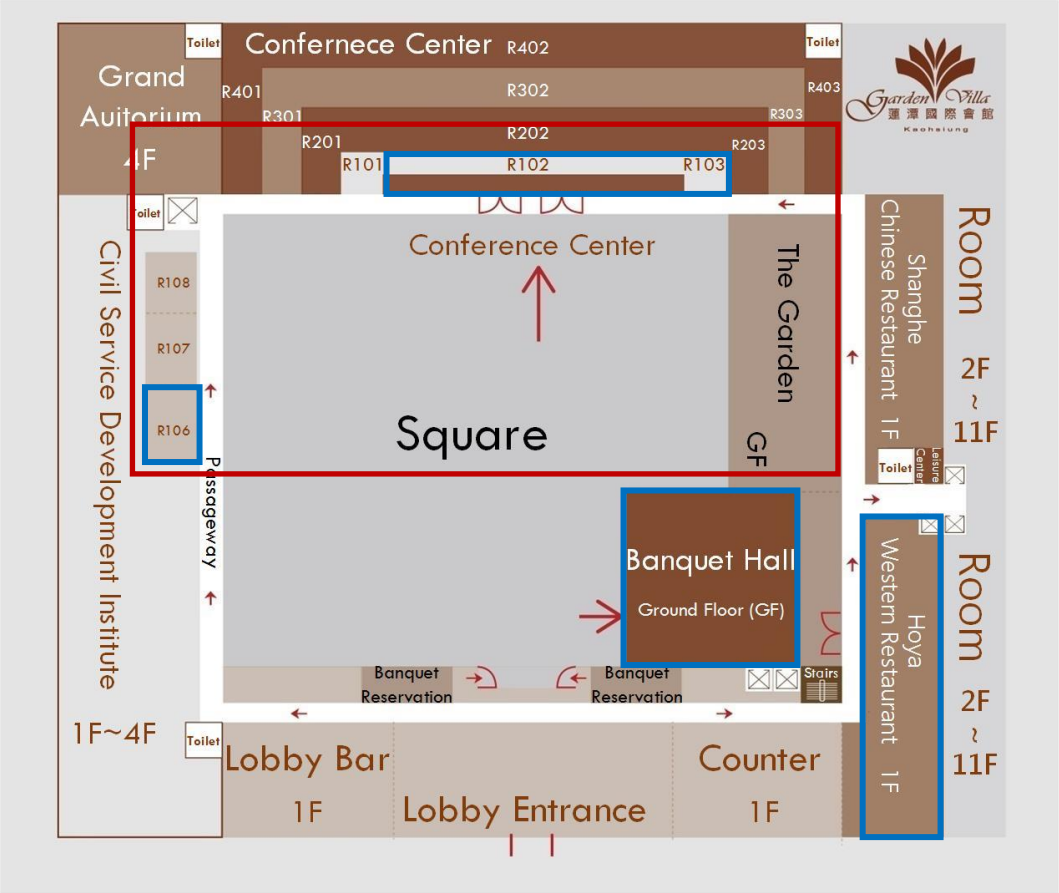
Conference Location: **Garden Villa**

March 27	18:30-20:00	**Registration**			*Conference Center Room 101*
	18:30-20:00	**Reception**			
March 28	08:00-08:50	**Registration**			*Conference Center*
	08:50-09:10	**Opening Ceremony**			*Banquet Hall Room I*
	09:10-10:10	**Keynote Speech (I)** Micro Manufacturing of Microfluidic, Optical and Mechatronic Devices Prof. Dr.-Ing. André Zimmermann			
	10:10-10:30	**Break**			*Conference Center*
		Room 102	*Room 103*	*Room 106*	
	10:30-12:10	Micro Mechanical Machining (I)	Laser and E-beam Based Processing	Micro Forming	
	12:10-13:30	**Lunch**			*Hoya Restaurant*
	13:30-15:30	System Design for Manufacture	Sensor and Monitoring	MICROMAN Special Session	*Conference Center*
	15:30-15:40	**Break**			
	15:40-16:30	**Poster Session**			*Room 101*
	15:35-16:35	**I2M2 Committee Meeting**			*Room 107*
	17:30-19:30	**Boat Tour** (Bus departure at 16:45 from **Garden Villa**)			***Kaohsiung Harbor**
March 29	08:30-09:00	**Registration**			*Conference Center*
	09:00-10:00	**Keynote Speech (II)** Manufacturing for IoT Generation and Desktop Micro Robots Factory **Prof. Hisayuki Aoyama**			*Room 102*
	10:00-10:20	**Break**			*Conference Center*
		Room 102	*Room 103*	*Room 106*	
	10:20-12:00	Additive Manufacturing (I)	Micro EDM (I)	Micro Mechanical Machining (II)	
	12:00-13:30	**Lunch**			*Hoya Restaurant*
	13:30-15:30	Additive Manufacturing (II)	Embossing and Imprinting	Machines & Equipments	*Conference Center*
	15:30-15:50	**Break**			
		Room 102	*Room 103*		
	15:50-17:30	Surface Processing	Micro EDM (II)		
	17:30-18:00	**Joint Executive Committee Meeting**			*Room 107*
	18:10-20:30	**Banquet**			*Banquet Hall Room II*
March 30	08:30-09:00	**Registration**			*Conference Center*
	09:00-10:00	**Keynote Speech (III)** Micro and Nano Manufacturing for Sensing and Energy Applications **Prof. Liwei Lin**			*Conference Center Room 102*
	10:00-10:20	**Break**			*Conference Center*
		Room 102	*Room 103*	*Room 106*	
	10:20-12:00	Injection Molding	Electrochemical Machining (ECM)	Special Session on AFM Tip-based Nanomachining	
	12:00-13:00	**Lunch**			*Hoya Restaurant*
	13:30-16:00	**Lab Tour** (Bus Departure at 13:10 from **Garden Villa**)			***MIRDC Headquarter at Kaohsiung**
End of conference					

