films to hot dip galvanized and pure Zn Yusuke Ushiro, Ippei Tanaka, Yasunori Harada, Yuji Nanba and Takashi Ogisu	**OS21-08** Possibility of Self-Organized Bacterial Micro- structure as Functional Surface inspired by Two-dimensional Pattern of S. epidermidis Hayato Goto, Shuzo Masui, Masaki Michihata and Satoru Takahashi	**OS10-04** Precision ultrashort pulsed laser processing of silica glass by modulating pulse energy Ryota Hasegawa, Junya Hattori, Tomohiro Fukui, Naohiko Sugita and Yusuke Ito	**GS15-11** Physical model-driven single-shot end-to-end absolute phase acquisition strategy Yiming Li, M. Chen, C. Zhang, H. Wang, Z. Li, W. chen, F. Feng, X. Wang, W. Gui, X. Liang and X. Li	**OS15-11** Expansion of measuring range ofoptical angle sensor with light source having multiple longitudinal modes Keita Nakaoka and Yuki Shimizu
14:50-15:10	**OS20-12** The effect of concentration modulation on friction properties of diamond films synthesized by microwave plasma CVD Ryota Ohnishi, Ippei Tanaka, Natsuki Kawaguchi and Yasunori Harada	**OS21-09** Microfluidic Device of White Blood Cell Elimi-nation for Capturing Circulating Tumor Cells - Prompting Cell Contact on Antibody Coated Surfaces- Masanori Hayase, Takuya Okamura and Shuhei Ogawa	**OS10-05** Avoiding intermetallic compound formation in Al/Cu laser welding via a nickel interlayer Liwei Chen, Ryo Okawara, Yoshiki Sakai and Keisuke Nagato	**GS15-14** Development of crystalline lattice scale using scanning tunneling microscope (STM) Daichi Yoshikawa, Kazushi Iio and Masato Aketagawa	**OS15-13** Roundness Metrology of Small Cylinders with a Developed Non-contact Precision Two-dimensional Coordinate Measuring Device, Qiaolin Li, Chuang Zeng, Borong Wu, Xiaohao Wang and Xinghui Li
15:10-15:40	**Coffee Break (Building C01 1F)**				
	Session 2-1-3: OS20 **Advanced surface processing III**	**Session 2-2-3: OS21** **Micro fabrications for functional surfaces III**	**Session 2-3-3: OS10** **Energy beam processing I**	**Session 2-4-3: OS18** **Advanced image processings and applications**	**Session 2-5-3: OS15** **Nano-scale measurements and calibrations III**
Chair	Chair: Chunjin Wang	Chair: Masanori Hayase	Chair: Satoru Takahashi Yusuke Ito	Chair: Takashi Komuro	Chair: Yusuke Kajihara
15:40-16:00	**OS20-13** Improvement of etching rate of gallium nitride substrates by atmospheric pressure plasma with H2/O2/He gas Motoki Nabata, Genta Nakaue, Daisetsu Toh, Jumpei Yamada, Kazuto Yamauchi and Yasuhisa Sano	**OS21-10** Fabrication of Micro 3-D Structures using Electrical Discharge Deposition in Atmospheric Environment Senryu Hayashi, Jun Shimizu, Takeyuki Yamamoto, Kazuki Kaneko, Teppei Onuki and Hirotaka Ojima	**OS10-07** Time-resolved nano-scale measurement of surface displacement of silica glass during ultrashort-pulse laser ablation Shogo Kitamura, Chaoran Wei, Junya Hattori, Naohiko Sugita and Yusuke Ito	**OS18-01** Object detection and recognition method of inland ships based on improved YOLOv8 Jigang Wu and Liuyang Zhou	**OS15-14** Sub-micrometer scale pulsed laser ablation in water and nanofluids medium using position controlled photonic nanojet Reza Aulia Rahman, Tsutomu Uenohara, Yasuhiro Mizutani and Yasuhiro Takaya
16:00-16:20	**OS20-14** Damage-free Processing of Extremely Narrow Spaces via High-precision Etching Using High-pressure Plasma That Exceeds Atmospheric Pressure, Masafumi Miyake, Shotaro Matsumura, Iori Ogasahara, Taito Osaka, Jumpei Yamada, Daisetsu Toh, Kazuto Yamauchi, Makina Yabashi and Yasuhisa Sano	**OS21-11** Effects of surface morphology of inkjet-printed MoS2 nanoparticles on gas sensor characteristics Takahiro Kono, Takumi Masuda, Soichiro Nao and Arata Kaneko	**OS10-09** Picosecond Observation of Laser-induced Disturbances on the Water Jet in Water Jet Guided Laser Processing Shoichi Ui, Shuzo Masui, Shotaro Kadoya, Masaki Michihata and Satoru Takahashi	**OS18-03** Research on dynamic correction system for eye's aberrations based on image processing technology Zhigang Jia, Weijang Yan and Zhongxiang Zhang	**OS15-28** Ultra-precision and Highly Uniform One-Dimensional Nano-grating Standard By 50 nm Pitch For Nanoscale Calibration Yaxin Zhang, S. Wang, F. Han, Y. Zhao, K. Zheng, C. Wang, W. Jing, N. Peng and Z. Jiang
16:20-16:40	**OS20-15** Mechanical Reliability of Sintered Ag Die Attach Assemblies with Al/Ni Rapid Heat Treatment Hiroya Saegusa, Daisuke Yasugi and Takahiro Namazu	**OS21-13** Tuning Cross-Linking Conditions of PDMS for Leak-Free Slip Action in SlipChip Inaam Rafia, Bolotrade Marcela, Shunya Okamoto, Takayuki Shibata and Moeto Nagai	**OS10-01** Shape control of the silver precipitation layer by laser irradiation inside borosilicate glass Miyuka Kono, Souta Matsusaka, Sho Itho and Hirofumi Hidai	**OS18-04** Multiple moving object detection for stereo vision on single-board computer Yoshito Yabuta	**OS15-16** Absolute Grating Encoder with Nano-level Precision on Meter-level Measurement Range Shengtong Wang, Feifan Cao, Linbin Luo, Yifeng Wang and Xinghui Li
16:40-17:00	**OS20-18** Strength prediction of metal-polymer joints using machine learning from metal surface images Zhongqi Cui, Shuohan Wang, Yuuka Ito, eiji Yamaguchi, Fuminobu Kimura and Yusuke Kajihara	**OS21-14** Spatially patterned laser through pixeled intensity modulation for fabrication of sub-wavelength surface structures Lingyu Huang, Kang Xu and Shaolin Xu	**OS10-11** Fundamental Study on Calcination of Limestone Particles by Near-infrared Wavelength Laser with Vibration Stirring Naoki Kotake, Yasuhiro Okamoto, Masakazu Oka, Shuji Fujiki, Shunjiro Shizuka and Akira Okada	**OS18-08** New vision-based evidence of the nature of vibro-impacts in an impact-damped boring bar Janhavi Bhoge, Madhav Kumar, Hari Charan, Arjun Patel and Mohit Law	**OS15-17** Form deviation measurement of probe tip ball for CMM using a rotatable ring gauge Tatsuki Tsuda, So Ito, Kimihisa Matsumoto and Kazuhide Kamiya
17:00-17:20	**OS20-22** Surface texture creation mechanisms and surface properties of intermittent burnishing process Masato Okada, Hayato Nakagawa, Makoto Nikawa and Shunki Kitagawa	**OS21-15** Generation and Evaluation of Micro-Structured Surfaces for Hydrophilic Control Akira Kakuta and Robin Shindo	**OS10-10** Investigation of intense stress wave generated by double femtosecond laser pulses in fused silica Huijie Sun, Junya Hattori, Tao Sun, Tomohiro Fukui, Horiki Matsumoto, Naohiko Sugita and Yusuke Ito		**OS15-18** Stitching interferometry method for self-calibration of large-scale variable-line-spacing gratings by using a Fizeau interferometer Chenguang Yin, Xin Xiong, Ryo Sato, Hiraku Matsukuma and Wei Gao
18:00-20:45	**Banquet (Hotel Metropolitan Sendai)**				

ICPE2024 Technical Program-October 25, 2024					
08:30-09:10	**Registration 08:30-17:00 (Building C01, School of Engineering)**				
09:10-10:40	**Plenary Session 2 & 3 (Room 1)** Room 2 will be used as the Satellite Room of Plenary Session 2 & 3 when Room 1 is over capacity.				
