

## GS01 Life Cycle Engineering and Assembly

**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

Chongqing University of Technology

## GS02 Design

**GS02-01** How does additive manufacturing combine with bio-inspiration for design innovation?

Julien Diperi, David Hernandez-Aristizabal, Santiago Arroyave-Tobon and Jean-Marc Linares

Aix Marseille University

**GS02-02** Research on high-sensitivity force measuring guide apparatus for joule balance

Peng Wu, Pengyue Zhao and Jianwei Wu

Harbin Institute of Technology

**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

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

Jean-Marc Linares

Aix Marseille University

## GS03 Forming

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

Hiraku Minoura, Makoto Nikawa, Kuiyuan Mu and Minoru Yamashita  
Gifu University

**GS03-02** Enhanced Formability and Martensite Transformation in AISI 316 Stainless Steel at Sub-Zero Temperatures

Bertolini Rachele, Simonetto Enrico, Savio Enrico, Ghiotti Andrea and Bruschi Stefania  
UNIVERSITY OF PADUA

**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, Chuanzhen Sun, Qin Wang, Koki Yoshida and Akira Okada  
Sojo University

# GS04 Surface Metrology

**GS04-01** Advances in Autostereoscopic Freeform  
Surface Metrology

Benny C.F. Cheung

The Hong Kong Polytechnic University

## GS05 Electro-Physical, Chemical Processes

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

Wenting Gu, Masanori Kunieda and Wansheng Zhao

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

Hirofumi Kawamura, Kodai Meguro, Souta Matsusaka, Keisuke Hara and Hiromi Isobe

Nagaoka University of Technology

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

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

**GS05-04** Transient Simulation of arc plasma in Electrical Discharge Machining

Chen Liu and Xiaodong Yang

Harbin Institute of Technology

## GS06 Laser machining

- GS06-01** Laser machining of optical elements  
Niklas Sass, Thomas Liebrich, Markus Stenzel,  
Rodolphe Catrin, Kabil Ramadani, David Bischof, Sven  
Lämmle and Oliver Fähnle  
RhySearch
- GS06-02** Investigation on the diamond cutting of  
Inconel 718 using negative rake angle tools  
Yuhan Li, Wai Sze Yip and Suet To  
The Hong Kong Polytechnic University
- GS06-04** Laser-guided Anisotropic Etching for Precision  
Machining of Micro-engineered Glass Components  
Jun Li and Shaolin Xu  
Southern University of Science and Technology
- GS06-05** Investigation of a laser focus detecting system  
for laser machining  
Chong Chen, Ziran Chen, Xiaokang Liu and Wei Gao  
Chongqing University of Technology
- GS06-06** Micromachining of carbon fiber reinforced  
plastics by femtosecond pulsed laser  
Yuhei Konishi and Jiwang Yan  
Keio University
- 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  
southern university of science and technology
- GS06-08** Freeform 3D glass microstructures sculptured  
with dynamic multi-focus laser  
Li Yao and Shaolin Xu  
Southern University of Science and Technology
- GS06-09** All-glass nanohole metalens by Non-diffracting  
Direct Laser Writing  
Kang Xu, Mandong Zheng, Lingyu Huang and Shaolin  
Xu
- GS06-10** Iterative design of patterned laser spot for  
customized micro-grooving  
Pei Qiu and Shaolin Xu  
Southern university of science and technology

## GS07 Additive Manufacturing

**GS07-01** Height Control of Microstructures Directly Extruded by Fused Deposition Modeling Processes  
Yunlong Han, Jining Sun, Yi Zhang, Quanhao Xiao, Hao Jing, Zhiyuan Li, Yongjie Guo, Qing Wang, Mengfan Lv, Wuanyao Wang, Yayong Wang, Zhiyuan Li and Lei Zhang

**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  
University of Turkish Aeronautical Association

**GS07-05** Effect of cobalt content on ultra-thin diamond blades by fused deposition modeling and sintering: blade properties and machined surface quality  
Tao He, Shaoh Zhang, Xiangwang Kong, Linglong Rong, Jingjing Wu, Suet To and Wai Sze Yip  
The Hong Kong Polytechnic University