* Not in Garden Villa

Floor Plan


Grand Auitorium 4F
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R401
R402
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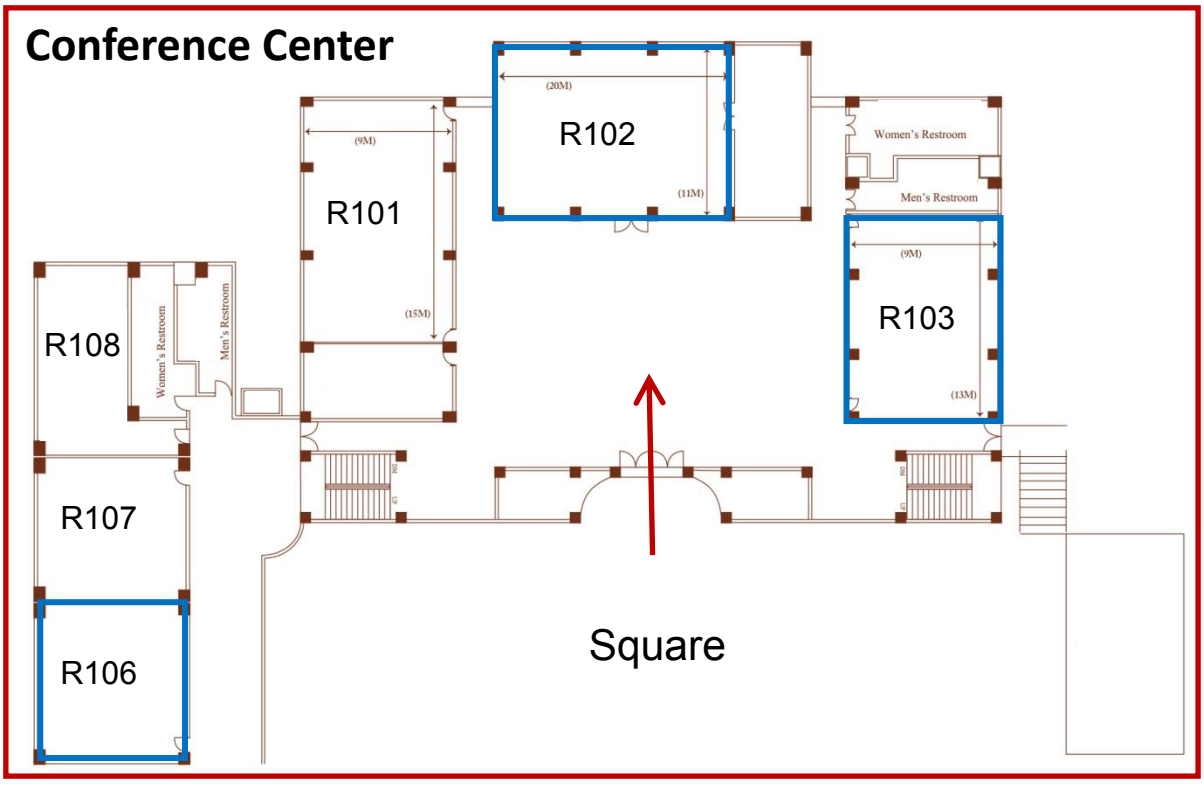
R301
R302
R303
R201
R202
R203
R101
R102
R103
Toilet
Conference Center
Square
The Garden
GF
Shanghe Chinese Restaurant 1F
Room 2F ~ 11F
R108
R107
R106
Passageway
Civil Service Development Institute 1F~4F
Banquet Hall
Ground Floor (GF)
Banquet Reservation
Banquet Reservation
Stairs
Hoya Western Restaurant 1F
Room 2F ~ 11F
Lobby Bar 1F
Lobby Entrance
Counter 1F


Conference Center
R102
R101
R103
R108
R107
R106
Women's Restroom
Men's Restroom
Square

Day1

Monday, March 27

18:30 - 20:00 Registration (Conference Center Room 101)

18:30 - 20:00 Reception (Conference Center Room 101)

Day2

Tuesday, March 28

08:00 - 08:50 Registration (Conference Center)

08:50 - 09:10 Opening Ceremony (Banquet Hall Room I)

09:10 - 10:10 Keynote Speech (I) (**Banquet Hall Room I**)
Micro Manufacturing of Microfluidic, Optical and Mechatronic Devices
Prof. Dr.-Ing. André Zimmermann

10:10 - 10:30 Break (Conference Center)

Tuesday, March 28, 10:30 - 12:10

Session 1: Micro Mechanical Machining (I)

Room 102, Chair: Takashi Matsumura, Co-Chair: Burak Ozdoganlar

067. Microgrooving of a Single-crystal Diamond Tool Using a Picosecond Pulsed Laser and Some Cutting Tests
Nozomi Takayama, Jun ishizuka and Jiwang Yan, Department of Mechanical Engineering, Keio University, Yokohama, Kanagawa, Japan

072. Material Removal, Surface Roughness and Abrasive Wear Following Grinding of Aluminum Alloy Using Minimum Quantity Lubrication
Chunliang Kuo, Chunhui Chung, Juihung Wen and Yichia Hsu, National Taiwan University of Science and Technology, Taiwan

