

Room 1

Session 3-1-1: GS11 Optical metrology I

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

GS11-10 Precise Angular Alignment of Birefringent Axes for Polarization Maintaining Fiber Based Electrooptic Sensing Probe

Seung Kwan Kim and Sun Do Lim

GS11-11 An optical sensor for three-axis angle measurement employing imaging sensors

Misaki Hosoya, Ryo Sato, Jiucheng Wu, Hiraku Matsukuma and Wei Gao

GS11-12 The centroid-based automatic segmentation and weighted localization algorithm for the center of the focused laser spot

Huixu Song and Qingwei Li

GS11-14 Six Degree-of-freedom Pose Metrology Based on Dual-comb Ranging

Ruilin Jiang, Jinming Li, Lijiang Zeng and Guanhao Wu

Session 3-1-2: GS11 Optical metrology II

GS11-15 Straightness measurement with laser beam and deep learning

Ukyo Takata, Satoru Takano, Yohei Yamada, Toshinori Yasuhara, Kohsei Terao and Masato Aketagawa

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

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

GS11-20 Overcoming Single-Photon Detector Limitations in Quantum Ghost Imaging: A Data Processing Approach

Elie Magnon, Yasuhiro Mizutani, Tsutomu Uenohara and Yasuhiro Takaya

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

Session 3-1-3: GS11 Optical metrology III

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

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

GS11-25 Design of a Small-Angle Laser Scanning Ranging System with Stationary-Reference

Qingzhao Yang, Liheng Shi, Lijiang Zeng and Guanhao Wu

GS11-26 2D displacement measurement with sinusoidal phase modulation interferometry

Itsuki Nagaoka, Taku Sato, Masato Higuchi and Masato Aketagawa

GS10-02 Micro/nano vibration suppression of a flexible macro-micro manipulator

Lingwei Meng, Yannan Mo, Zixuan Yu, Chen Wang and Yiling Yang

Session 3-1-4: GS12 Dimensional metrology

GS12-02 R-test for identifying a kinematic model of articulated arm coordinate measuring machines

Tomoaki Kashiwa and Soichi Ibaraki

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

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

GS12-10 Optical calibration system for resin gauges used in X-ray CT

M. Watanabe, K. Matsuzaki, O. Sato, M. Kajima and T. Watanabe

GS12-12 Experimental characterization of contact stiffness using an on-machine measurement device

Kaho Hirano, Atsushi Matsubara and Kotaro Mori

Room 2

Session 3-2-1: OS01

Digital design and manufacturing systems I

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

OS01-04 Eccentric machining of a crankshaft using feature-based simultaneous four-axis machining using STEP-NC
Shunta Onodera, Fumiki Tanaka and Masahiko Onosato

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

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

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

Session 3-2-2: OS01

Digital design and manufacturing systems II

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

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

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

OS01-12 Measurement and Compensation of workpiece setup error in NC machining using a 3D scanner
Daisuke Narita, Hayato Yoshioka and Zongwei Ren

Session 3-2-3: GS02/GS08

Design

Atomic and close-to-atomic scale manufacturing

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

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

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

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

GS02-02 Research on high-sensitivity force measuring guide apparatus for joule balance
Peng Wu, Pengyue Zhao and Jianwei Wu

Session 3-2-4: GS14

Cyber-physical and digital twin production systems

GS14-01 Suggestion and Investigation of Interlock System for Human Error using Modular Robot
Kaoru Mitsuhashi

GS14-03 Digital Twin-Driven Work Handling
Charles Walker, Abhilash Puthanveetil Madathil and Xichun Luo

GS14-02 Enhancing Nanostructure Image Generation Through Physical Rendering
Wei-Cheng Jiang and Chao-Ching Ho

Room 3

Session 3-3-1: OS03 Advanced system design and applications I

OS03-02 Accelerating Metamaterial Design: An Intelligent System for Tailored Mechanical Properties

Jipeng Cui, Liangchi Zhang and Yaoyu Wang

OS03-05 A method for evaluating design hypotheses certainty ensures evidence transparency