10:40-11:10	**Coffee Break (Building C01 1F)**				
	Room 3	**Room 4**	**Room 5**		
	Session 2-3-1: GS06 **Laser machining I**	**Session 2-4-1: GS15** **Artificial intelligence and machine learning in precision engineering I**	**Session 2-5-1: OS15** **Nano-scale measurements and calibrations I**		
Chair	Chair: Thomas Liebrich	Chair: Burak Sencer	Chair: Osamu Sato		
11:10-11:30	**GS06-02** Investigation on the diamond cutting of Inconel 718 using negative rake angle tools by FEM Yuhan Li, Wai Sze Yip and Suet To	**GS15-01** Data-Driven Feature Selection for Bearing Vibration Signal Using Correlation-Based Graph and Social Network Analysis, SeyedHesam Hosseinizadeh Mazloumi, Madhurjya Dev Choudhury, Yuqian Lu and Jaspreet Singh Dhupia	**OS15-02** An Optical Angle Measurement Based on Dual Comb Spectroscopy Sota Iguchi, Hiraku Matsukuma, Kakeru Ikeda, Ryo Sato and Wei Gao		
11:30-11:50	**GS06-05** Investigation of a laser focus detecting system for laser machining Chong Chen, Ziran Chen, Xiaokang Liu and Wei Gao	**GS15-03** Investigation of energy consumption prediction for ultra-precision machine tools in machining small samples Baolong Zhang, Zhicheng Xu, Wai Sze Yip and Suet To	**OS15-03** Calibration Method for Optical Angle Measurements using Diffraction Gratings Hiraku Matsukuma, Sota Iguchi, Kakeru Ikeda, Ryo Sato and Wei Gao		
11:50-12:10	**GS06-06** Micromachining of carbon fiber reinforced plastics by femtosecond pulsed laser Yuhei Konishi and Jiwang Yan	**GS15-04** Dynamic and Precise Localization of Near- Surface Defects in Composite Materials Using Shearography and Spatiotemporal Object Detection GuanLin Li, Yao Hu and Qun Hao	**OS15-07** Understanding the Interplay between Hardness and Yield Stress in Fused Silica Asit Kumar Gain, Liangchi Zhang and Zhen Li		
12:10-12:30	**GS06-07** Fused silica cylindrical microlens array fabricated by multi-focus laser with CO2 laser polishing Zongyao Li, Peilin Huang, Kang Xu and Shaolin Xu	**GS15-05** The application of CNNs for angle measurement based on second harmonic generation Zhiyang Zhang, Jiahui Lin, Ryo Sato, Hiraku Matsukuma and Wei Gao	**OS15-08** A non-orthogonal Lloyd's mirror interferometer with a spatial light modulator for arbitrary pattern fabrication Nozomu Takahiro and Yuki Shimizu		
12:30-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**				
	Session 2-3-2: GS06/OS10 **Laser machining II** **Energy beam processing I**	**Session 2-4-2: GS15** **Artificial intelligence and machine learning in precision engineering II**	**Session 2-5-2: OS15** **Nano-scale measurements and calibrations II**		
Chair	Chair: Masaki Michihata	Chair: Peng Wang	Chair: Panart Khajornrungruang		
13:50-14:10	**GS06-08** Freeform 3D glass microstructures sculptured with dynamic multi-focus laser Li Yao and Shaolin Xu	**GS15-06** Research on Misjudgments Caused by Indistinguishable Speckle Patterns in Bolt Looseness Detection Lin Deng and Zhan Gao	**OS15-09** Sensitivity improvement of an optical head for measurement of the pitch deviation of a diffraction grating based on angles of diffraction of diffracted laser beams Tomoki Kitazume, Yuya Yamazaki and Yuki Shimizu		
14:10-14:30	**GS06-09** All-glass nanohole metalens by Non-diffracting Direct Laser Writing Kang Xu, Mandong Zheng, Lingyu Huang and Shaolin Xu	**GS15-10** Enhancing Optical Lateral Resolution through Deep Learning-Based Estimation of Zernike Coefficients from System Transfer Functions Ming-Jie Liu, Y. Cheng, Y. Huang and L. Chen	**OS15-10** Development of a modified optical head for measurement of the pitch deviation of a diffraction grating having a pitch narrower than laser wavelength Yuya Yamazaki, Tomoki Kitazume and Yuki Shimizu		
14:30-14:50	**OS10-04** Precision ultrashort pulsed laser processing of silica glass by modulating pulse energy Ryota Hasegawa, Junya Hattori, Tomohiro Fukui, Naohiko Sugita and Yusuke Ito	**GS15-11** Physical model-driven single-shot end-to-end absolute phase acquisition strategy Yiming Li, M. Chen, C. Zhang, H. Wang, Z. Li, W. chen, F. Feng, X. Wang, W. Gui, X. Liang and X. Li	**OS15-11** Expansion of measuring range ofoptical angle sensor with light source having multiple longitudinal modes Keita Nakaoka and Yuki Shimizu		
14:50-15:10	**OS10-05** Avoiding intermetallic compound formation in Al/Cu laser welding via a nickel interlayer Liwei Chen, Ryo Okawara, Yoshiki Sakai and Keisuke Nagato	**GS15-14** Development of crystalline lattice scale using scanning tunneling microscope (STM) Daichi Yoshikawa, Kazushi Iio and Masato Aketagawa	**OS15-13** Roundness Metrology of Small Cylinders with a Developed Non-contact Precision Two-dimensional Coordinate Measuring Device, Qiaolin Li, Chuang Zeng, Borong Wu, Xiaohao Wang and Xinghui Li		
15:10-15:40	**Coffee Break (Building C01 1F)**				
	Session 2-3-3: OS10 **Energy beam processing I**	**Session 2-4-3: OS18** **Advanced image processings and applications**	**Session 2-5-3: OS15** **Nano-scale measurements and calibrations III**		
Chair	Chair: Satoru Takahashi Yusuke Ito	Chair: Takashi Komuro	Chair: Yusuke Kajihara		
15:40-16:00	**OS10-07** Time-resolved nano-scale measurement of surface displacement of silica glass during ultrashort-pulse laser ablation Shogo Kitamura, Chaoran Wei, Junya Hattori, Naohiko Sugita and Yusuke Ito	**OS18-01** Object detection and recognition method of inland ships based on improved YOLOv8 Jigang Wu and Liuyang Zhou	**OS15-14** Sub-micrometer scale pulsed laser ablation in water and nanofluids medium using position controlled photonic nanojet Reza Aulia Rahman, Tsutomu Uenohara, Yasuhiro Mizutani and Yasuhiro Takaya		
16:00-16:20	**OS10-09** Picosecond Observation of Laser-induced Disturbances on the Water Jet in Water Jet Guided Laser Processing Shoichi Ui, Shuzo Masui, Shotaro Kadoya, Masaki Michihata and Satoru Takahashi	**OS18-03** Research on dynamic correction system for eye's aberrations based on image processing technology Zhigang Jia, Weijang Yan and Zhongxiang Zhang	**OS15-28** Ultra-precision and Highly Uniform One-Dimensional Nano-grating Standard By 50 nm Pitch For Nanoscale Calibration Yaxin Zhang, S. Wang, F. Han, Y. Zhao, K. Zheng, C. Wang, W. Jing, N. Peng and Z. Jiang		
16:20-16:40	**OS10-01** Shape control of the silver precipitation layer by laser irradiation inside borosilicate glass Miyuka Kono, Souta Matsusaka, Sho Itho and Hirofumi Hidai	**OS18-04** Multiple moving object detection for stereo vision on single-board computer Yoshito Yabuta	**OS15-16** Absolute Grating Encoder with Nano-level Precision on Meter-level Measurement Range Shengtong Wang, Feifan Cao, Linbin Luo, Yifeng Wang and Xinghui Li		
16:40-17:00	**OS10-11** Fundamental Study on Calcination of Limestone Particles by Near-infrared Wavelength Laser with Vibration Stirring Naoki Kotake, Yasuhiro Okamoto, Masakazu Oka, Shuji Fujiki, Shunjiro Shizuka and Akira Okada	**OS18-08** New vision-based evidence of the nature of vibro-impacts in an impact-damped boring bar Janhavi Bhoge, Madhav Kumar, Hari Charan, Arjun Patel and Mohit Law	**OS15-17** Form deviation measurement of probe tip ball for CMM using a rotatable ring gauge Tatsuki Tsuda, So Ito, Kimihisa Matsumoto and Kazuhide Kamiya		
17:00-17:20	**OS10-10** Investigation of intense stress wave generated by double femtosecond laser pulses in fused silica Huijie Sun, Junya Hattori, Tao Sun, Tomohiro Fukui, Horiki Matsumoto, Naohiko Sugita and Yusuke Ito		**OS15-18** Stitching interferometry method for self-calibration of large-scale variable-line-spacing gratings by using a Fizeau interferometer Chenguang Yin, Xin Xiong, Ryo Sato, Hiraku Matsukuma and Wei Gao		
18:00-20:45	**Banquet (Hotel Metropolitan Sendai)**				

ICPE2024 Technical Program-October 25, 2024

ICPE2024 Technical Program-October 25, 2024

08:30-09:10	**Registration 08:30-17:00 (Building C01, School of Engineering)**		**Registration 08:30-17:00 (Building C01, School of Engineering)**		
09:10-9:55 9:55-10:40	**Plenary Session 2 & 3 (Room 1)** Room 2 will be used as the Satellite Room of Plenary Session 2 & 3 when Room 1 is over capacity.		**Plenary Session 2 & 3 (Room 1)** Room 2 will be used as the Satellite Room of Plenary Session 2 & 3 when Room 1 is over capacity.		
10:40-11:10	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Room 6	**Room 7**	**Room 8**	**Room 9**	**Room 10**
	Session 2-6-1: OS12 **Micro / Nano systems I**	**Session 2-7-1: OS06** **Advanced grinding technologies I**	**Session 2-8-1: OS02** **Life cycle and smart engineering**	**Session 2-9-1: OS05** **Advanced cutting technologies I**	**Session 2-10-1: OS19** **Advanced 3 dimensional digital processing I**
Chair	Chair: Yuichi NAKAZATO	Chair: Kazutoshi Katahira	Chair: Yasushi Umeda	Chair: Zekai Murat Kilic	Chair: Yutaka Ohtake
11:10-11:30	**OS12-01** Miniaturized peristatic pipe travelling robot capable of moving in the 30mm diameter pipe Yujie Shi, Masato Mizukami, Naohiko Hanajima and Yoshinori Fujihira	**OS06-01** Crystallographic Analyzations of Subsurface Damaged Layers in Wide-bandgap Semiconductor Wafers Using High-Resolution Micro-Raman Tomographic Imaging Teppei Onuki, Kyo-ichiro Shiba, Yusuke Mogaki, Libo Zhou, Hirotaka Ojima and Jun Shimizu	**OS02-01** Real-time intelligent chatter detection for precision milling using CNN model Tong Zhu, Carman K. M. Lee, Denghui Li, Suet To and Wai Sze Yip	**OS05-01** Discrete analysis of the ultrasonic vibration superimposed turning process by orthogonal cutting experiments Liborius Hendrik, Werner Jonas Maximilian, Nestler Andreas, Drossel Welf-Guntram and Schubert Andreas	**OS19-01** A Study on Triangular Mesh Generation for TLS Point Clouds Using Implicit and Region-based Methods Daiki Koyama, Hiroaki Date and Satoshi Kanai