**GS07-06** Direct observation of bubbles inside the molten pool in laser welding of alumina  
Daijiro Tokunaga, Yuko Aono and Atsushi Hirata  
Tokyo Institute of Technology

**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  
Nagoya University

**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  
research institute of manufacturing and productivity

**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  
Kumoh National Institute of Technology

**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  
Kyushu Institute of Technology

**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  
Akita Prefectural University

**GS07-13** Additive manufacturing of fine capillary wick with hybrid porous structure using a toolpath-based construction method

Shujie Tan, Pengfei Zhang, Xu Meng, Liping Ding and Yicha Zhang  
Nanjing University of Aeronautics and Astronautics

**GS07-14** Rotary TIG WAAM Particle Simulation

Andrea Bimbi, Masahiro Kawabata, Togen Tsunekawa and Hiroyuki Sasahara  
Tokyo University of Agriculture and Technology



GS08 Atomic and close-to-atomic scale manufacturing

**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

**GS08-02** In-process monitoring of current for quality control in scanning probe oxidation lithography of atomic and close-to-atomic structure

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

**GS08-03** Atomic and Close-to-atomic Scale Manufacturing of Large-scale Solid-state Nanopore Array

Jufan Zhang, Hongshuai Liu, Boyuan Pang and Fengzhou Fang

## GS09 Tribology

**GS09-01** Influence of radical clearance on fault frequency in cylindrical roller bearings

Geng Hou and Liangchi Zhang

Southern University of Science and Technology

**GS09-03** Experimental study on tribochemical wear of diamond on quartz surface

Itsuki Otsubo and Akihisa Kubota

Kumamoto University

## GS10 Precision positioning

**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

Department of Mechanical Engineering, National Cheng Kung University

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

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

Ningbo University

**GS10-03** Compensation of Axis-coupled Inertial Forced Vibrations using Machine Tool Feed Drives

Kaan Bahtiyar, Eiji Shamoto and Burak Sencer

Oregon State University

**GS10-04** Iteratively Evaluation-feedback Learning Control Mechanism for Grouped Systems with Similar System Parameters

Zhiying He and Hongji Pu

Chongqing University of Technology

**GS10-05** Study on Positioning Accuracy of Si Chips in Noncontact Holding by Non-contact Chuck Utilizing Ultrasonic Squeeze Effect

Seiji Sato, Masaaki Miyatake, Hiroshi Kikuchi and Hayato Hishinuma

Tokyo University of Science

**GS10-06** A New Absolute Capacitive Angular Displacement Sensor with Single-track Structure based Time-grating

Xingchen Fan, Wenwen Dan, Xiaoyang Hu, Zhicheng Yu and Hongji Pu

**GS10-07** Control Design for a Precision Positioning Stage Employing Real-Time AI Model Estimation

Fu-Cheng Wang, Chi-Wei Wen, Min-Shang Chang, Yan-Teng Chang and Jia-Yushi Yen

National Taiwan University

**GS10-08** Investigation of distance measurement reproducibility for a long-range nanopositioning machine combined with a laser focus sensor

Davi Anders Brasil, Steffen Hesse, Michael Katzschmann, Ludwig Herzog, Thomas Fröhlich and Thomas Kissinger

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

**GS10-10** Evaluating Scale Pitch Deviation with Differential Angle Sensors Utilizing Optical Lever and Laser-Autocollimation Methods  
Jiucheng Wu, Lue Quan, Yuki Shimizu, Ryo Sato, Hiraku Matsukuma and Wei Gao  
Tohoku University

**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  
Tohoku University

**GS10-12** Implementation of the Torque Limit Skip for Thermal Error Measurement on Precision Machine Tools  
Petr Kaftan, Florian Porquez, Josef Mayr, Konrad Wegener and Markus Bambach

**GS10-13** Enhancing Positioning Accuracy of a Parallel Kinematic Manipulator through Machine Learning-Embedded Self-Calibration Strategies  
Yu-Jen Chiu and Syamala Jaya Prakash Reddy  
Ming Chi University of Technology

**GS10-14** Kinematically Redundant (6+3)-DOF Hybrid Parallel Robots with Very Large Rotational Workspace  
The University of British Columbia