Yuga Suzuki, Y. Tsutsui, Y. Shimomura and A. Tsumaya

OS03-10 Evaluating novelty of design concepts based on information content

Riki Kobayahi, Yusuke Tsutsui and Akira Tsumaya

OS03-11 A Proposal of Power Operation Planning Method using Stochastic Programming and Integration with Production Planning , Daisuke Kokuryo, Toshiya Kaihara and Ayano Nishikawa

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

Session 3-3-2: OS03 Advanced system design and applications II

OS03-13 A study on systematic grasping method for hazard scenarios using state transition graph

Koki Kaneda, Yusuke Tsutsui and Akira Tsumaya

OS03-14 A method for evaluating design novelty based on a distributional representation model

Kahoru Furuya, R. Masumura, F. Sayfullooh and Y. Shimomura

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

OS03-16 A cognition conflict resolution method for the appropriate design and operation of artifacts

Kaito Uchiyama, R. Masumura, F. Sayfullooh and Y. Shimomura

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

Session 3-3-3: OS03/OS23 Advanced system design and applications III Bio-medical engineering and applications I

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

OS03-19 A design improvement method for information-circulation design

Yuma Yoshida, K. Uchiyama, R. Masumura, F. Sayfullooh and Y. Shimomura

OS03-20 A Theory for Finding Conceptual Voids in Creative Design Support, Morishima

Taiki, K. Furuya, R. Masumura, F. Sayfullooh and Y. Shimomura

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

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

Session 3-3-4: OS23 Bio-medical engineering and applications II

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

OS23-04 Study on the relationship between the skin properties of the finger pad and vibration perception

Taaki Takanari, T. Okuyama, C. Paillet-Mattei and M. Tanaka

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

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

Room 4

Session 3-4-1: OS05 Advanced cutting technologies I

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

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

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

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

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

Session 3-4-2: OS05 Advanced cutting technologies II

OS05-16 Evaluation of PCD tool edge sharpening technique by tribochemical polishing Mitsuru Murai, K. Kawamura, M. Touge and A. Kubota

OS05-17 Real-time tool life monitoring using thermal imaging technology and image classification technology
Xiaoqi Song, Shoto Yano and Kenji Suzuki

OS05-18 Chatter Vibration Detection in Turn Milling Through Analysis of Sound and Acceleration Signals
Ahmed MA Abdalla, Masahiko Sato and Akihiro Kubotsu

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. Isobe

OS05-20 Development of Simulation Technique for Milling Process Superimposing Oscillation on the Feed Motion
Yutaro Kawana, Kazuki Takahei, Burak Sencer and Norikazu Suzuki

Session 3-4-3: OS05 Advanced cutting technologies III

OS05-21 Brittle Fracture in Subsurface of Cemented Carbide Finished in Milling Iman Farhana Binti Juanih, Shoichi Tamura and Takashi Matsumura

OS05-22 Cutting Process of Cemented Carbide in Peripheral Milling
Kazuya Hatakeyama, Shoichi Tamura and Takashi Matsumura

OS05-23 Analysis of Cutting Process in Tapping
Shun Nakahara, Shoichi Tamura, Takashi Matsumura, Ryosuke Sasaki, Ayaka Hirukawa and Maho Kumanotani

OS05-24 Analysis of Machining Process with Feed Rate Control in Drilling
Tomoaki Sakamoto, S. Tamura, T. Matsumura, K. Kono and R. Sakamoto

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

Session 3-4-4: OS05 Advanced cutting technologies IV

OS05-27 Hybrid cutting-forming tool for generating strengthened features
Pratap Ashwani and Beaucamp Anthony

OS05-28 Cutting force in countersinking of rolled Titanium alloy
Tomohiro Kikuchi, Shoichi Tamura, Katsufumi Inazawa and Takashi Matsumura

OS05-29 Effect of Minimum Quantity Lubrication on Cutting Force in Shoulder Milling of Titanium Alloy
Hiroyasu Kondo, Shoichi Tamura and Takashi Matsumura

OS05-30 Real-Time Material Removal Rate Expert System Based on Support Vector Regression
Yi-De Jang, Ke-Er Tang and Chun-Wei Liu

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

Room 5

Session 3-5-1: OS15 Nano-scale measurements and calibrations IV

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

OS15-23 Improving spatial resolution of passive near-field microscope by fabricating ultra sharp tungsten tips