11:30-11:50	**OS12-02** Molding of dissolving microneedle arrays Yuusei Takaki, Harunori Takei, Natsumi Amano, Takahiro Ito, Sunao Murakami, Tomohiro Hikima, Hirotada Tsubaki, Masaaki Matsuo, Masaya Hara, Yasunori Tashiro and Takahiro Oniki	**OS06-02** Physics informed generative neural network of multireflection interference fringes for optical thickness gauge Teppei Onuki, Takeshi Mochizuki, Yuta Toshima, Hirotaka Ojima, Jun Shimizu and Libo Zhou	**OS02-02** Influence of mist generation by machining pr eprocess on visibility to control motor drive in built-in mist collector for machine tools Kosuke Yamamoto, Yuta Noro, Toshiki Hirogaki, Masao Nakagawa and Eiichi Aoyama	**OS05-02** Research on measuring point selection for strain-based on-machine estimation of workholding states Yu Yan, Koji Teramoto, Naruki Shoji and Hiroki Matsumoto	**OS19-04** Generation of Training Data from CAD Models Suitable for Component Recognition from Point Clouds of Industrial Plants Kosei Otani, Takuma Nagumo and Hiroshi Masuda
11:50-12:10	**OS12-03** Impulse-Driven Traveling Capsule Endoscope - Wireless Power Supply Position Control - Kenji Miyauchi, Kohei Fujita, Takahiro Ito, Sunao Murakami and Toshihiro Kimura	**OS06-03** Wear State Identification of Ordered Grinding Wheel for C/SiC Composites Based on DBO-ELM Bing Chen and Ye Guo	**OS02-03** Modeling Object-Concepts in Engineers' Thinking under Digital Triplet Framework Yiming Hou, Shinsuke Kondoh, Yasushi Umeda, Masahiro Nishio and Koji Makino	**OS05-03** Physical model of a hybrid tool consisting of SAG and face milling Yuichi Kurane, Ashwani Pratap, Burak Sencer and Anthony Beaucamp	**OS19-03** Comparison of point cloud densification from multi-view stereo and 3D Gaussian splatting in industrial photogrammetry Mingda Harvey Yang, Mohammed A Isa, Adam Thompson, David T Branson III and Samanta Piano
12:10-12:30	**OS12-04** Mechanical behavior of nanoclay/polyester composite coatings for pre-coated metal sheets Weikang Lin, Grant Edwards, Shuning Song, Michael Heitzmann, Darren Martin, Mingyuan Lu, Lisbeth Grøndahl and Han Huang	**OS06-05** Creep Feed Grinding Characteristics of Maraging Steel Using Porous Vitrified cBN Wheel Masakazu Fujimoto and Haruya Tanaka	**OS02-05** Extraction of Knowledge for Plant Inspection based on Behavior Comparison between Experts and Novices Hiroto Kitamori, Y. Umeda, J. Ota, H. Asama, S. Kasahara, N. Yamato, H. Ito, T. Daito, S. Tamura, T. Kato, M. Korenaga, A. Sasamura and F. Nonaka	**OS05-04** Experimental Elucidation of Cutting-edgeTemperature Behavior in Terms of Ultrasonic Vibration-assisted Drilling Naofumi Tsuji, K. Takashima, H. Kawamura, K. Hara, R. Tanaka, A. Sakurada, K. Miyawaki and H. Isobe	**OS19-06** Point cloud Classification for Components of Industrial Facilities Using Laplacian Features Takeshi Otsuka, Kosei Otani and Hiroshi Masuda
12:30-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		
	Session 2-6-2: OS12 **Micro / Nano systems II**	**Session 2-7-2: OS06** **Advanced grinding technologies II**	**Session 2-8-2: GS07** **Additive Manufacturing I**	**Session 2-9-2: OS05** **Advanced cutting technologies II**	**Session 2-10-2: OS19** **Advanced 3 dimensional digital processing II**
Chair	Chair: Masato MIZUKAMI	Chair: Teppei Onuki	Chair: Chang-Ju Kim	Chair: Chieko Kuji	Chair: Hiroaki Date
13:50-14:10	**OS12-05** Impedance Matching Between a Waveguide and a Transmission Line Using a Flexible Conductive Membrane Micro-actuator for Beyond 5G/6G Communication Chao Qi, Sangyeop Lee and Tadahiko Shinshi	**OS06-06** Investigation of the Wheel Vibration and Surface Integrity by In-situ Magnetic Field Assisted Parallel Ultra-Precision Grinding of Inconel 718 Te Zhao, Tengfei Yin, Yi Tan, Denghui Li and Suet To	**GS07-06** Direct observation of bubbles inside the molten pool in laser welding of alumina Daijiro Tokunaga, Yuko Aono and Atsushi Hirata	**OS05-05** A Comparative Analysis of the Cutting Separation Criteria in Finite Element Simulations of Orthogonal Metal Cutting Yaoyu Wang, Liangchi Zhang, Zhen Li and Jipeng Cui	**OS19-08** Scale-aware Volume Filtering by Splitting Transformed Voxel-Domains Shin Yoshizawa and Hideo Yokota
14:10-14:30	**OS12-09** An Ultra-Thin Variable Aperture Mechanism Using a Micro Flat Motor with a Multi-Pole Ring Magnet Keita Nagai, Riku Fukazawa, Yu Okawara, Haruhiro Komura and Tadahiko Shinshi	**OS06-07** Experimental investigation of the impact of machining conditions on AE signal in grinding process Zongwei Ren and Hayato Yoshioka	**GS07-07** Bead shape stabilization method under laser scanning speed changing condition by controlling deposition conditions for powder DED process Yusuke Yamamoto and Ryuta Sato	**OS05-06** Transition of cutting forces during deceleration of feed in interrupted cutting - Novel evaluation method for frictional characteristics between cutting tool and workpiece material, Isaí Espinoza-Torres, T. Ryutaro, I. Martinez-Ramirez, K. Sekiya and K. Yamada	**OS19-05** Point Cloud Segmentation of Production Lines in Factories Kakeru Takeda and Hiroshi Masuda
14:30-14:50	**OS12-06** High Thermal Stability Design Method for a Dual-axis Photoelectric Level Yong-Jun Wang, Rui-Jun Li, Wan Fang and Peng-Hao Hu	**OS06-09** Exploration of grinding heat diffusion pattern within Ti-6Al-4V workpieces Yujun Wu and Weimin Lin	**GS07-13** Additive manufacturing of fine capillary wick with hybrid porous structure using a toolpath-based design Shujie Tan, Pengfei Zhang, Xu Meng, Liping Ding and Yicha Zhang	**OS05-07** Research on effect of ultra-high pressure coolant supplied from flank face in end milling of aerospace alloys supported by CFD simulations, Jingtian Mao, Kensuke Tsuchiya, Chikara Morigo and Shinji Yukinari	**OS19-12** Bas-relief shape modeling from RGB-D images using feature lines and vector fields Takumi Kimura and Yukie Nagai
14:50-15:10	**OS12-08** Development of a two-dimensional large-stroke nanopositioning table Jie Li, Rui-Jun Li, Yi Hu and Jun-Rui Li	**OS06-10** Study of surface integrity on high-speed grinding of iron metal Juan Chen, Bi Zhang and Suet To	**GS07-14** Rotary TIG WAAM Particle Simulation Andrea Bimbi, Masahiro Kawabata, Togen Tsunekawa and Hiroyuki Sasahara	**OS05-09** Microtexture Processing on Three-Dimensional Curved Surfaces Using Ultrasonic Milling Keisuke hara, Atsuhiro Yoshida, Naofumi Tsuji, Kota Takashima, Hirofumi Kawamura and Hiromi Isobe	**OS19-02** Quality Improvement of CT Reconstruction for Multi-scanning of Large Scale Objects Chelhum Park and Yutaka Ohtake
15:10-15:40	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Session 2-6-3: OS04 **CAD/CAM technologies**	**Session 2-7-3: OS06** **Advanced grinding technologies III**	**Session 2-8-3: GS07/OS09** **Additive Manufacturing II** **Non-traditional machining and additive manufacturing I**	**Session 2-9-3: GS17** **Semiconductor manufacturing and metrology**	**Session 2-10-3: OS19** **Advanced 3 dimensional digital processing III**
Chair	Chair: Isamu Nishida Junichi Kaneko	Chair: Hayato YOSHIOKA	Chair:Takeyuki Abe	Chair: Xinghui Li	Chair: Hiroshi Masuda
15:40-16:00	**OS04-01** Tool path generation considering workpiece deformation due to vice clamping Koki Kuroda, Hidenori Nakatsuji and Isamu Nishida	**OS06-14** Development of abrasive grain detection system by machine learning Kunon Hayashi, Atsuhiko Sawada, Hirotaka Ojima, Libo Zhou and Teppei Onuki	**GS07-01** Height Control of Microstructures Directly Extruded by Fused Deposition Modeling Processes Yunlong Han, J. Sun, Y. Zhang, Q. Xiao, H. Jing, Z. Li, Y. Guo, Q. Wang, M. Lv, W. Wang, Y. Wang, Z. Li and L. Zhang	**GS17-03** New DUV Wavelength - Scanning Scatterometry for Sub-Micron High-Aspect-Ratio OCD Metrology Fu-Sheng Yang, Min-Ru Wu, Yen-Hung Hung, Yuan-Ci Lin, Bo-Chen Kuo and Liang-Chia Chen	**OS19-10** 3D mode shape visualization of machining robots using motion magnification Madhav Kumar, Hari Charan and Mohit Law
16:00-16:20	**OS04-02** Tool Path Generation for Five-Axis Controlled Swarf Machining Considering Machining Error Caused by Tool Axis Change Tatsuki Ono and Koichi Morishige	**OS06-13** Possibilities of Reduction in Sliding Friction by Addition of Ultra Fine Bubbles to Coolant Koju Hiraki, Ryuta Isizumi, Renma Sumiyoshi, Takeshi Watanabe, Yuki Hara, Nobuyuki Izuhara, shigeru Taniguchi, Shoko Yamada and Ryoichi Yagami	**GS07-03** Design, Fabrication, and Evaluation of Properties Of Novel Hybrid Lattice Structures Şeymanur Sirtli, Cem Batur, Elmas Salamci, Hamed Tanabi and Metin Uymaz Salamci	**GS17-04** Optimizing Fourier Hyperspectral Scatterometry with Global Sensitivity Analysis for Semiconductor OCD Metrology Yen-Hung Hung, Min-Ru Wu, Fu-Sheng Yang, Bo-Chen Kuo, Yuan-Ci Lin, Surajit Das and Liang-Chia Chen	**OS19-11** Real-Time Assembly Inspection of Factory Pipes Using Skelton Structure from Point-cloud Yusei Sakoguchi and Yutaka Ohtake
16:20-16:40	**OS04-03** Detection of sphere contact shape for automotive safety verification Linxuan He and Masatomo Inui	**OS06-16** Evaluation on fine cutting edges of PCD grinding tool and mirror finishing surface on SiC substrates Haruto Konishi, Takashi Fujita, Ryota Fukunaga, Yuki Izutani, Yasuo Izumi and Junji Watanabe	**OS09-25** Highly Efficient Surface Smoothing of AMed Metal Products by Long-pulse Electron Beam Irradiation Xuze Zhao, Togo Shinonaga and Akira Okada	**GS17-05** Basic study of plasma dicing for SiC wafer using high-pressure plasma Shunto Iden, Yuken Matsumura, Jumpei Yamada, Daisetsu Toh, Kazuto Yamauchi and Yasuhisa Sano	**GS01-02** Circumferential localization of wall thinning on the inner surface of a pipe using microwaves Yijun Guo, Noritaka Yusa, Hidetoshi Hashizume, Ziran Chen and Xiaokang Liu