**GS10-15** Latest Advancement on Human-Robot Collaboration in Manufacturing  
Lihui Wang  
KTH Royal Institute of Technology, Sweden

## GS11 Optical metrology

**GS11-02** High precision and sensitivity anti-interference 3D coherent ranging based on dual reversely chirped self-mixing lasers

Chenxiao Lin and Yidong Tan

Tsinghua University

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

Ryo Sato, Hiraku Matsukuma and Wei Gao

Tohoku University

**GS11-04** Research on TSV depth measurement technique using interferometric spectroscopy

Zizheng Wang, Zhaoran Liu, Chengpei Bai, Chengyuan Yao, Xinlei Sun and Chunguang Hu

Tianjin university

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

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

University of Huddersfield

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

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

**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

Beijing Jiaotong University

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

Xeung Kwan Kim and Sun Do Ling

Korea Research Institute of Standards and Science

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

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

Tohoku University

**GS11-12** The centroid based automatic segmentation and weighted localization algorithm for the center of the focused laser spot  
Huixu Song and Qingwei Li  
Beijing University of Technology (BJUT)

**GS11-14** Six Degree-of-freedom Pose Metrology Based on Dual-comb Ranging  
Ruilin Jiang, Jinming Li, Lijiang Zeng and Guanhao Wu  
Tsinghua University

**GS11-15** Straightness measurement with laser beam and deep learning  
Ukyo Takata, Satoru Takano, Yohei Yamada, Toshinori Yasuhara, Kohsei Terao and Masato Aketagawa  
Nagaoka university of technology

**GS11-16** Structured illumination white-light scanning interferometry microscope  
Min Seo Cho and Ki-Nam Joo  
Chosun university

**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  
Tohoku University

**GS11-19** A real time and accurate vibration measurement method based on an event camera  
Xing Qu, Chunyang Ma and Shuming Yang  
Xi'an Jiaotong University

**GS11-20** Overcoming Single-Photon Detector Limitations in Quantum Ghost Imaging: A Data Processing Approach  
Elie Magnon, Yasuhiro Mazutani, Tsutomu Uenohara and Yasuhiro Takaya

**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  
Beijing Jiaotong University

**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

**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  
National Taiwan University

**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  
Tohoku university

**GS11-25** Design of a Small-Angle Laser Scanning and 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  
Nagaoka University of Technology

**GS11-27** Enhancing in-process monitoring of additive manufacturing through virtual fringe-projection simulations  
Tibebe Yalew, Xiangjun Kong, Qingkang Bao, Gerardo Adesso and Samanta Piano

**GS11-28** Quantum enhanced metrology for 3D manufacturing  
Jernej Frank, Tommaso Tufarelli, Samanta Piano, Alexander Lvovsky and Gerardo Adesso  
University of Nottingham

**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

## GS12 Dimensional metrology

**GS12-01** Design and Realization of Three-line Step Height and Surface Roughness Certified Reference Materials

Sunghoon Eom and Jonghan Jin

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

Tomoaki Kashiwa and Soichi Ibaraki

Hiroshima University

**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

Nuclear Power Institute of China

**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

**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

Lanzhou University of Technology

**GS12-06** Influence of relative intensity in metal-polymer assembly evaluation by X-ray computed tomography

Daniel Gallardo, Lucía Díaz, José A. Albajez and José A. Yagüe-Fabra

University of Zaragoza

**GS12-07** Theoretical modeling of fluorescent confocal detection for surface position determination in dimensional measurement

Motoya Yoshikawa, Shuzo Masui, Shotaro Kadoya, Masaki Michihata and Satoru Takahashi

The University of Tokyo

**GS12-08** Optimization of multiple-orientation dimensional measurement on X-ray CT

Osamu Sato, Mari Watanabe, Kazuya Matsuzaki, Mariko Kajima, Souichi Telada, Tsukasa Watanabe, Youichi Bitou and Toshiyuki Takatsuji

National Institute of Advanced Industrial Science and Technology

**GS12-09** A High-precision Displacement Measurement Method based on Ultrasonic Travelling Waves in Crystals

Mingshu Wu, Bai Ji, Guancoing Tao, Yuge Zhang and



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

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

National Institute of Advanced Industrial Science and Technology

**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

Korea Advanced Institute of Science and Technology

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

Kaho Hirano, Atsushi Matsubara and Kotaro Mori

Kawasaki Heavy Industries, Ltd.