Jizhou Tang, Kuan-Ting Lin and Yusuke Kajihara

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

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

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

Session 3-5-2: OS15 Nano-scale measurements and calibrations V

OS15-27 Femtosecond laser absolute encoder employing a variable line spacing grating Ryota Okimura, Ryo Sato, Hiraku Matsukuma and Wei Gao

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

OS15-29 Nano-Bubble Shape Deformation Investigation in Multi-Darkfield Optical Microscopy

Hibiki Fujishima, Panart Khajornrungruang, Yuki Ohta

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

OS15-31 Evaluation of internal residual stress of injection molded-plastic parts through THz wave

Weiyen Chen, N. Murata, M. Tachioka, N. Yagi, S. Wang and Y. Kajihara

Session 3-5-3: OS15/OS14 Nano-scale measurements and calibrations VI Ultra precision controls

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

OS15-35 Depth Estimation For Autostereoscopic 3D Surface Measurement Using A Deep Encoder-decoder Network

Sanshan Gao and Chi Fai Cheung

OS14-02 Compound fuzzy control- based position tracking accuracy improvement method

Hongfang Chen, Bailing Liu, Ziqi Liang and Zhaoyao Shi

OS14-04 Effect of Additional Compensator Based on Internal Model Principle in Precision Motion Control

Xuan Gan, Mizuki Takeda and Kaiji Sato

OS14-05 On the Stiff Spring Effect of Linear Ball Guides and its Functions towards Ultra Precise Positioning

Shigeru Futami

Session 3-5-4: GS03/GS05 Forming Electro-Physical, Chemical Processes

GS03-01 Experimental Evaluation of a Flowability in Casting Using by Proposed New Test Method

Hiraku Minoura, M. Nikawa, K. Mu and M. Yamashita

GS03-03 Surface quality of titanium alloy upon pre-compression amount in compliant blisk polishing

Tingyue Bai, Shuai Chen, Zhitong Chen and Zhenglong Fang

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

GS05-02 Observation of growth behavior of silver precipitates in glass

Hirofumi Kawamura, K. Meguro, S. Matsusaka, K. Hara and H. Isobe

Room 6**Session 3-6-1: OS13
Robotics and mechatronics I**

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

OS13-03 Novel Force Decoupling Admittance Control of Linear Motors for Grinding Applications
Jietian Li, Beichen Ding, Yu Yin and Han Huang

OS13-05 Development of a Bearing Hub Unit with Embedded Tri-Axis Force Sensor
Daisuke Matsuura, Yudai Baba and Tsune Kobayashi

OS13-08 Robot grasping based on deep learning and three-dimensional information
Bang-Wei Yu, Yu-Ling Liu and Hung-Yin Tsai

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

**Session 3-6-2: OS13
Robotics and mechatronics II**

OS13-11 Sensorless rotor positioning for a bearingless slice doubly salient permanent magnet motor
Zeqiang He and Tadahiko Shinshi

OS13-12 High-speed coating inspection robot for suspended box-shaped objects
Shota Iwasaki, Hiroaki Seki, Tokuo Tsuji and Tatsuhiro Hiramitsu

OS13-13 Displacement of a mechanism using piezoelectric element and electropermanent magnet
Takeshi Inoue, Takato Sakai, Akihiro Torii, Suguru Mototani and Kae Doki

OS13-04 Design of inchworm stick-slip composite piezoelectric linear motor
Mengtao Luo, Yuguo Cui, Yiling Yang, Rongxi Liang and Xing Tang

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

**Session 3-6-3: OS17
Mechano-photonics engineering and optical applications I**

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

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

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

OS17-07 Numerical analyses of trapping behavior of contour-tracking optical tweezers
Ryohei Omine, S. Masui, S. Kadoya, M. Michihata and S. Takahashi

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

**Session 3-6-4: OS17
Mechano-photonics engineering and optical applications II**

OS17-09 In-situ measurement of photoluminescence and electroluminescence of porous silicon under electrochemistry oxidation
Lianhua Jin, Kota Fukumoto and Bernard Gelloz

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

OS17-12 Analysis of Thermally Excited Evanescent Waves on Dielectrics by a Spectroscopic System
Wentao Zhou, Ryoko Sakuma, Kuan-Ting Lin and Yusuke Kajihara