16:40-17:00	**OS04-04** Concurrent process and feedrate scheduling with analytical Gaussian-based process basis function Shuntaro Yamato, Takashi Yanagitani, Burak Sencer and Anthony Beaucamp	**OS06-12** Deformation and Material Removal Mechanisms in Nano-Scratching of Single-Crystal Aluminum Nitride Haoxiang Wang, xiaoguang Guo, Zhigang Dong, Renke Kang and Shang Gao	**OS09-24** Femtosecond laser studies on ablation efficiency and surface quality of alumina Taiga Tanaka, Ryo Koike, Yasuhiro Kakinum, Hideki Aoyama, yusuke Ogiso and Tomoki Nagae	**GS17-06** Dimension reduction of electromagnetic field on the top surface of 3D through silicon via array by using singular value decomposition Song-En Chen, Chih-Chung Wang and Jia-Han Li	**GS11-28** Quantum enhanced metrology for 3D manufacturing Jernej Frank, Tommaso Tufarelli, Samanta Piano, Alexander Lvovsky and Gerardo Adesso
17:00-17:20		**OS06-21** Fretting wear mechanism of DZ125 surface created by WEDM Haohan Zhang, Jing Ni and Zhen Zhang	**GS05-04** Transient Simulation of arc plasma in Electrical Discharge Machining Chen Liu and Xiaodong Yang	**GS12-09** A High-precision Displacement Measurement Method based on Ultrasonic Travelling Waves in Crystals Mingshu Wu, Bai Ji, Guancoing Tao, Yuge Zhang and Fu Min	**GS11-29** An enhanced data-processing algorithm for spectrally-resolved interferometry using a femtosecond laser Tao Liu, Amane Suzuki, Ryo Sato, Hiraku Matsukuma and Wei Gao
18:00-20:30	**Banquet (Hotel Metropolitan Sendai)**		**Banquet (Hotel Metropolitan Sendai)**		

ICPE2024 Technical Program-October 26, 2024

ICPE2024 Technical Program-October 26, 2024

08:30-08:50	**Registration 08:30-17:00 (Building C01, School of Engineering)**		**Registration 08:30-17:00 (Building C01, School of Engineering)**		
	Room 1	**Room 2**	**Room 3**	**Room 4**	**Room 5**
	Session 3-1-1: GS11 Opitcal metrology I	**Session 3-2-1: OS01 Digital design and manufacturing systems I**	**Session 3-3-1: OS03 Advanced system design and applications I**	**Session 3-4-1: OS05 Advanced cutting technologies I**	**Session 3-5-1: OS15 Nano-scale measurements and calibrations IV**
Chair	Chair: Zhigang Jia	Chair: Haruhiko Suwa	Chair: Koji Iwamura	Chair:Naohiko Sugita	Chair: Masaki Michihata
08:50-09:10	**GS11-04** Research on TSV depth measurement technique using interferometric spectroscopy Zizheng Wang, Z. Liu, C.i Bai, C. Yao, X. Sun and C. Hu	**OS23-11** Application of Design of Experiments for high-accuracy plastic micro needle arrays manufacturing, Alireza Mollaei Ardestani, M. Babenko, M. Calaon, J. H. Hattel, M. Kulahci, B. Whiteside, G. Tosello	**OS03-02** Accelerating Metamaterial Design: An Intelligent System for Tailored Mechanical Properties Jipeng Cui, Liangchi Zhang and Yaoyu Wang	**OS05-10** Influence of cutting speed on wear pattern of diamond-coated carbide end mills in high-speed milling of WC-Co cemented carbide, Kazuki Murooka, T. Akechi, T. Koyano, A. Hosokawa, T. Furumoto and H. Mikado	**OS15-19** Diameter measurement of microprobe tip ball using a non-contact contour measuring machine Daichi Inukai, S. Ito, T. Tomioka, K. Matsumoto and K. Kamiya
09:10-09:30	**GS11-10** Precise Angular Alignment of Birefringent Axes for Polarization Maintaining Fiber Based Electrooptic Sensing Probe Seung Kwan Kim and Sun Do Lim	**OS01-04** Eccentric machining of a crankshaft using feature-based simultaneous four-axis machining using STEP-NC Shunta Onodera, Fumiki Tanaka and Masahiko Onosato	**OS03-05** A method for evaluating design hypotheses certainty ensures evidence transparency Yuga Suzuki, Y. Tsutsui, Y. Shimomura and A. Tsumaya	**OS05-12** 3D microstructure imaging of dual-phase steels with different carbon contents and thermal histories using a 3D internal structure microscope, Yuuki Aida, N. Yamashita, S. Morita, T. Shiraiwa, M. Enoki, N. Kiyokane, K. Yamazaki, S. Kaneko and H.Yokota	**OS15-23** Improving spatial resolution of passive near-field microscope by fabricating ultra sharp tungsten tips Jizhou Tang, Kuan-Ting Lin and Yusuke Kajihara
09:30-09:50	**GS11-11** An optical sensor for three-axis angle measurement employing imaging sensors Misaki Hosoya, Ryo Sato, Jiucheng Wu, Hiraku Matsukuma and Wei Gao	**OS01-06** A study on easy to build friction models for feed axis simulation of machine tools Evaluation score of paper Taro Ogiso and Shunsuke Aoki	**OS03-10** Evaluating novelty of design concepts based on information content Riki Kobayahi, Yusuke Tsutsui and Akira Tsumaya	**OS05-13** An Experimental Study on the Machining Performance of Cubic Boron Nitride Tools in Ultra-Precision Machining of Ti-6Al-4V with Magnetic Field Assistance, Louis Luo Fan, Ho Wan Leung, Wai Sze Yip and Suet To	**OS15-25** A High Precision Capacitive Absolute Angular Displacement Sensor with a Cross-Signal Transmission Structure Changliang Wu, Bingnan Zhan, Zhicheng Yu, Xingchen Fan and Peiyu Yu
09:50-10:10	**GS11-12** The centroid-based automatic segmentation and weighted localization algorithm for the center of the focused laser spot Huixu Song and Qingwei Li	**OS01-11** Improvement of press formability of UD semi-preg CFRTP using polygon development based on 3D-CAD data Hidetake Tanaka, Atsushi Yabe, Koudai Ueda and Tatsuki Ikari	**OS03-11** A Proposal of Power Operation Planning Method using Stochastic Programming and Integration with Production Planning , Daisuke Kokuryo, Toshiya Kaihara and Ayano Nishikawa	**OS05-14** Optimization of end milling conditions in multi dimensional action space using deep reinforcement learning, Yusuke Morishita, H. Ojima, L. Zhou, K. Kaneko and T. Onuki	**OS15-22** A high precision point cloud registration method for micro-nano CMM and white light interference based on a triangular frustum calibrator, Yunlong Liu, Ruijun Li, Zhenying Cheng and Yonghong Wang
10:10-10:30	**GS11-14** Six Degree-of-freedom Pose Metrology Based on Dual-comb Ranging Ruilin Jiang, Jinming Li, Lijiang Zeng and Guanhao Wu	**OS01-08** A Study on Suppression of Variation in Tool Center Points for Ball-End Milling of Free-Form Surfaces Eisuke Sogabe and Keiichi Nakamoto	**OS03-12** A Proposal of Production Planning Method Adapting to Customer Demand Fluctuations with Consideration of Advance Demand Information and Warehouse Constraints, Araki Kawamura, T. Kaihara, D. Kokuryo, H. Mizuhara, T. Umeda and H. Ikeda	**OS05-15** Mechanical modelling of cutting force in thin sectioning of pathology specimens, Takehiro Sasaki, H. Satoh, M. Yoshino, H. Nanjo, R. Nakamura, T. Kuzumi and Y. Akagami	**OS15-24** Prediction of the main measurement errors of conical grating interferometer based on grating diffraction wavefront Lin Liu, Zhaowu Liu, Wei Wang, Shan Jiang and Wenhao Li
10:30-11:00	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Session 3-1-2: GS11 Opitcal metrology II	**Session 3-2-2: OS01 Digital design and manufacturing systems II**	**Session 3-3-2: OS03 Advanced system design and applications II**	**Session 3-4-2: OS05 Advanced cutting technologies II**	**Session 3-5-2: OS15 Nano-scale measurements and calibrations V**
Chair	Chair: Ralf D. Geckeler	Chair: Hidetake Tanaka	Chair: Toshiya Kaihara	Chair:Takashi Matsumura	Chair: Yasuhiro Mizutani
11:00-11:20	**GS11-15** Straightness measurement with laser beam and deep learning Ukyo Takata, Satoru Takano, Yohei Yamada, Toshinori Yasuhara, Kohsei Terao and Masato Aketagawa	**OS01-09** An optimization model for cutting tool allocation in flexible manufacturing systems considering remaining usable times and machine load balance Taketo Fujii and Haruhiko Suwa	**OS03-13** A study on systematic grasping method for hazard scenarios using state transition graph Koki Kaneda, Yusuke Tsutsui and Akira Tsumaya	**OS05-16** Evaluation of PCD tool edge sharpening technique by tribochemical polishing Mitsuru Murai, K. Kawamura, M. Touge and A. Kubota	**OS15-27** Femtosecond laser absolute encoder employing a variable line spacing grating Ryota Okimura, Ryo Sato, Hiraku Matsukuma and Wei Gao
11:20-11:40	**GS11-17** Second Harmonic Generation (SHG) Angle Sensor based on a Collimated Femto-second Laser Beam Jiahui Lin, Zhiyang Zhang, Ryo Sato, Hiraku Matsukuma and Wei Gao	**OS01-10** A Study on Computer Aided Process Planning to Realize Parts Machining on a Sliding Headstock Lathe Taichi Takanami, Shuichi Watabe, Naoki Akiyama, Kazuhiko Sannomiya, Takaichi Nakaya and Keiichi Nakamoto	**OS03-14** A method for evaluating design novelty based on a distributional representation model Kahoru Furuya, R. Masumura, F. Sayfullooh and Y. Shimomura	**OS05-17** Real-time tool life monitoring using thermal imaging technology and image classification technology Xiaoqi Song, Shoto Yano and Kenji Suzuki	**OS15-15** A compact non-orthogonal Lloyd's interferometer for fabrication of two-axis scale gratings, Satoshi Kodaka, Chenguang Yin, Ryo Sato, Hiraku Matsukuma and Wei Gao
11:40-12:00	**GS11-18** Investigation on Performance of Fabry-Pérot Angle Sensor using Mode-locked Femtosecond Laser Dong Wook Shin, Ryo Sato, Hiraku Matsukuma and Wei Gao	**OS01-07** A study on Computer Aided Process Planning to allocate the operation sequence by referring to workpiece material Ryo Hamanaka, Eisuke Sogabe and Keiichi Nakamoto	**OS03-15** A method for structuring service use context based on the jobs theory Chisaki Okamura, S. Tsuji, M. Ashikari, F. Sayfullooh, N. Hara and Y. Shimomura	**OS05-18** Chatter Vibration Detection in Turn Milling Through Analysis of Sound and Acceleration Signals Ahmed MA Abdalla, Masahiko Sato and Akihiro Kubotsu	**OS15-29** Nano-Bubble Shape Deformation Investigation in Multi-Darkfield Optical Microscopy Hibiki Fujishima, Panart Khajornrungruang, Yuki Ohta