**GS12-13** Aggregation-value-based active sampling method for multi-sensor freeform surfaces measurement and reconstruction

Gengxiang Chen, Yingguang Li, Charyar Mehdi-Souzani and Xu Liu

Université Paris-Saclay USPN

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

Enrico Savio

## GS13 Machine tool metrology and calibration

### **GS13-01** Development of Adhesion Evaluation

Equipment for Nano Diamond Coating using Blasting Method

JingHua Li, HyunKyu Kweon and SangJun Park

research institute of manufacturing and productivity

### **GS13-02** Volumetric error modeling and compensation

for nine-axis and five-linkage turn-milling compound machine tool

Yindi Cai, Daoyuan Dai, Bo Wen, Zihui Zhu, Xianglong

Zhu, Zhigang Dong and Renke Kang

Dalian University of Technology

### **GS13-03** Analysis and modeling of volumetric error of

ultra-precision grinding machine

Ruyue Wang, Yindi Cai, Shiyu Fu, Hongwei Sun,

Xianglong Zhu, Xianguang Guo, Zhigang Dong and

Renke Kang

### **GS13-04** Multi-Spindle Calibration for Thermal Error

Compensation of Mill-Turn Machines

Lang Sebastian, Fix Juliuc, Mayr Josef, Wegener

Konrad and Banbach Markus

ETH Zurich / inspire AG

**GS14 Cyber-physical and digital twin production systems**

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

Kaoru Mitsuhashi

Teikyo University

**GS14-02** Enhancing Nanostructure Image Generation Through Physical Rendering

Wei-Cheng Jiang and Chao-Ching Ho

National Taipei University of Technology

**GS14-03** Digital Twin-Driven Work Handling

Charles Walker, Abhilash Puthanveetil Madathil and Xichun Luo

University of Strathclyde

**GS14-04** Optimization of machining programs using machine tool digital twin

Chang-Ju Kim, Segon Heo, Chan-Young Lee and Jung-Seok Oh

Korea Institute of Machinery and Materials

**GS14-05** Digital twin-driven ultra precision manufacturing system

Xichun Luo

University of Strathclyde

GS15 Artificial intelligence and machine learning in precision engineering

**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  
PhD candidate at University of Auckland

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

Shih-Hsuan Chien, Shingo Tajima and Burak Sencer  
Oregon State University

**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

**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  
Beijing Institute of Technology

**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  
Tohoku University

**GS15-06** Research on Misjudgments Caused by Indistinguishable Speckle Patterns in Bolt Looseness Detection

Lin Deng and Zhan Gao  
Beijing Jiaotong University

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

Pooria A. Farahani, Oltmann Riemer and Daniel Meyer  
University of Bremen

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

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

**GS15-10** Enhancing Optical Lateral Resolution through Deep Learning-Based Estimation of Zernike Coefficients from System Transfer Functions

Ming-Jie Liu, Yu-Ting Cheng, Yu-Tang Huang and Liang-Chia Chen

National Taiwan University

**GS15-11** Physical model-driven single-shot end-to-end absolute phase acquisition strategy

Yiming Li, Mingfeng Chen, Caobo Zhang, Hao Wang, Zinan Li, Weikang chen, Feng Feng, Xiaohao Wang, Weihua Gui, Xiaojun Liang and Xinghui Li

Tsinghua University

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

Clayton Cooper, Jianjing Zhang and Robert X. Gao

Case Western Reserve University

**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

Sichuan University

**GS15-14** Development of crystalline lattice scale using scanning tunneling microscope (STM)

Daichi Yoshikawa, Kazushi Iio and Masato Aketagawa

Nagaoka University of Technology

GS17 Semiconductor manufacturing and metrology

**GS17-01** Enhancing Dataset Variability in Semiconductor Manufacturing through Domain Adaptation and Advanced Simulation Techniques  
Chong-Han Hsu, Eugene Su, Bo-En Tsai and Chao-Ching Ho  
National Taipei University of Technology

**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

**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  
National Taiwan University

**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  
Osaka university

**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  
National Taiwan University