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

OS17-14 A femtosecond laser confocal probe for multi-dimensional measurement
Chen Li, Ryo Sato, Hiraku Matsukuma and Wei Gao

Room 7

Session 3-7-1: OS08 Nano-scale surface finishing I

OS08-02 Development of a 3-DOF topology- optimized compliant mechanism for shear-thickening fluid polishing

Airi Umezawa, Ashwani Pratap and Anthony Beaucamp

OS08-06 Fluid jet polishing of stainless-steel optical molding inserts

Ashish Kumar, Ashwani Pratap and Anthony Beaucamp

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

OS08-08 Surface polishing of YAG ceramics using catalyst-referred etching

Yusuke Yoshida, Kiyoto Kayao, Daisetsu Toh, Jumpei Yamada, Kazuto Yamauchi and Yasuhisa Sano

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

Session 3-7-2: OS08 Nano-scale surface finishing II

OS08-10 Magnetic Field-assisted Mass Polishing of Optical Glasses

Yee Man Loh, Chunjin Wang, Rui Gao, Lai Ting Ho and Chi Fai Cheung

OS08-11 Correction of Mid- and Low-Spatial Frequency Errors in Silicon Mirrors via Dehydration Polishing

Bing Wu, Shengnan Zhang and Hui Deng

OS08-12 Mechanism Study on Polishing of Single-Crystal Silicon with Gas Cluster Ion Beam

Yuan Xie and Hui Deng

OS08-13 Microwave plasma-assisted polishing of poly-crystalline diamond

Xinyu Li and Hui Deng

OS08-14 Study on the conformal polishing process of NiP grating microstructures based on SiO₂/ Al₂O₃ composite abrasives

Chuhong He and Hui Deng

Session 3-7-3: OS08 Nano-scale surface finishing III

OS08-15 Chemical-Assisted Magnetic Compound Fluid Polishing of TA1 Capillary Inner Surface

Wentao zhang, Yufen Xue, Yangke Zheng, Hanqiang Wu and Yongbo Wu

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

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

OS08-18 Tip-based nanofabrication on a hydrogen-terminated diamond surface by electrochemistry

Jinyan Tang, Mao Peng, Yangyang Li and Yuan-Liu Chen

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

Session 3-7-4: OS08 Nano-scale surface finishing IV

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

OS08-22 Electrochemical shear thickening polishing of single crystal silicon carbide

Mengmeng Shen, Wei Hang, Hongyu Chen, Binghai Lyu and Yunxiao Han

OS08-23 Fixed-abrasive electrochemical mechanical polishing of single-crystal silicon

Xiaoze Yang, Shenglong Zhang, Xu Yang, Kazuya Tamamura and Zhuangde Jiang

Room 8

Session 3-8-1: OS09 Non-traditional machining and additive manufacturing II

OS09-01 Influence of Dielectric Oil Cooling-Effect on Wire EDM Characteristics
Shixian Liu, Ren Sakata, Akira Okada and Tomohiko Kitamura

OS09-02 Non-Circular Section Machining of Glass with Lathe-Type Electrochemical Discharge Machine
Katsushi Furutani and Toshiki Irie

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

OS09-28 Modeling of parallel discharge mechanisms in multi-wire EDM
Junming Guan, Yijin Zhong and Yonghua Zhao

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

Session 3-8-2: OS09 Non-traditional machining and additive manufacturing III

OS09-05 Effect of Amplitude on Ultrasonic Vibration Assisted EDM of SKD 61 S steel: Theoretical Analysis and CFD Study
Chenxue Wang, Tomohiro Sasaki and Atsutoshi Hirao

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

OS09-03 Enhancing Formability of SiCp/Al Composites through Ultrasonic Compression Molding
Zhen Li, Zhengji Yang and Liangchi Zhang

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

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

Session 3-8-3: OS09 Non-traditional machining and additive manufacturing IV

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

OS09-14 Numerical Analysis of Atmospheric Pressure Inductively Coupled Argon Plasma
Xinyang Wei, I. Noto, R. Sun, Y. Ohkubo and K. Yamamura

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

OS09-17 Joining of Additive Manufactured Metals via Friction Welding Technology
Fatma Nur Depboylu and Andrei-Alexandru Popa