069. Fabrication of Three-dimensional Tissue Scaffolds with Biomimetic Microtopographies through Micromilling and Micromolding
Jonelle Z. Yu and Emrullah Korkmaz, Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA
Philip R. LeDuc, [1.]Department of Mechanical Engineering, [2.]Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA
O. Burak Ozdoganlar, [1.]Department of Mechanical Engineering, [2.]Department of Biomedical Engineering, [3.]Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, USA

070. Micro Mechanical Fabrications on Thin Wires
Masaki Serizawa and Takashi Matsumura, Mechanical Engineering, Tokyo Denki University, Japan

071. Effects of Machining Parameters on Micro Hole Machining Accuracy in Micro-USM
Kai Zhou, Zuyuan Yu, Jianzhong Li, Key Laboratory for Precision and Non-traditional Machining Technology of Ministry of Education, College of Mechanical Engineering, Dalian University of Technology, P. R. China
Guodong Li and Wataru Natsu, Department of Industrial Technology and Innovation, Graduate School of Engineering, Tokyo University of Agriculture and Technology, Japan

Tuesday, March 28, 10:30 - 12:10
Session 2: Laser and E-beam Based Processing

Room 103, Chair: Frank E. Pfefferrkorn, Co-Chair: Ming-Chyuan Lu

032. Effect of Impedance Mismatch in Flexible Pad Laser Shock Forming of Metal Foils

Balasubramanian Nagarajan, Sylvie Castagne and Indira Khadka, [1.]SIMTech-NTU Joint Laboratory (Precision Machining), [2.]School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

Zhongke Wang and H.Y. Zheng, [1.]SIMTech-NTU Joint Laboratory (Precision Machining), Nanyang Technological University, Nanyang Avenue, Singapore [2.]Machining Technology Group, Singapore Institute of Manufacturing Technology, Singapore

033. Influence and Homogenization of Microstructure during Pulsed Laser Remelting of Cast Aluminum

Brodan Richter, Justin D. Morrow and Frank E. Pfefferrkorn, University of Wisconsin – Madison, Madison, Wisconsin, USA

034. Prediction of the Melting Depth Induced by a Large Pulsed Electron Beam Irradiation on Engineering Alloys

Jisoo Kim, Woo Jin Lee and Hyung Wook Park, School of Mechanical and Nuclear Engineering, Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea

035. Effect of Melt-pool Spacing in Re-vitrification of Glass-forming Fe-B-Si Alloy during Pulsed Laser Micro Polishing

Brodan Richter, Justin D. Morrow and Frank E. Pfefferrkorn, University of Wisconsin – Madison, Madison, Wisconsin, USA

Patrick R. Cantwell, Rose-Hulman Institute of Technology, Terre Haute, Indiana, USA

036. Investigation of AE Signal Generation and Propagation for Laser Micro Lap Welding

Kuan-Ting Kuo and Ming-Chyuan Lu, Department of Mechanical Engineering, National Chung Hsing University, Taichung, Taiwan

Tuesday, March 28, 10:30 - 12:10
Session 3: Micro Forming

Room 106, Chair: Gracious Ngaile, Co-Chair: Numpon Mahayotsanun

012. Towards High Precision Manufacturing of Glass Tools by Spark Assisted Chemical Engraving (SACE) for Micro Forming Techniques

L.A. Hof, Concordia University, Montreal, Canada

L. Heinrich, BIAS - Bremer Institut für angewandte Strahltechnik GmbH, Bremen, Germany

R. Wuthrich, [1.]Concordia University, Montreal, Canada [2.]Posalux S.A., Biel/Bienne , Switzerland

013. A New Material Feeding System for Floating-based Micro-tube Hydroforming Die

Gracious Ngaile and Daniel Santiago, Department of Mechanical and Aerospace Engineering, North Carolina State University, Raleigh NC, USA

014. Effect of Die Shift on Curvature of Micro-extruded Pins

Sedthawatt Sucharitpwatskul and Numpon Mahayotsanun, Department of Mechanical Engineering, Faculty of Engineering, Khon Kaen University, Khon Kaen, Thailand

Sasawat Mahabunphachai, National Metal and Materials Technology Center (MTEC), Thailand Science Park, Pathum Thani, Thailand

Norio Takatsuji, Graduate School of Science and Engineering for Research, University of Toyama, Toyama,, Japan

Kuniaki Dohda, Department of Mechanical Engineering, Northwestern University, Illinois, USA

015. Modelling of the Deformation Behavior and Analysis of Ductile Fracture in Micro-tensile Test

W.T. Li, Department of Mechanical Engineering, Hong Kong Polytechnic University, Hung Hom, Hong Kong

M.W. Fu, [1.]Department of Mechanical Engineering, Hong Kong Polytechnic University, Hung Hom, Hong Kong

[2.] PolyU Shenzhen Research Institute, Shenzhen, PR China

Tuesday, March 28, 12:10 - 13:30 Lunch, (Hoya Restaurant)

Tuesday, March 28, 13:30 - 15:30

Session 4: System Design for Manufacture

Room 102, Chair: Martin B.G. Jun, Co-Chair: Ping Guo

051. Hybrid Copper-Silver-Graphene Nanoplatelet Conductive Inks for Flexible Electrode under Intensive Pulsed Light

Changyong Yim, Zachary A. Kockerbeck and Simon S. Park, Department of Mechanical and Manufacturing Engineering, University of Calgary, Calgary, Alberta, Canada