12:00-12:20	**GS11-20** Overcoming Single-Photon Detector Limitations in Quantum Ghost Imaging: A Data Processing Approach Elie Magnon, Yasuhiro Mizutani, Tsutomu Uenohara and Yasuhiro Takaya	**OS01-12** Measurement and Compensation of workpiece setup error in NC machining using a 3D scanner Daisuke Narita, Hayato Yoshioka and Zongwei Ren	**OS03-16** A cognition conflict resolution method for the appropriate design and operation of artifacts Kaito Uchiyama, R. Masumura, F. Sayfullooh and Y. Shimomura	**OS05-19** Visualization of Contact Phenomena on Surface Textures Generated by Ultrasonic Vibration Cutting Based on Photoelastic Method, Kota Takashima, N. Tsuji, H. Taura, K. Yanagisawa, A. Sakurada, D. Kono, K. Hara, H. Kawamura and H.	**OS15-30** Pellin-Broca Prism for Plenty of Multi- wavelengths in Evanescent Optical System with Chromatic Aberration Reducibility Shuka Ouchida, Panart Khajornrungruang and Yuki Ohta
12:20-12:40	**GS11-22** Applying Deep Learning to Far-field Intensity Distribution for Extreme Ultraviolet Mask Defect Inspection Based on Scatterometry I-Chih Huang, Jia-Han Li, Chao-Te Lee and Wen-Hao Chao		**OS03-17** A method to analyze the supply-demand structure of Product-Service Systems based on customers' and providers' logic Meinosuke Ashikari, C. Okamura, F. Sayfullooh and Y. Shimomura	**OS05-20** Development of Simulation Technique for Milling Process Superimposing Oscillation on the Feed Motion Yutaro Kawana, Kazuki Takahei, Burak Sencer and Norikazu Suzuki	**OS15-31** Evaluation of internal residual stress of injection molded-plastic parts through THz wave Weiyan Chen, N. Murata, M. Tachioka, N. Yagi, S. Wang and Y. Kajihara
12:40-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		
	Session 3-1-3: GS11 Opitcal metrology III	**Session 3-2-3: GS02/GS08 Design Atomic and close-to-atomic scale manufacturing**	**Session 3-3-3: OS03/OS23 Advanced system design and applications III Bio-medical engineering and applications I**	**Session 3-4-3: OS05 Advanced cutting technologies III**	**Session 3-5-3: OS15/OS14 Nano-scale measurements and calibrations VI Ultra precision controls**
Chair	Chair: Feng Gao	Chair: Julien Diperi	Chair: Akira Tsumaya (OS03) Hiroshi Seno(OS23)	Chair:Hiroyuki Sasahara	Chair: Tadahiko Shinshi
13:50-14:10	**GS11-23** Enhanced 3D Surface Profilometry of Chromatic Confocal Microscopy with Spatially Varying Richardson-Lucy Deconvolution Han-Ju Tsai, Wei-Chi Hung, Ching-Chia Yen and Liang-Chia Chen	**GS02-04** Investigation of Geometric Accuracy Characteristics of an Ultra-Precision Fine-Pitch Gear Measuring Machine Zhaoyao Shi, Kui Liao, Huixu Song, Zhongpu Wen and Bo Yu	**OS03-18** Design and Optimization of a Quasi-Abbe-Error-Free Three-Axis Platform for 12-Inch Wafer Metrology Hsi-Hui Lin, Y. Lu, H. Li, T. Han and L. Chen	**OS05-21** Brittle Fracture in Subsurface of Cemented Carbide Finished in Milling Iman Farhana Binti Juanih, Shoichi Tamura and Takashi Matsumura	**OS15-34** High-resolution ghost imaging with correlation learned neural network for defect inspection in a large area Shoma Kataoka, Y. Mizutani, T. Uenohara and Y. Takaya
14:10-14:30	**GS11-24** Spectroscopic measurement with machine learning for optical sensors employing an ultrashort pulse laser Yusuke Kobayashi, Dong Wook Shin, Ryo Sato, Hiraku Matsukuma and Wei Gao	**GS02-05** Enhancing Thin-Film Pressure Sensor Performance for Measuring Human Eyelid Pressure Using High-Precision Microarray Structures Teng-Jung Kao, Yu-Zhen Mao, Wen-Kai Li and Chun-Wei Liu	**OS03-19** A design improvement method for information-circulation design Yuma Yoshida, K. Uchiyama, R. Masumura, F. Sayfullooh and Y. Shimomura	**OS05-22** Cutting Process of Cemented Carbide in Peripheral Milling Kazuya Hatakeyama, Shoichi Tamura and Takashi Matsumura	**OS15-35** Depth Estimation For Autostereoscopic 3D Surface Measurement Using A Deep Encoder-decoder Network Sanshan Gao and Chi Fai Cheung
14:30-14:50	**GS11-25** Design of a Small-Angle Laser Scanning Ranging System with Stationary-Reference Qingzhao Yang, Liheng Shi, Lijiang Zeng and Guanhao Wu	**GS08-01** Fabrication of atomic-scale structures on gallium arsenide by tip induced local oxidation and post etching Yangyang Li, Jinyan Tang, Mao Peng and Yuan-Liu Chen	**OS03-20** A Theory for Finding Conceptual Voids in Creative Design Support, Morishima Taiki, K. Furuya, R. Masumura, F. Sayfullooh and Y. Shimomura	**OS05-23** Analysis of Cutting Process in Tapping Shun Nakahara, Shoichi Tamura, Takashi Matsumura, Ryosuke Sasaki, Ayaka Hirukawa and Maho Kumanotani	**OS14-02** Compound fuzzy control- based position tracking accuracy improvement method Hongfang Chen, Bailing Liu, Ziqi Liang and Zhaoyao Shi
14:50-15:10	**GS11-26** 2D displacement measurement with sinusoidal phase modulation interferometry Itsuki Nagaoka, Taku Sato, Masato Higuchi and Masato Aketagawa	**GS08-02** In-process monitoring of current for quality control in scanning probe oxidation lithography of atomic-scale structures Mao Peng, Jinyan Tang, Yangyang Li and Yuan-Liu Chen	**OS23-02** Development of Oral Sensor Based on Amine Film Formed on a Gold Surface for Sensing Bicarbonate Ion in Saliva Suwu Han, Kazuma Sasaki, Jyoti Jaiswal and Kazuyoshi Tsuchiya	**OS05-24** Analysis of Machining Process with Feed Rate Control in Drilling Tomoaki Sakamoto, S. Tamura, T. Matsumura, K. Kono and R. Sakamoto	**OS14-04** Effect of Additional Compensator Based on Internal Model Principle in Precision Motion Control Xuan Gan, Mizuki Takeda and Kaiji Sato
15:10-15:30	**GS10-02** Micro/nano vibration suppression of a flexible macro-micro manipulator Lingwei Meng, Yannan Mo, Zixuan Yu, Chen Wang and Yiling Yang	**GS02-02** Research on high-sensitivity force measuring guide apparatus for joule balance Peng Wu, Pengyue Zhao and Jianwei Wu	**OS23-01** Parameter Identification and Energy Capture Mechanism of Multi-degree-of-freedom Oscillating Float-type Wave Energy Conversion Structure under Random Loads, Deli Wang, W. Yang, B. Wu, X. Guo, Y. Xu, H. Pei and W. Xu	**OS05-26** High-speed X-ray imaging of grooving of steel workpieces using carbide end mills, S. Egawa, H. Motoyama, G. Yamaguchi, J. Guo, H. Yumoto, T. Koyama, H. Takano, Y. Hayashi, H. Ohashi, M. Yabashi and H. Mimura	**OS14-05** On the Stiff Spring Effect of Linear Ball Guides and its Functions towards Ultra Precise Positioning Shigeru Futami
15:30-16:30	**Poster Sessions & Coffee Break (Building C01 1F)**		**Poster Sessions & Coffee Break (Building C01 1F)**		
	Session 3-1-4: GS12 Dimensional metrology	**Session 3-2-4: GS14 Cyber-physical and digital twin production systems**	**Session 3-3-4: OS23 Bio-medical engineering and applications II**	**Session 3-4-4: OS05 Advanced cutting technologies IV**	**Session 3-5-4: GS03/GS05 Forming Electro-Physical, Chemical Processes**
Chair	Chair: Yuguo Cui	Chair: Ki-Nam Joo	Chair: Seiji Aoyagi	Chair:Norikazu Suzuki	Chair: Yongbo Wu
16:30-16:50	**GS12-02** R-test for identifying a kinematic model of articulated arm coordinate measuring machines Tomoaki Kashiwa and Soichi Ibaraki	**GS14-01** Suggestion and Investigation of Interlock System for Human Error using Modular Robot Kaoru Mitsuhashi	**OS23-03** Numerical and experimental verification of super-resolution imaging and phase recovery with structured illumination Shumpei Suzuki, S. Usuki, T. Sekine and K. T. Miura	**OS05-27** Hybrid cutting-forming tool for generating strengthened features Pratap Ashwani and Beaucamp Anthony	**GS03-01** Experimental Evaluation of a Flowability in Casting Using by Proposed New Test Method Hiraku Minoura, M. Nikawa, K. Mu and M. Yamashita
16:50-17:10	**GS12-04** High-accuracy measurement of wheel tread geometric parameters based on laser displacement sensors Qixin He, Hao Yuan, Jing Yang, Fajia Zheng and Qibo Feng	**GS14-03** Digital Twin-Driven Work Handling Charles Walker, Abhilash Puthanveettil Madathil and Xichun Luo	**OS23-04** Study on the relationship between the skin properties of the finger pad and vibration perception Taaki Takanari, T. Okuyama, C. Pailler-Mattei and M. Tanaka	**OS05-28** Cutting force in countersinking of rolled Titanium alloy Tomohiro Kikuchi, Shoichi Tamura, Katsufumi Inazawa and Takashi Matsumura	**GS03-03** Surface quality of titanium alloy upon pre-compression amount in compliant blisk polishing Tingyue Bai, Shuai Chen, Zhitong Chen and Zhenglong Fang
17:10-17:30	**GS12-07** Theoretical modeling of fluorescent confocal detection for surface position determination in dimensional measurement Motoya Yoshikawa, S. Masui, S. Kadoya, M. Michihata and S. Takahashi	**GS14-02** Enhancing Nanostructure Image Generation Through Physical Rendering Wei-Cheng Jiang and Chao-Ching Ho	**OS23-05** Effects of applied voltage on electroporation to cell using polypyrrole electrode F. Iimura, S. Amaki, S. Koeda, T. Kono, H. Miyoshi and A. Kaneko	**OS05-29** Effect of Minimum Quantity Lubrication on Cutting Force in Shoulder Milling of Titanium Alloy Hiroyasu Kondo, Shoichi Tamura and Takashi Matsumura	**GS03-05** Effect of Chromium Carbide Coating on Mold Releasability from Ground Surface in Compression Molding of Thermosetting Phenol Resin Ryoji Kitada, C. Sun, Q. Wang, K. Yoshida and A. Okada
17:30-17:50	**GS12-10** Optical calibration system for resin gauges used in X-ray CT M. Watanabe, K. Matsuzaki, O. Sato, M. Kajima and T. Watanabe		**OS23-08** Injection Molding of PLA Microneedles Mimicking Mosquitoes Natsuo Otera, D. Yamaguchi, Y. Nakata, S. Kaku, M. Suzuki, T. Takahashi, S. Aoyagi, K. Suzuki, Z. Haga and Y. Tanigawa	**OS05-30** Real-Time Material Removal Rate Expert System Based on Support Vector Regression Yi-De Jang, Ke-Er Tang and Chun-Wei Liu	**GS05-02** Observation of growth behavior of silver precipitates in glass Hirofumi Kawamura, K. Meguro, S. Matsusaka, K. Hara and H. Isobe