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

Session 3-8-4: OS09 Non-traditional machining and additive manufacturing V

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

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. Tammias-Williams and N. Yu

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

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

OS09-23 Investigation of the effect of gravity on melt pool formation in powder bed fusion using simulation
Yoshitomo Ichise and Ryo Koike

Room 9

Session 3-9-1: GS10 Precision positioning I

GS10-03 Compensation of Axis-coupled Inertial Forced Vibrations using Machine Tool Feed Drives
Kaan Bahtiyar, Eiji Shamoto and Burak Sencer

GS10-04 Iteratively Evaluation-feedback Learning Control Mechanism for Grouped Systems with Similar System Parameters
Zhiying He, Hongji Pu and Fangyan Zheng

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

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

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

Session 3-9-2: GS10 Precision positioning II

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

GS10-09 Floating support properties of fine feed table for non-contact support with squeezed-air effect
Yuma Tamaru, Tomohiro Ushijima and Hiroki Shimizu

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

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

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

Session 3-9-3: OS07 Micro/Nano machining and figurings I

OS07-01 Thermal effect on the mechanical properties of monocrystalline silicon under nanoindentation: a molecular dynamics analysis
Yifan Li, Liangchi Zhang

OS07-02 Deformation and cracking mechanisms of single crystal indium phosphide induced by nanoscratch
Xuliang Li, Mingyuan Lu and Han Huang

OS07-09 One-step dry etching of engraved silica nanocones with plasma-induced film-dewetted masks
Jin Hu and Shaolin Xu

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

OS07-08 Laser-assisted fabrication of micro-structured surface with hierarchical roughness on single-crystal silicon
Changlin Liu, Wai Sze Yip and Suet To

Session 3-9-4: OS07/OS22 Micro/Nano machining and figurings II MEMS/NEMS

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

OS22-02 Free standing diamond nanostructures formed by sacrificial layer etching for nanoelectromechanical actuators
Taro Ikeda and Yoshiaki Kanamori

OS22-04 Design of a device for surface profile measurement integrating 3x3 displacement sensors
Kotaro Nakahara, T. Noda, N. Shirozu, Y. Tamaru and H. Shimizu

OS09-27 Study of GaN anodization characterization for electrochemical mechanical polishing
Xu Yang, L. Zhu, X. Yang, K. Yamamura and Z. Jiang

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

Room 10

Session 3-10-1: OS11 Advanced machine tools and elements I

OS11-01 Fundamental Grinding Characteristics of Trial Manufactured Desktop Type Grinder
Masakazu Fujimoto, Yuki Inoue and Tomoya Yamamoto

OS11-02 Virtual Material Contact Model for Estimation of Vibration Characteristics of Jointed Structure
Reiji Hirasawa and Daisuke Kono

OS11-03 Estimation of Spindle Dynamic Compliance Using the Coil Current of a Contactless Electromagnetic Loading Device
Kai Iwai, Shuntaro Yamato and Atsushi Matsubara

OS11-04 Proposal and prototype design of a new machine tool configuration with multiple spindles
Kianoosh Rossoli and Soichi Ibaraki

GS13-04 Multi-Spindle Calibration for Thermal Error Compensation of Mill-Turn Machines
Lang Sebastian, F. Juliuc, M. Josef, W. Konrad and B. Markus

Session 3-10-2: OS11 Advanced machine tools and elements II

OS11-06 Chuck with integrated clamping force measurement for thin-walled workpieces
Berend Denkena, Henning Buhl, Eike Wnendt and Matthias Meier

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

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

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

OS11-13 Modeling of friction characteristics in feed drives and its application to dynamics prediction of machine tools
Yosuke Higuchi and Yasuhiro Kakinuma

Session 3-10-3: OS11/GS13 Advanced machine tools and elements III Machine tool metrology and calibration

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

OS11-17 Study of technology for fine conditioning of pad surfaces with fiber conditioner in CMP
Haruki Hashimoto and Takashi Fujita

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

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

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

Session 3-10-4: OS16 Science and applications of nanostructure formation

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

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

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

OS16-02 Development of laser assisted electrodeposition system without a solution cell
Yuki Tamura, Kenta Nakazawa and Futoshi Iwata