049. Manipulation of High-pressure Micro Water Jets by Dielectrophoretic Forces

Yi Shi, Jian Cao and Kornel F. Ehmann, Northwestern University, Evanston, IL, USA

Huan Zhang, [1.]Northwestern University, Evanston, IL, USA [2.]Shanghai Jiao Tong University, Shanghai, China

050. Flame Assisted Spray Pyrolysis and Simultaneous Deposition Using Annular Flame Nozzle

Maxym V. Rukosuyev, Syed Ali Baqar, Colin Bradley, University of Victoria, Department of Mechanical Engineering, Victoria, BC, Canada

Martin B.G. Jun, [1.]University of Victoria, Department of Mechanical Engineering, Victoria, BC, Canada [2.]Purdue University, School of Mechanical Engineering, West Lafayette, IN, USA

052. Control of a Near-field Electrospinning Jet Using Electric Field Manipulation

Xiangyu You and Ping Guo, Mechanical and Automation Engr., Chinese University of Hong Kong, Hong Kong

053. Finite Analysis Simulation of Compressive Loads Reveals Superiority of Foam-based Micro-architectured Structures

Bingbing Sun, [1.]Beijing Institute of Aeronautical Materials, Aeronautical Engine Corporation of China, China [2.]University of California, Irvine

Lawrence Kulinsky, University of California, Irvine

054. Tolerances in Micro Manufacturing

Hans Nørgaard Hansen, Yang Zhang, Department of Mechanical Engineering, Technical University of Denmark, Denmark

Aminul Islam, Centre for Acoustic-Mechanical Micro Systems, Technical University of Denmark, Denmark

Tuesday, March 28, 13:30 - 15:30

Session 5: Sensor and Monitoring

Room 103, Chair: Paolo. Parenti, Co-Chair: Kuan-Jung Chung

037. Detecting the Status of Micro-stamping by a Condenser Microphone

Chun Min Wang, and Che Hsin Lin, Department of Mechanical and Electromechanical Engineering, National Sun Yat-sen University, Taiwan

Yu-Ting Lin, Metal Industrial Research and Development Center, Taiwan

038. Development of Hydraulic-drive Force Sensor Using Micro Cylinder

Masao Hebisawa, Tohru Sasaki, Yasuyuki Mito, Mitsuru Jindai and Shunsuke Ota, Department of Mechanical and Intellectual Systems Engineering, University of Toyama, Japan

Kuniaki Dohda, Department of Mechanical Engineering, Northwestern University, USA

039. Investigation on Sound Signal Emitted by Punching Process for Punch Failure Monitoring

Delima Yanti Sari, [1.]Department of Mechanical and Automation Engineering, National Kaohsiung First University of Science and Technology, Taiwan [2.]Department of Mechanical Engineering, State University of Padang, Indonesia

Bor-Tsuen Lin, Tsung-Liang Wu, and Chia-Wei Chang, Department of Mechanical and Automation Engineering, National Kaohsiung First University of Science and Technology, Taiwan

Pin-Jyun Chen, Precision Forming System Technology Section, Metal Industries Research & Development Centre, Taiwan

040. Proactive-based Reliability Assessment of Handling Robot Arm

Kuan-Jung Chung, Yu-Chang Lin and Bo-Han Wu, Dept of Mechatronics Engineering, National Changhua University of Education, Changhua, Taiwan

042. Uncertainty Analysis of an In-situ Part Measurement System For Micromilling Applications

C. Squadrani, P. Parenti, E. Zappa, S. Petrò and M. Annoni, Politecnico di Milano, Department of Mechanical Engineering, Milan, Italy

041. Study of Piezoresistive PVDF-CNT Composite Nano Sensors with Transformable Micro Structures

Allen Sandwell, Zachary Kockerbeck, Majid TabkhPaz, Changyong Yim and Simon Park, Department of Mechanical and Manufacturing Engineering, University of Calgary, AB, Canada

Tuesday, March 28, 13:30 - 15:30

Session 6: MICROMAN Special Session

"The project MICROMAN (Process Fingerprint for Zero-defect Net-shape MICROMANufacturing) has received funding from the Marie Sklodowska-Curie Actions (MSCA) under the European Union's Horizon 2020 research and innovation programme (grant agreement n° 674801)"

Room 106, Massimiliano Annoni, Co-chair: Yang Zhang

081. Investigation on the Micro Injection Molding Process of an Overmolded Multi-material Micro Component

F. Baruffi , M. Calaon, G. Tosello, Department of Mechanical Engineering, Technical University of Denmark, Denmark

R. Elsborg, Ortofon A/S, Nakskov, Denmark

082. Hydrophobicity of Pyramid Structures Fabricated by Micro Milling

Yukui Cai, Wenlong Chang, Xichun Luo and Yi Qin, Centre for Precision Manufacturing, DMEM, University of Strathclyde, UK

083. Influenceof Variotherm Injection Mouldingonthe Flow Lengthofa Micro Part

Antonio Luca, Andreas Menten, Carla Flosky and Oltmann Riemer, Laboratory for Precision Machining, University of Bremen, Germany

084. Definition of the Reference Point in Micro-EDM Drilling of a Wire Drawing Die

Mattia Bellotti, Krishna Saxena, Marius Nabuurs, Jun Qian and Dominiek Reynaerts, Department of Mechanical Engineering, KU Leuven & Member Flanders Make, Leuven, Belgium

Xueling Liu, Department of Mechanical Engineering, Tsinghua University, Beijing, China