17:50-18:10	**GS12-12** Experimental characterization of contact stiffness using an on-machine measurement device Kaho Hirano, Atsushi Matsubara and Kotaro Mori			**OS05-33** Effect of disturbance and tool condition on cutting temperature measurement by utilizing tool-work thermocouple method Takumi Minowa, Masatoshi Usui and Hiroyuki Sasahara	
18:10-19:30	**Farewell Party (School of Engineering, Tohoku University)**		**Farewell Party (School of Engineering, Tohoku University)**		

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08:30-08:50	**Registration 08:30-17:00 (Building C01, School of Engineering)**		**Registration 08:30-17:00 (Building C01, School of Engineering)**		
	Room 6	**Room 7**	**Room 8**	**Room 9**	**Room 10**
	Session 3-6-1: OS13 Robotics and mechatronics I	**Session 3-7-1: OS08 Nano-scale surface finishing I**	**Session 3-8-1: OS09 Non-traditional machining and additive manufacturing II**	**Session 3-9-1: GS10 Precision positioning I**	**Session 3-10-1: OS11 Advanced machine tools and elements I**
Chair	Chair: Tadahiko Shinshi	Chair: Syuhei Kurokawa	Chair: Atsutoshi Hirao	Chair: Kefei Wen	Chair: Yohichi Nakao Ryuta Sato
08:50-09:10	**OS13-01** Visual odometry equipment of mobile robots based on moving-image processing of road surface for inspecting outdoor underground facilities Toya Kaneko, T. Kosakai, Y. Ebina, M. Mizukami and S. Mochizuki	**OS08-02** Development of a 3-DOF topology- optimized compliant mechanism for shear-thickening fluid polishing Airi Umezawa, Ashwani Pratap and Anthony Beaucamp	**OS09-01** Influence of Dielectric Oil Cooling-Effect on Wire EDM Characteristics Shixian Liu, Ren Sakata, Akira Okada and Tomohiko Kitamura	**GS10-03** Compensation of Axis-coupled Inertial Forced Vibrations using Machine Tool Feed Drives Kaan Bahtiyar, Eiji Shamoto and Burak Sencer	**OS11-01** Fundamental Grinding Characteristics of Trial Manufactured Desktop Type Grinder Masakazu Fujimoto, Yuki Inoue and Tomoya Yamamoto
09:10-09:30	**OS13-03** Novel Force Decoupling Admittance Control of Linear Motors for Grinding Applications Jietian Li, Beichen Ding, Yu Yin and Han Huang	**OS08-06** Fluid jet polishing of stainless-steel optical molding inserts Ashish Kumar, Ashwani Pratap and Anthony Beaucamp	**OS09-02** Non-Circular Section Machining of Glass with Lathe-Type Electrochemical Discharge Machine Katsushi Furutani and Toshiki Irie	**GS10-04** Iteratively Evaluation-feedback Learning Control Mechanism for Grouped Systems with Similar System Parameters Zhiying He, Hongji Pu and Fangyan Zheng	**OS11-02** Virtual Material Contact Model for Estimation of Vibration Characteristics of Jointed Structure Reiji Hirasawa and Daisuke Kono
09:30-09:50	**OS13-05** Development of a Bearing Hub Unit with Embedded Tri-Axis Force Sensor Daisuke Matsuura, Yudai Baba and Tsune Kobayashi	**OS08-07** Optimization of oscillation control by simulation for uniform polishing amount in ECMP processing of SiC wafers Aoi Kaneko, Rongyan Sun, Yuji Ohkubo and Kazuya Yamamura	**OS09-07** Development of A Novel Near-Dry Mist-Electrical Discharge Machining - An Environment-Friendly Precise Process Albert Wen-Jeng Hsue and Tsung-Rei Lin	**GS10-05** Study on Positioning Accuracy of Si Chips in Noncontact Holding by Non-contact Chuck Utilizing Ultrasonic Squeeze Effect Seiji Sato, M. Miyatake, H. Kikuchi and H. Hishinuma	**OS11-03** Estimation of Spindle Dynamic Compliance Using the Coil Current of a Contactless Electromagnetic Loading Device Kai Iwai, Shuntaro Yamato and Atsushi Matsubara
09:50-10:10	**OS13-08** Robot grasping based on deep learning and three-dimensional information Bang-Wei Yu, Yu-Ling Liu and Hung-Yin Tsai	**OS08-08** Surface polishing of YAG ceramics using catalyst-referred etching Yusuke Yoshida, Kiyoto Kayao, Daisetsu Toh, Jumpei Yamada, Kazuto Yamauchi and Yasuhisa Sano	**OS09-28** Modeling of parallel discharge mechanisms in multi-wire EDM Junming Guan, Yijin Zhong and Yonghua Zhao	**GS10-06** A New Absolute Capacitive Angular Displacement Sensor with Single-track Structure based Time-grating Xingchen Fan, W. Dan, X. Hu, Z. Yu and H. Pu	**OS11-04** Proposal and prototype design of a new machine tool configuration with multiple spindles Kianoosh Rossoli and Soichi Ibaraki
10:10-10:30	**OS13-09** Pneumatic robot arm for assisting in power line maintenance Kouga Narita, Hiroaki Seki, Tokuo Tsuji, Tatsuhiro Hiramitsu, Takehiro Nagata, Kazushige Matsumoto and Taiki Imada	**OS08-09** High-efficiency Polishing of GaN(0001) Substrates Using Catalyst-referred Etching Assisted by Photoelectrochemical Reaction Kiyoto Kayao, T. Fukagawa, D. Toh, J. Yamada, K. Yamauchi and Y. Sano	**OS09-19** In-process X-ray observation of electrical discharge machining revealing electrode behavior inside metal workpiece, Hiroto Motoyama, S. Egawa, G. Yamaguchi, J. Guo, H. Yumoto, T. Koyama, H. Takano, Y. Hayashi, H. Ohashi, M. Yabashi and H. Mimura	**GS10-07** Control Design for a Precision Positioning Stage Employing Real-Time AI Model Estimation Fu-Cheng Wang, C. Wen, M. Chang, Y. Chang and P. Chung	**GS13-04** Multi-Spindle Calibration for Thermal Error Compensation of Mill-Turn Machines Lang Sebastian, F. Juliuc, M. Josef, W. Konrad and B. Markus
10:30-11:00	**Coffee Break (Building C01 1F)**		**Coffee Break (Building C01 1F)**		
	Session 3-6-2: OS13 Robotics and mechatronics II	**Session 3-7-2: OS08 Nano-scale surface finishing II**	**Session 3-8-2: OS09 Non-traditional machining and additive manufacturing III**	**Session 3-9-2: GS10 Precision positioning II**	**Session 3-10-2: OS11 Advanced machine tools and elements II**
Chair	Chair: Daisuke Matsuura	Chair: Yasuhisa Sano	Chair: Tomohiro Koyano	Chair: Xiaohua Liu	Chair: Yukitoshi Ihara Hayato Yoshioka
11:00-11:20	**OS13-11** Sensorless rotor positioning for a bearingless slice doubly salient permanent magnet motor Zeqiang He and Tadahiko Shinshi	**OS08-10** Magnetic Field-assisted Mass Polishing of Optical Glasses Yee Man Loh, Chunjin Wang, Rui Gao, Lai Ting Ho and Chi Fai Cheung	**OS09-05** Effect of Amplitude on Ultrasonic Vibration Assisted EDM of SKD 61 Steel: Theoretical Analysis and CFD Study Chenxue Wang, Tomohiro Sasaki and Atsutoshi Hirao	**GS10-08** Investigation of distance measurement reproducibility for a long-range nanopositioning machine combined with a laser focus sensor Davi Anders Brasil, S. Hesse, M. Katzschmann, L. Herzog, T. Fröhlich and T. Kissinger	**OS11-06** Chuck with integrated clamping force measurement for thin-walled workpieces Berend Denkena, Henning Buhl, Eike Wnendt and Matthias Meier
11:20-11:40	**OS13-12** High-speed coating inspection robot for suspended box-shaped objects Shota Iwasaki, Hiroaki Seki, Tokuo Tsuji and Tatsuhiro Hiramitsu	**OS08-11** Correction of Mid- and Low-Spatial Frequency Errors in Silicon Mirrors via Dehydration Polishing Bing Wu, Shengnan Zhang and Hui Deng	**OS09-06** Melt Pool Observation in Ultrasonic Vibration-Assisted Directed Energy Deposition Yuya Hagihara, Y. Miyata, T. Mori, I. Yamaji, W. Cong and D. Kono	**GS10-09** Floating support properties of fine feed table for non-contact support with squeezed-air effect Yuma Tamaru, Tomohiro Ushijima and Hiroki Shimizu	**OS11-07** Compensation of strain gauge signal changes due to position-based internal changes in sensory linear guides Berend Denkena, H. Buhl, D. Kowalke, R. Ottermann and M. C. Wurz
11:40-12:00	**OS13-1**3 Displacement of a mechanism using piezoelectric element and??electropermanent magnet Takeshi Inoue, Takato Sakai, Akihiro Torii, Suguru Mototani and Kae Doki	**OS08-12** Mechanism Study on Polishing of Single-Crystal Silicon with Gas Cluster Ion Beam Yuan Xie and Hui Deng	**OS09-03** Enhancing Formability of SiCp/Al Composites through Ultrasonic Compression Molding Zhen Li, Zhengji Yang and Liangchi Zhang	**GS10-10** Evaluating Scale Pitch Deviation with Differential Angle Sensors Utilizing Optical Lever and Laser-Autocollimation Methods Jiucheng Wu, L. Quan, Y. Shimizu, R. Sato, H. Matsukuma and W. Gao	**OS11-08** Development of Machine Tool Spindle for Non-axisymmetric and Non-circular Inner Cylinder Machining Masayuki Obata, Y. Morimoto, M. Oshima, A. Hayashi and K. Segawa
12:00-12:20	**OS13-04** Design of inchworm stick-slip composite piezoelectric linear motor Mengtao Luo, Yuguo Cui, Yiling Yang, Rongxi Liang and Xing Tang	**OS08-13** Microwave plasma-assisted polishing of poly-crystalline diamond Xinyu Li and Hui Deng	**OS09-12** An experimental investigation on magnetic field assisted ultra-precision diamond machining of microgrooves on titanium alloy surfaces Linhe Sun, Suet To and Wai Sze Yip	**GS10-11** Reduction of crosstalk errors in a two-axis grating interferometer with an Improved Z-Range Yifan Hong, Ryo Sato, Hiraku Matsukuma and Wei Gao	**OS11-12** FEM Analysis for Torsional Stiffness of a Leaf- Spring Type Coupling Considering Contact Surface Characteristics Yuta Kondo, R. Sato, E. Shamoto and T. Sasaki
12:20-12:40	**OS13-14** Design and Performance of Surgical Robotics End-effectors for Precise Manipulation of Biological Samples. Elia Martinelli, H. Lin, S. Pérez, K. Harada and Andreas Archenti	**OS08-14** Study on the conformal polishing process of NiP grating microstructures based on SiO2/ Al2O3 composite abrasives Chuhong He and Hui Deng	**OS09-11** Research on the material removal behavior of SiC f /SiC composites during ultrasonic assisted scratching Yichuan Ran, G. Yuan, Y. Bao, X. Zhu, S. Gao and R. Kang	**GS10-12** Implementation of the Torque Limit Skip for Thermal Error Measurement on Precision Machine Tools Petr Kaftan, F. Porquez, J. Mayr, K. Wegener and M. Bambach	**OS11-13** Modeling of friction characteristics in feed drives and its application to dynamics prediction of machine tools Yosuke Higuchi and Yasuhiro Kakinuma
12:40-13:50	**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		**Lunch (Building C01 1F Cafeteria & B02 2F Lunch Box)**		