085. A Study on Replication and Quality Correlation of on-part and on-runner Polymer Injection Molded Micro Features

Nikolaos Giannekas, Guido Tosello and Yang Zhang, Department of Mechanical Engineering, Technical University of Denmark, Denmark

086. Green-state Micromilling of AISI316L Feedstock

Parenti Paolo, Kuriakose Sandeep, Strano Matteo and Annoni Massimiliano, Politecnico di Milano, Department of Mechanical Engineering, Milan, Italy

Mussi Valerio, Laboratorio MUSP, Piacenza, Italy

Tuesday, March 28

15:30 - 15:40 **Break (Conference Center)**

15:40 - 16:30 **Poster Session (Room 101)**

15:35 - 16:35 **I2M2 Committee Meeting (Room 107)**

17:30 - 19:30 **Boat Tour (Bus departure at 16:45 from Garden Villa) (Kaohsiung Harbor)**

Day 3

Wednesday, March 29

08:30 - 09:00 **Registration (Conference Center)**

09:00 - 10:00 **Keynote Speech (II)** (**Conference Center Room 102**)
Manufacturing for IoT Generation and Desktop Micro Robots Factory
Prof. Hisayuki Aoyama

10:00 - 10:20 **Break (Conference Center)**

Wednesday, March 29, 10:20 - 12:00
Session 7: Additive Manufacturing (I)

Room 102, Chair: Kornel Ehmann, Co-chair: Kentaro Taki

001. Fine Wire-feed Metal Deposition Using Laser Assisted Additive Manufacturing
Cheng-Hsin Chuang, , Tsung-Yuan Kuo, Hua-Cheng Chiang, Ching-Chia Chen and Muhammad Omar Shaikh, Department of Mechanical Engineering, Southern Taiwan University of Science and Technology, Tainan, Taiwan
Yi-Chin Chou, Kuang Tai Metal industrial Co.,Ltd, Kaohsiung, Taiwan

002. A Simplified Numerical Simulation of Continuous Liquid Interface Production (CLIP) System as an Additive Manufacturing
Kentaro Taki, Kanazawa University, Japan

003. Effect of Polymer Concentration and Solvent Composition on the Deposition of Bead-on-a-string Structures
Nicolas Martinez-Prieto, Jian Cao and Kornel Ehmann, Department of Mechanical Engineering, Northwestern University, USA

004. Characterization of Clad Geometry and Bond Strength in Micro-scale Laser Cladding of Steels
Sachin Alya, Kumar Keshav and Ramesh Kumar Singh, Mechanical Engineering Department, Indian Institute of Technology Bombay, Mumbai, India

005. Nano-computed Tomography Inspection of Short Carbon-fiber Filled Nylon for Fused Deposition Modeling Method
Robert Chisena, Dian-Ru Li and Albert Shih, Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA

Wednesday, March 29, 10:20 - 12:00
Session 8: Micro Electrical Discharge Machining (EDM) (I)
Room 103, Chair: Giancarlo Maccarini, Co-chair: Jun Qian

055. Effects of Planetary Movement of Electrode on Aspect Ratio of Micro Hole Drilled by Micro-EDM
Yingbao Zhu, Zuyuan Yu, Jianzhong Li, Xuejie Guo and Guoqiang Yin, Key Laboratory for Precision and Non-traditional Machining Technology of Ministry of Education, Dalian University of Technology, Dalian, China

056. Study of Micro Punching Technology Based on Micro-EDM
Dongping Li, Jianzhong Li, Zhijie Zeng, Xiaolong Yang and Zuyuan Yu, Key Laboratory for Precision and Non-traditional Machining Technology of Ministry of Education, Dalian University of Technology, Dalian, China

057. Study of EDM Milling with Tubular Electrode Based on Fix-length Compensation Method
Jingyu Pei, Yetian Zhu, Yebin Liu and Xiaoshun Zhuang, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, P.R.China
Jun Qian and Dominiek Reynaerts, KU Leuven & Member Flanders Make, Leuven, Belgium

058. Effects of Process Parameters and Electrode Path on Surface Roughness in Micro-EDM Milling
G. Allegri, G. D'Urso, C. Giardini, G. Maccarini, M. Quarto and C. Ravasio, University of Bergamo, Dep. of Management, Information and Production Engineering, Dalmine (BG), Italy

Wednesday, March 29, 10:20 - 12:00
Session 9: Micro Mechanical Machining (II)
Room 106, Chair: Sathyan Subbiah, Co-chair: Ramesh K Singh

068. Effect of Different Tool Coatings on Cutting Forces in High Speed Micromilling of Ti6Al4V
Rinku K Mittal, Salil S Kulkarni and Ramesh K Singh, Department of Mechanical Engineering, Indian Institute of Technology Bombay, Mumbai, Powai, India

073. Predictive Force Model for Cryogenic Turning Process Using Micro-structural Analysis of Ti-6Al-4V Alloy
DoYoung Kim, Dong Min Kim and Hyung Wook Park, Department of Mechanical and Nuclear Engineering, Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea

074. Study of Film Formation in an Atomization-based Cutting Fluid System
Department of Mechanical Science and Engineering, University of Illinois, Urbana, IL, USA

075. Mechanical Exfoliation of Graphite Flakes via Tool-chip Interfacial Shearing during Machining
Wazeem Nishad and Sathyan Subbiah, Department of Mechanical Engineering Indian Institute of Technology Madras, India

076. Simulation Based Tool-path Dependent Chatter Stability Analysis during Milling Process
Jaewoo Seo and Hyung Wook Park, School of Mechanical and Nuclear Engineering, Ulsan National Institute of Science and Technology, Ulsan, Republic of Korea

Wednesday, March 29, 12:00 - 13:30 **Lunch, (Hoya Restaurant)**

Wednesday, March 29, 13:30 - 15:30

Session 10: Additive Manufacturing (II)

Room 102, Chair: Yong Chen, Co-chair: Joško Valentinčič

006. A Hybrid Desktop Process for Integrated Deposition and Low-cost, in-situ Sintering of Conductive Silver Nanoparticles

Roshan Bhandari, Shalu Bansal, Michael Dexter and Rajiv Malhotra, Department of Mechanical Engineering, Oregon State University, USA

007. Bio-inspired Micro-scale Texture Fabrication Based on Immersed Surface Accumulation Process

Xiangjia Li, Yang Yang and Yong Chen, Epstein Department of Industrial and Systems Engineering, University of Southern California, Los Angeles, CA, USA

008. Updates on Direct 3D Writing for Fabrication of Functional Meso-scale Components

Yu Liu, School of Mechanical Engineering, Jiangnan University, Wuxi, China
Yanqiu Chen, Yongqiang Deng, Haoran Zhan and Jun Mei, Chengdu Green Energy and Green Manufacturing Technology R&D Center, Chengdu, China
Hui Yan, Beijing Unviersity of Technology, Beijing, China

009. Development of a Low Cost 3D DLP Stereolithography Printer for Production of Micro Features

J. Valentinčič, M. Peroša, M. Jerman and I. Sabotin, Faculty of Mechanical Engineering, University of Ljubljana, Slovenia
A. Lebar, [1.]Faculty of Mechanical Engineering, University of Ljubljana, Slovenia [2.]Faculty of Health Sciences, University of Ljubljana, Slovenia

010. Direct Writing of Room Temperature Ionic Liquid-based Conductive Polymer Composite

Sepehr Nesaei, Benjamin G. Rising and Arda Gozen, School of Mechanical and Material Science Engineering, Pullman, Washington, USA

011. Low Melting Point Metallic Alloy Direct Ink Writing at Micro-meso Scale

Abhishek Gannarapu and B. Arda Gozen, School of Mechanical and Materials Engineering, Washington State University, Pullman, WA, USA

Wednesday, March 28, 13:30 - 15:30

Session 11: Embossing and Imprinting

Room 103, Chair: Tatsuhiko Aizawa, Co-chair: Peiyun Yi

016. Fabrication of Moth-eye Nanostructure Array on Flexible PET Substrate towards Broadband Antireflection

Chengpeng Zhang, Peiyun Yi, Linfa Peng and Jun Ni, State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, P.R. China
Xinmin Lai, [1.]State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, P.R. China [2.]Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, Shanghai Jiao Tong University, Shanghai, P.R. China

017. Heterogeneous Micro-structuring of Stainless Steel Tools via Plasma Printing

T. Aizawa, Department of Engineering and Design, Shibaura Institute of Technology, Japan
T. Nagata, Graduate School of Engineering Science, Shibaura Institute of Tecghnology, Japan
Y. Sugita, YS-Electric Industry, Co. Ltd.

018. Introducing Plasma Surface Modification of Thermoplastic Polymers to Micro Hot Embossing Process

Jin Wang, Linfa Peng, Yujun Deng, Peiyun Yi and Jun Ni, State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, P.R. China
Xinmin Lai, [1.]State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, P.R. China [2.]Shanghai Key Laboratory of Digital Manufacture for Thin-walled Structures, Shanghai Jiao Tong University, Shanghai, P.R. China

019. Flowing Ability of Polymer at Nanoscale Driven by Imprinting Method : Fabrication of Directional Nanostructures

Paritat Muanchan, Research Center for GREEN Materials and Advanced Processing (GMAP), Graduate School of Science and Engineering, Yamagata University, Japan

Takashi Kyotani, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, JAPAN

Hiroshi Ito, [1.]Research Center for GREEN Materials and Advanced Processing (GMAP), Graduate School of Science and Engineering, Yamagata University, JAPAN [2.]Graduate School of Organic Materials Science, Yamagata University, Japan

020. Using Microfluidic Platforms to Manufacture Microlens Array

Pin-Chuan Chen, Yi-Pin Chang and Ren-Hao Zhang, Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan

021. Deformation-based Micro Surface Texturing System for Polymeric Material Using Soft Backing

Sam. Jinan Oh, Xu. Song, Wei. Zhai and Atsushi. Danno, Forming Technology Group, Singapore Institute of Manufacturing Technology, Singapore, Singapore

Sylvie Castagne, School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore

Wednesday, March 29, 13:30 - 15:30

Session 12: Machines and Equipments

Room 106, Chair: Xichun Luo, Co-Chair: Cheng-Tang. Pan

043. Miniature Dual Flame-based Tapering Process and System Development for Fabrication of Optical Fiber Sensors

Vahid Ahsani, Farid Ahmed, Junghyuk Ko, Yonghyun Cho, and Colin Bradley, University of Victoria, Department of Mechanical Engineering, Victoria, BC, Canada

*Martin B.G. Jun, **1.**University of Victoria, Department of Mechanical Engineering, Victoria, BC, Canada **2.** Purdue University, School of Mechanical Engineering, West Lafayette, IN, USA*

044. Maskless Lithography Based on Digital Projection Optics and Point Array Oblique Scanning Method

Hung Liang Chien and Yung-Chun Lee, Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan

045. Design and Fabrication of a High-efficiency Solar Concentrator for Full Spectrum Energy Applications

C.T. Pan, S.Y. Huang, C.K. Yen, Y.P. Sun, Department of Mechanical and Electro-Mechanical Engineering, National Sun Yat-Sen University, Kaohsiung, Taiwan

Z.H. Liu, W.C. Wu, K.K. Wang, H.C. Liu, W.J. Liu, S.C. Yang and F.C. Hsu, Metal Industries Research and Development Centre, Kaohsiung, Taiwan

J.C. Huang, Department of Materials and Optoelectronic Science, Center for Nanoscience and Nanotechnology, National Sun Yat-Sen University, Kaohsiung 80424, Taiwan

046. An Impact Excitation System for Modal Testing of Micromachining Equipment

Shivang Shekhar, Department of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA

*O. Burak Ozdoganlar, **1.**Department of Mechanical Engineering **2.**Department of Biomedical Engineering **3.**Department of Materials Science and Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*

047. Rapid Trial Manufacturing System for Precision Stamping Parts

Pin-Jyun Chen, Hsin-Wei Chu and Yu-Ting Lin, Precision Forming System Technology Section, Metal Industries Research & Development Centre, Taiwan

048. Development of a Compact Ultra-precision Six-axis Hybrid Micro-machine

Wenlong Chang, Wenbin Zhong, Fei Ding and Xichun Luo, Centre for Precision Manufacturing, DMEM, University of Strathclyde, UK

Frank Wardle, UPM Ltd, UK

Wednesday, March 29

15:30 - 15:50 Break (Conference Center)

Wednesday, March 29, 15:50 - 17:30

Session 13: Surface Processing

Room 102, Chair: Albert Shih, Co-chair: Keiske Suzuki

022. Nanoparticle Application of Polyhydroxylated Fullerene (Fullerenol) on Post Cleaning Process of Copper Wafer

Yueh-Hsun Tsai, Keiske Suzuki and Panart Khajornrungruang, Department of Mechanical Information Science and Technology, Kyushu Institute of Technology, Japan

Chao-Chung Chen, Department of Mechanical Engineering, National Taiwan University of Science and Technology, Taiwan

023. Oxygen Plasma Polishing and Finishing of CVD-diamond Coatings

Ersyzario Edo Yunata, Graduate Schoolof Engineering and Science, Shibaura Institute of Technology, Japan

Tatsuhiko Aizawa, Department of Engineering and Design, Shibaura Institute of Technology, Japan

024. Realization of Diffractive Optically Variable Devices Based on Structural Coloration Using Elliptical Vibration Texturing

Yang Yang and Ping Guo, Department of Mechanical and Automation Engineering The Chinese University of Hong Kong, Shatin, N.T. Hong Kong, China

025. Frictional Characteristic of Micro Structures for Wooden Pallets

Xuechun Yang, Department of Management, Hefei University, China

Xichun Luo, [1.]Department of Management, Hefei University, China [2.]Centre for Precision Manufacturing, DMEM, University of Strathclyde, UK

Yukui Cai, Centre for Precision Manufacturing, DMEM, University of Strathclyde, UK

026. Cold Acetone Vapor Chemical Polishing of Acrylonitrile Butadiene Styrene (ABS) Surfaces Fabricated by Fused Deposition Modeling

Dian-Ru Li, Jih-Kai Yeh, Jeffrey Plott, Robert Chisena and Albert Shih, Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA

Wednesday, March 29, 15:50 - 17:30

Session 14: Micro Electrical Discharge Machining (EDM) (II)

Room 103, Chair: Soham S. Mujumdar, Co-chair: Kamlesh Joshi

059. The Plasma Concentration Investigation of the Electrostatic Field-induced Workpiece and Induced Electrolyte Jet (E-Jet) Electrical Discharge Machining (EDM)

Yaou Zhang, Xiaoming Kang and Wansheng Zhao, State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, shanghai, China

060. An Improved Machining Process of Polished Silicon Using Nano Powder Mixed Micro-wire Electro Discharge Machining

Sams Jarin, Tanveer Saleh and Asan GA Muthalif, Smart Structures, Systems and Control Research Laboratory, Department of Mechatronics Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia

Moinul Bhuiyan, School of Science and Engineering, International University of Scholars, Bangladesh

Mohammad Yeakub Ali, Department of Manufacturing and Materials Engineering, International Islamic University Malaysia, Kuala Lumpur, Malaysia

061. Investigation of Surface Distortion on Silicon Wafers while Slicing Through Wire-EDM

Kamlesh Joshi, Anirudh B. Salian, Upendra V. Bhandarkar and Suhas S. Joshi, Department of Mechanical Engineering, Indian Institute of Technology Bombay, Mumbai, India

062. Experimental Investigation of Atomized Dielectric-based EDM Plasma Characteristics

Soham S. Mujumdar and Shiv G. Kapoor, Department of Mechanical Science and Engineering, University of Illinois at Urbana-Champaign, USA

Davide Curreli, Department of Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana-Champaign, USA

Wednesday, March 29

17:30 - 18:00 **Joint Executive Committee Meeting (Room 107)**

18:10 - 20:30 **Banquet (Banquet Hall Room II)**

Day 4

Thursday, March 30

08:30 - 09:00 Registration (Conference Center)

09:00 - 10:00 Keynote Speech (III) (Conference Center Room 102)
Micro and Nano Manufacturing for Sensing and Energy Applications
Prof. Liwei Lin

10:00 - 10:20 Break (Conference Center)