	Session 3-6-3: OS17 Mechano-photonics engineering and optical applications I	**Session 3-7-3: OS08 Nano-scale surface finishing III**	**Session 3-8-3: OS09 Non-traditional machining and additive manufacturing IV**	**Session 3-9-3: OS07 Micro/Nano machining and figurings I**	**Session 3-10-3: OS11/GS13 Advanced machine tools and elements III Machine tool metrology and calibration**
Chair	Chair: Lianhua Jin	Chair: Norikazu Suzuki	Chair: Ryo Koike	Chair: Yutaka Yamagata	Chair: Yasuhiro Kakinuma Ako Hayashi
13:50-14:10	**OS17-04** Effect of fabrication defects on terahertz wave control characteristics of dielectric metamaterials operating in the terahertz region Kohei Chiba, Taiyu Okatani, Naoki Inomata and Yoshiaki Kanamori	**OS08-15** Chemical-Assisted Magnetic Compound Fluid Polishing of TA1 Capillary Inner Surface Wentao zhang, Yufen Xue, Yangke Zheng, Hanqiang Wu and Yongbo Wu	**OS09-08** Machine learning application in Laser forming - Predicting scanning paths with CNN and structured patterns - Ping-Hsien Chou, T. Miyake, K. Yamada, Y. Hwang, E. Sentoku, R. Tanaka and K. Sekiya	**OS07-01** Thermal effect on the mechanical properties of monocrystalline silicon under nanoindentation: a molecular dynamics analysis Yifan Li, Liangchi Zhang	**OS11-16** Experimental study on temperature-dependent spindle vibration analysis with in-process measurements Jihui Liu, S. Tanaka, Y. Liao, K. Nakanishi, S. Nakamura, T. Kizaki and N. Sugita
14:10-14:30	**OS17-05** Development of deformable mirror with bonded multiple piezoelectric substrates for high spatial frequency shape control Maaya Kano, Takato Inoue, Junya Yoshimizu, Toma Ueyama and Satoshi Matsuyama	**OS08-16** Atomic-Level Smoothing of Silicon Surfaces Using a PMMA Plate in Water: Understanding the Chemical Mechanism Jianli Guo, Satoru Egawa, Hiroto Motoyama and Hidekazu Mimura	**OS09-14** Numerical Analysis of Atmospheric Pressure Inductively Coupled Argon Plasma Xinyang Wei, I. Noto, R. Sun, Y. Ohkubo and K. Yamamura	**OS07-02** Deformation and cracking mechanisms of single crystal indium phosphide induced by nanoscratch Xuliang Li, Mingyuan Lu and Han Huang	**OS11-17** Study of technology for fine conditioning of pad surfaces with fiber conditioner in CMP Haruki Hashimoto and Takashi Fujita
14:30-14:50	**OS17-06** Study on AI-driven Optical Distribution Measurement without Forming Images - Development of Rapid Phase Distribution Measurement Method- Ryuuma Akao, Y. Guan, S. Masui, S. Kadoya, M. Michihata and S. Takahashi	**OS08-17** Synthesis of nano-sized cerium oxide particles for chemical mechanical polishing of quartz glass and evaluation of their polishing properties Xianglong Liu, Akihisa kubota, Makoto Tokuda and Tsutomu Mashimo	**OS09-09** Study on Surface Smoothing of Metal Lattice Structures by Large area Electron Beam Irradiation Method Seiya Miura, T. Shinonaga, A. Yamaguchi and A. Okada	**OS07-09** One-step dry etching of engraved silica nanocones with plasma-induced film-dewetted masks Jin Hu and Shaolin Xu	**OS11-21** The improvement of thermal error modeling on machine tools by optimal selection of temperature measuring points Lei Cao, Gyungho Khim, Seung-Kook Ro and Chun-Hong Park
14:50-15:10	**OS17-07** Numerical analyses of trapping behavior of contour-tracking optical tweezers Ryohei Omine, S. Masui, S. Kadoya, M. Michihata and S. Takahashi	**OS08-18** Tip-based nanofabrication on a hydrogen-terminated diamond surface by electrochemistry Jinyan Tang, Mao Peng, Yangyang Li and Yuan-Liu Chen	**OS09-17** Joining of Additive Manufactured Metals via Friction Welding Technology Fatma Nur Depboylu and Andrei-Alexandru Popa	**OS07-03** Elliptical vibration ruling of pixelated blazed gratings for the fabrication of anti-counterfeiting structural colors Mengying Luan, J. Yu, P. Feng, F. Feng and J. Wang	**OS11-11** Reduction of vibration during machining by applying cast iron with excellent damping properties to the structure Taiji Yamada, S. Irako, T. Kizaki, N. Sugita, M. Sakada, T. Umetani and N. Kai
15:10-15:30	**OS17-08** Three dimensional measurement of hand scraped surface by an oblique incident interferometer using a near infrared laser source Takumi Yamagishi, So Ito, Kimihisa Matsumoto and Kazuhide Kamiya	**OS08-19** Planarization of substrate with metal wiring using catalyst-referred etching -Etching characteristic of wiring metal- Hiroto Yamasaki, K. Kayao, D. Toh, J. Yamada, K. Yamauchi and Y. Sano	**OS09-10** Selective Laser Melting of AlCoCrMoNbNi Refractory High-Entropy Alloy with Titanium and Carbon Nanoparticle Additions: Exploring the Microstructure and Crack Propagation Mechanisms, Meng-Hsiu Tsai, Yu-Chieh Chuang	**GS07-08** Laser-assisted fabrication of micro-structured surface with hierarchical roughness on single-crystal silicon Changlin Liu, Wai Sze Yip and Suet To	**GS13-03** Analysis and modeling of volumetric error of ultra-precision grinding machine Ruyue Wang, Y. Cai, S. Fu, H. Sun, X. Zhu, X. Guo, Z. Dong and R. Kang
15:30-16:30	**Poster Sessions & Coffee Break (Building C01 1F)**		**Poster Sessions & Coffee Break (Building C01 1F)**		
	Session 3-6-4: OS17 Mechano-photonics engineering and optical applications II	**Session 3-7-4: OS08 Nano-scale surface finishing IV**	**Session 3-8-4: OS09 Non-traditional machining and additive manufacturing V**	**Session 3-9-4: OS07/OS22 Micro/Nano machining and figurings II MEMS/NEMS**	**Session 3-10-4: OS16 Science and applications of nanostructure formation**
Chair	Chair: Jessica Onaka	Chair: Hirokuni Hiyama	Chair: Atsushi Ezura	Chair: Keita Shimada (OS07) Kazuyoshi Tsuchiya (OS22)	Chair: Jun Taniguchi
16:30-16:50	**OS17-09** In-situ measurement of photoluminescence and electroluminescence of porous silicon under electrochemistry oxidation Lianhua Jin, Kota Fukumoto and Bernard Gelloz	**OS08-20** Highly Efficient Etching of GaN (0001) Substrate by Photoelectrochemical Etching Tatsuya Fukagawa, K. Kayao, T. Daisetsu, J. Yamada, K. Yamauchi and Y. Sano	**OS09-20** In-situ characterization of molten pool evolution via high-speed imaging of laser powder bed fusion Yoshiki Sakai, H. Suzuki, L. Chen, Y. Ito and K. Nagato	**OS07-11** Comparative Study about Various Ultraprecision Machine Tools in Mid-Spatial-Frequency Waviness Generation on Optical surface Yan Wei, M. Takeda, T. Hosobata, Y. Yamagata and S. Morita	**OS16-04** In-situ Calibration Method for Areal Surface Measurement Technique Based on Thickness Distribution of Fluorescent Liquid Film Saeko Fujii, M. Yoshikawa, S. Masui, S. Kadoya, M. Michihata and S. Takahashi
16:50-17:10	**OS17-11** Development of ultrathin deformable mirror for wavelength-variable sub-10 nm X-ray focusing Toma Ueyama, T. Inoue, J. Yoshimizu, M. Kano, K. Kanazaki, R. Minamisawa and S. Matsuyama	**OS08-22** Electrochemical shear thickening polishing of single crystal silicon carbide Mengmeng Shen, Wei Hang, Hongyu Chen, Binghai Lyu and Yunxiao Han	**OS09-21** A new characteristic method for Directed Energy Deposition (DED) additive manufacturing based on point cloud analysis Hao Xue, L. Ye, Y. Wang, F. Xu, C. Liu, S. Tammas-Williams and N. Yu	**OS22-02** Free standing diamond nanostructures formed by sacrificial layer etching for nanoelectromechanical actuators Taro Ikeda and Yoshiaki Kanamori	**OS16-03** Antibacterial Spectra of Nanosized Resin Pillars with Different Shapes Satoka Matsumoto, S. Tanaka, H. Tatsuoka, M. Yoshii, T. Nagao, T. Shimizu, S. Shingubara and T. Ito
17:10-17:30	**OS17-12** Analysis of Thermally Excited Evanescent Waves on Dielectrics by a Spectroscopic System Wentao Zhou, Ryoko Sakuma, Kuan-Ting Lin and Yusuke Kajihara	**OS08-23** Fixed-abrasive electrochemical mechanical polishing of single-crystal silicon Xiaozhe Yang, Shenglong Zhang, Xu Yang, Kazuya Tamamura and Zhuangde Jiang	**OS09-26** Development of deposition height control system for GTAW-based additive manufacturing Masahiro Kawabata, T. Sasaki, K. Wada, S. Kanemaru, Y. Nomura and H. Sasahara	**OS22-04** Design of a device for surface profile measurement integrating 3x3displacement sensors Kotaro Nakahara, T. Noda, N. Shirozu, Y. Tamaru and H. Shimizu	**OS16-01** Fabrication of functional microstructures on Cu surface using solid-state anodic dissolution at the polymer electrolyte membrane/Cu interface Atsuki Tsuji and Junji Murata
17:30-17:50	**OS17-13** Development of ultraprecise X-ray multilayer mirrors for nanometer-resolution phase-contrast imaging Kota Shioi, J. Yamada, G. Yamaguchi, D. Toh, K. Yamaguchi, M. Yabashi and Y. Sano		**OS09-13** Investigation of the influence of base metal size on residual stress and deformation in directed energy deposition Kaito Sekiguchi, Y. Miyata, S. Sugimoto, T. Abe and J. Kaneko	**OS09-27** Study of GaN anodization characterization for electrochemical mechanical polishing Xu Yang, L. Zhu, X. Yang, K. Yamamura and Z. Jiang	**OS16-02** Development of laser assisted electrodeposition system without a solution cell Yuki Tamura, Kenta Nakazawa and Futoshi Iwata
17:50-18:10	**OS17-14** A femtosecond laser confocal probe for multi-dimensional measurement Chen Li, Ryo Sato, Hiraku Matsukuma and Wei Gao		**OS09-23** Investigation of the effect of gravity on melt pool formation in powder bed fusion using simulation Yoshitomo Ichise and Ryo Koike	**OS05-31** Force servo assisted single point diamond cutting mechanism and technology for hard and brittle surface substrates Hui Li, Zhongwei Li, Kaiyang Xia and Yuanliu Chen	
18:30	**Farewell Party (School of Engineering, Tohoku University)**		**Farewell Party (School of Engineering, Tohoku University)**		

Poster (Building C01 1F)		Poster (Building C01 1F)	