Thursday, March 30, 10:20 - 12:00

Session 15: Injection Molding

Room 102, Chair: Volker Piotter, Co-chair: Steffen G. Scholz

027. New Materials and Applications for Micro Powder Injection Molding
Volker Piotter, Arnaud Grimonprez, Alexander Klein, Klaus Plewa and Metin Tülümen, Karlsruhe Institute of Technology (KIT), Institute for Applied Materials (IAM-WK), Eggenstein-Leopoldshafen, Germany

028. Prediction of Ejection Force in Micro Injection Molding by Calibration of a Shrinkage Model
D. Masato, M. Sorgato and G. Lucchetta, Department of Industrial Engineering, University of Padova, Padova, Italy

029. Investigating the Effect of Mold Surface Roughness in Thin-wall Micro Injection Molding
M. Sorgato and G. Lucchetta, Università degli Studi di Padova, Padova, Italy
V. Bellantone, R. Surace, F. Modica, Institute of Industrial Technology and Automation, ITIA-CNR, Bari, Italy
I. Fassi, Institute of Industrial Technology and Automation, ITIA-CNR, Milano, Italy

030. Analysis of Process Parameters in the Production of Orthopedic Implants Combining Metal Injection Moulding and Polymer over Moulding
Daniel J. B. S. Sampaio,[1] Institute for Applied Computer Science, Karlsruhe Institute of Technology, Karlsruhe, Germany [2] Universidade Estadual Paulista (Unesp), Faculdade de Engenharia, Guaratinguetá, Brazil
Tobias Mueller and Steffen G. Scholz, Institute for Applied Computer Science, Karlsruhe Institute of Technology, Karlsruhe, Germany
Martin Philip-Pichler, RHP Technology GmbH, Austria
Thomas Wilfinger, Wittmann Battenfeld GmbH, Kottingbrunn, Austria
Wolfgang Wittner, Ernst Wittner Ges. m. b. H., Wien, Austria
Manfred Prantl, Alicona Imaging GmbH, Raaba, Austria

031. Influence of Injection-molding Process Parameters on Part Replication of Microstructures with Additively-manufactured Soft Tooling Inserts
Michael Mischkot, Yang Zhang, Asger S. Gøtje, David B. Pedersen, Guido Tosello and Hans N. Hansen, DTU Mechanical Engineering, Technical University of Denmark, Denmark

Thursday, March 30, 10:20 - 12:00
Session 16: Electrochemical Machining (ECM)
Room 103, Chair: Wansheng Zhao, Co-Chair: Albert Wen-Jeng Hsue

063. Study of the Hole Array by Pulsed Electrochemical Machining
Zhi-Wen Fan, Chen-Hui Chang, Da-yu Lin, Cin-Wei Liou and You-Lun Chen, Regional R&D Services Department, Metal Industries Research & Development Centre, Taichung, Taiwan

064. Effects of Electrode Side Insulation on Electrochemical Discharge Machining Characteristics
Weidong Tang, Xiaoming Kang and Wansheng Zhao, School of Mechanical Engineering, State Key Laboratory of Mechanical System and Vibration, Shanghai Jiao Tong University, Shanghai, China

065. The Effect of Offset Pulse Voltage on WECDM with Gravity Feed
Yi Jiang, [1.] Key Laboratory of Advanced Food Manufacturing Equipment and Technology, School of Mechanical Engineering, Jiangnan University, Jiangsu Province, Wuxi, P. R. China [2.]State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, P. R. China
Qi Li and Zican Shi, Key Laboratory of Advanced Food Manufacturing Equipment and Technology, School of Mechanical Engineering, Jiangnan University, Jiangsu Province, Wuxi, P. R. China
Wansheng Zhao, State Key Laboratory of Mechanical System and Vibration, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, P. R. China

066. Micro Molding with Electrochemical Machining in Pure Water and in Mixed with Alumina Powder
Albert Wen-Jeng Hsue and Zih-Yuan Huang, Department of Mold and Die Engineering, National Kaohsiung University of Applied Sciences, Taiwan

Thursday, March 30, 10:20 - 12:00
Session 17: Special Session on AFM Tip-based Nanomachining
Room 106, Chair: Emmanuel B. Brousseau, Co-chair: Junjie Zhang

077. Molecular Dynamics Investigation of Effect of Probe Geometry on Nanoscratching of Copper
Junjie Zhang, Yanquan Geng, Yongda Yan, Zhenjiang Hu and Tao Sun, Center for Precision Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China

078. Effects of the Drive Amplitude and the Scratching Velocity on Fabrication of Nanogrooves with Dynamic Plowing Lithography
Yang He, Yongda Yan and Yanquan Geng, [1.]The State Key Laboratory of Robotics and Systems, Robotics Institute, Harbin Institute of Technology, Harbin, P.R. China [2.]Center for Precision Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, P.R. China

079. Nanofabrication by Friction-induced Selective Etching
Bingjun Yu and Linmao Qian, Tribology Research Institute, National Traction Power Laboratory, Southwest Jiaotong University, Chengdu, Sichuan Province, P.R. China

080. Increasing the Processing Speed of AFM Tip-based Nanomachining at the Tool-workpiece Interface
E.B. Brousseau, Y. Geng, and M. Gensheimer, School of Engineering, Cardiff University, Cardiff, UK
C.R. Bowen, Department of Mechanical Engineering, University of Bath, Bath, UK

Thursday, March 30, 12:00 - 13:00 Lunch, (Hoya Restaurant)

Thursday, March 30

13:30 - 16:00 Lab Tour (MIRDC Headquarter at Kaohsiung)
Bus departure at 13:10 from Garden Villa