GS06-04 Laser-guided Anisotropic Etching for Precision Machining of Micro-engineered Glass Components Jun Li and Shaolin Xu	GS12-11 Improving the accuracy of workpiece pose estimation of robotic bin picking from stationary and mobile depth cameras Pung Kyu Lee, Seongin No and Huitaek Yun	OS07-14 Study on Ductile Mode Cutting in Micro Machining of Glass Ji Hyo Lee, Ja Yeon Kim and Bo Hyun Kim	OS18-02 A 3D surface reconstruction method employing adaptive determination strategy for high reflective surface Bo Zhang, Shangcheng Qu, Jinhui Li, Zhiyong Deng, Ji Li, Kai Liu and Bin Xu
GS06-10 Iterative design of patterned laser spot for customized micro-grooving Pei Qiu and Shaolin Xu	GS13-01 Development of Adhesion Evaluation Equipment for Nano Diamond Coating using Blasting Method JingHua Li, HyunKyu Kweon and SangJun Park	OS08-04 Removal characteristics of single crystal diamond (111) substrate by vacuum-ultraviolet assisted polishing Sora Ninomiya and Akihisa Kubota	OS18-07 Hydroponic Crops Modeling and Growth Predic-tion Shingo Aoyagi, Sho Yamauchi and Keiji Suzuki
GS07-05 Effect of cobalt content on ultra-thin diamond blades by fused deposition modeling and sintering: blade properti es and machined surface quality Tao He, Shaohe Zhang, Xiangwang Kong, Linglong Rong, Jingjing Wu, Suet To and Wai Sze Yip	GS14-04 Optimization of machining programs using machine tool digital twin Chang-Ju Kim, Segon Heo, Chan-Young Lee and Jung-Seok Oh	OS08-05 Polishing methods for large-area mosaic diamond substrate Keiji Kasamura, Yusuke Shirayanagi, Hiroki Toyoda, Shingo Tomohisa, Takashi Takenaga and Akihisa Kubota	OS20-02 Study on mechanism of surface instability in Sn-Bi alloy lapping plate Bei Hu, Wenjun Zhou and Kensuke Tsuchiya
GS07-08 Research on Topology Optimization Techniques for Lightweight Design of 3D Printer-Based Cutting Tools JingHua Li, HyungKyu Kweon, GooSang Jung, DongGil Ahn and Ujong Kim	GS15-13 The effect of data synthesis and regression prediction model for gas electronic nose system Hongyang Xiao, Qiang Shen, Cao Xia, Yuanlin Xia and Zhuqing Wang	OS09-22 Additive-manufacturing-inspired control for the uniform placement of abrasive grains in grinding wheels Haruki Matsuzuka, Yoshinori Izawa, Toru Kosemura and Masayoshi Mazutani	OS20-10 W-Ti alloy films prepared by dual source dc magnetron sputtering Hibiki Okada and Shozo Inoue
GS07-09 Research on multi-head design of metal binder jet 3D printer JingHua Li, SangJung Park, HyunKyu Kweon, GooSang Jung, JinUng Jeon and DoHwan Lee	OS01-03 Diaphragm bellows fatigue prediction using structural simulation Doyoon Jeon, Junyeong Lee and Seungmo Kim	GS10-01 Trajectory positioning error compensation and verification for six-axis industrial robot Yu-Ta Chen, Bo-Kuan Lee, Ming-Fu Chen and Chien-Sheng Liu	OS20-11 The effect of ion irradiation on the growth of sputtered metal thin films Tatsuhiro Inoue, Shinpei Nagai and Shozo Inoue
GS07-11 Evaluation on mechanical characteristic of filament wire fabricated under high shear rate Hiroshi Koresawa, Akira Hidaka, Yuta Kichiji, Masaki Ishii and Hiroyuki Narahara	OS03-09 A novel design for elliptical vibration boring system Yunxiang Zheng, Cheng Hu, Mao Wang, Zongpu Wu, Jianguo·Zhang and Jianfeng Xu	OS10-02 Laser Treatment Induced Two-Way Shape Memory Effect on different thickness TiNiCu films Chihiro Nara, Takahiro Kurosawa, Daijiro Tokunaga, Atsushi Hirata, Jumpei Sakurai and Yuko Aono	OS21-12 Fabricating micropatterned yttria-stabilized zirconia using UV nanoimprint lithography Takuto Wakasa, Takao Okabe, Naoki Shikazono and Jun Taniguchi
GS07-12 Effects of particle size and CNT addition on mechanical properties of porous cemented carbides sintered using Ni coated WC particles Daiki Abe, Tsunehisa Suzuki, Tatsuya Fujii, Matsuyoshi Nomura, Mitsutaka Sato and Koichi Harada	OS05-11 The Machinability of Free-Cutting Cemented Carbide by Diamond-Coated Ball—End Tools Kota Toyooka, tetsuo Samukawa, Masafumi Nagata, Kazuhiro Tezuka and Haruiko Suwa	OS11-05 A direct method for the normal stiffness of an aerostatic slide considering the fluid structure interaction effect Wenyuan Wei, Qiang Gao and Lihua Lu	OS21-16 Efficient Processing of Consistent Inverted Pyramid Microstructure on Monocrystalline Silicon Surface Qingwei Wang, Peng Yao, Dongkai Chu, Shuoshuo Qu, HongTao Zhu, Hanlian Liu, Bin Zou and Chuanzhen Huang
GS09-01 Influence of radical cleaerance on fault frequency in cylindrical roller bearings Geng Hou and Liangchi Zhang	OS06-08 Towards Uniformity and Efficiency: Managing the Free-Form Surface Polishing through Kinematic Analysis and Trajectory Planning Zipu Yan and Liangchi Zhang	OS11-09 Prediction of thermally induced motorized spindle displacement using cooling fluid temperature Ryota Ishida, Shumon Wakiya, Jumpei Kusuyama and Yohichi Nakao	OS23-06 Finite Element Analysis for Hydrogel Microneedle on Skin Puncture Model And Mechanical Performance Evaluation Shu Huang, Zhen Peng, Cao Xia, Yuanlin Xia and Zhuqing Wang
GS09-03 Experimental study on tribochemical wear of diamond on quartz surface Itsuki Otsubo and Akihisa Kubota	OS06-15 Effect of Ultra-fine bubbles coolant on SF truing of resin bonded coarse diamond wheel Muzhi Li, Shinichi Nimomiya, Satoshi Anzai, Tetsuo Nomura and Manabu Iwai	OS11-10 Feasibility study on direct immersion cooling for mechanical devices Genki Uchiyama, Jumpei Kusuyama and Yohichi Nakao	OS06-20 Direct observation of the clogging development during the grinding process Haonan Ren, Toru kizaki, hiroyuki Kamura, Takayuki Nishizawa, Chao Wang and Naohiko Sugita
GS10-13 Enhancing Positioning Accuracy of a Parallel Kinematic Manipulator through Machine Learning-Embedded Self-Calibration Strategies Yu-Jen Chiu, Syamala Jaya Prakash Reddy and Cheng-Kuo Sung	OS06-17 Ionic conductivity and mechanical properties of electrolytic grinding tool consisting of diamond/PEO solid polymer electrolyte Taiyo Nakamura, Tsunehisa Suzuki, Tatsuya Fujii, Mitsuyoshi Nomura and Takashi Mineta	OS11-14 Evaluation of air-cooling effect improvement using heat dissipating paint Runfeng Zhao, Rin Takamizawa, Hiromitsu Wada, Naohiko Suzuki, Yoshiyuki Kaneko and Yohichi Nakao	GS11-02 High precision and sensitivity anti-interference 3D coherent ranging based on dual reversely chirped self-mixing lasers Chenxiao Lin and Yidong Tan
GS11-07 Laser-based method for simultaneously measuring length and straightness based on a single quadrant detector Ying Zhang, Fajia Zheng, Jing Yang, Fei Long, Bin Zhang and Qibo Feng	OS06-19 Effect of CNT addition on the curing process in molding of CNT composite phenolic resin bonded grinding tools Ryoga Tsuiki, Tsunehisa Suzuki, Tatsuya Fujii, Mitsuyoshi Nomura and Tomoya Abe	OS12-07 Analysis of Minimization-Conscious Colonoscope Insertion Device Yuichi Nakazato, Naoki Takahashi, Taisei Furukawa, Hikari Kyushiki, Kensuke Takita and Masaru Higuchi	OS18-05 YOLOv8 Model-based Welding Defect Detection and its Dimension Measurement Yindi Cai, Dianpeng Zhang, Yuxuan Wang, Zimeng Sun, Shang Gao, Zhigang Dong and Renke Kang
GS11-16 Structured illumination white-light scanning interferometry microscope Min Seo Cho and Ki-Nam Joo	OS07-04 High-efficiency real-time digital twin-driven slow- tool-servo freeform diamond turning Qi Liu, Xichun Luo, Wenkun Xie, P. M. Abhilash, Charles Walker and Rajeshkumar Madarkar	OS13-15 Drone flight path generation with LLM Atori Ikeyama, Sho Yamauchi and Keiji Suzuki	GS11-19 A real time and accurate vibration measurement method based on an event camera Xing Qu, Chunyang Ma and Shuming Yang
GS11-21 Measurement system and experiment of structural deformation with six degrees of freedom in a thermal vacuum environment Fajia Zheng, Qibo Feng, Bin Zhang, Jing Yang, Fei Long and Ying Zhang	OS07-06 Experimental Investigation on Ultrasonic-assisted Ultraprecision Turning of Zinc Selenide Spherical Surface with Straight-nosed Diamond Tools Minghan Chen, Linhe Sun, Hongqiang Qi, Hanqiang Wu and Yongbo Wu	OS16-05 Formation of Anti-reflection Structures on Polyimide via Oxygen Ion Beam Irradiation Yoritaka Danjo and Jun Taniguchi	**OS17-10** Design and Performance Evaluation of an Eye- tracking System Based on an Electrostatic MEMS Scanning Mirror, Haoyu Tan, Yifei Li, Xiang Guo, Yisen Hu, Cao Xia, Yuanlin Xia and Zhuqing Wang
GS12-01 Design and Realization of Three-line Step Height and Surface Roughness Certified Reference Materials Sunghoon Eom and Jonghan Jin	OS07-07 Investigation on the surface integrity and subsurface damage of SiCp/Al by in-situ laser assisted diamond cutting Mao Wang, Zongpu Wu, Yunxiang Zheng, Kai Huang, Jianguo Zhang and Jianfeng Xu	OS17-01 Evaluation of The “True Value” of Images Generated by Generative Adversarial Networks Using Depth Information Stereo Matching Kent Kumagai, Tomohiro Takami and Dong Wei	
GS12-03 Simulation Study on the Measurement of Fuel Rod Oxide Layer Thickness by Eddy Current Ji Li, Zhiyong Deng, Sanjie Gao and Bin xu	OS07-12 GRA-RSM Analysis of Surface Features Fusion for Micro-Milling UD-CF/PEEK Composites Da Qu, Qiwei Wu, Zhihang Li, Xiaoyu Ma, Jianwei Ji, Yang Song and Yong Ma	OS17-02 Study on Filter Determination in Time-Frequency Domain for Reconstruction of White-Light Interference Fringe Envelopes Ryota Kobayashi and Dong Wei	
GS12-05 A point-by-point probing method for roundness metrology of small cylinders with the coordinate measuring machine Jiali Zhao, Zihan Wang, Yan Zhao and Qiaolin Li	OS07-13 Effects of crystal plane and crystal direction in elliptical-vibration-assisted cutting of single crystal magnesium fluoride Hiraku Kodama, Ryomei Takabayashi, Shun Fujii, Takasumi Tanabe and Yasuhiro Kakinuma	OS17-03 Image Classification Neural Network Model to Determine the Presence of White Interference Fringes Buried in Noise - Study of improving detection accuracy using phase information Taketo Miura, Naru Hasegawa and Dong Wei	