

Monday, March 7

17:00 - 19:00

Welcome Reception/Registration

Heian Room, Tokyo Garden Palace

Tuesday, March 8

09:00 - 17:00

Registration

1st Floor, Building 7, Tokyo Denki University

Opening Remarks

Niwa Hall, 1st Floor, Building 7

09:45 - 10:00

Kuniaki Dohda, Conference Chair, Professor, Nagoya Institute of Technology

10:00 - 10:15

Katsuhisa Furuta, President, Professor, Tokyo Denki University

10:15 - 10:30

Kornel Ehmann, President, International Institution for MicroManufacturing – I2M2

Professor, Northwestern University

Plenary Talks

Niwa Hall, 1st Floor, Building 7

10:30 - 11:15

H. Kumar Wickramasinghe, Professor, The University of California-Irvine, USA

“Development of Scanning Probe Microscopes and Their Applications in Technology ”

11:15 - 12:00

**Yoshitake (Yoshi) Saito, Division Manager, R&D, OLYMPUS Medical Systems Corporation,
Japan**

“Medical Device Development”

Lunch

12:00 - 13:00

Restaurant, 2nd Floor, Building 7

4 Parallel Sessions 13:00-15:00

Cutting tools

Room: 7501, Building 7

13:00 - 13:20

139 Seedless, Etchless Deposition of Nanocrystalline Diamond Coatings for Performance Improvements of Micro End Mills using Carbon Ion Implantation

C. D. Torres (University of Wisconsin-Madison), P. J. Heaney (NCD Technologies, LLC), K. Sridharan, G. Cao (University of Wisconsin-Madison), A. V. Sumant (Argonne National Laboratory), R. W. Carpick (University of Pennsylvania), F. E. Pfefferkorn (University of Wisconsin-Madison)

13:20 - 13:40

111 Micro end milling using EDM-fabricated tools

Z. Zhang, H. Peng, J. Yan, T. Kuriyagawa (Tohoku University)

13:40 - 14:00

54 Development of Cutting Tool Accompanied by Local Hydrostatic Pressure Field Formation - Proposal of Cutting Model by Using Molecular Dynamics -

K. Uezaki, J. Shimizu, L. Zhou, T. Onuki, H. Ojima, T. Yamamoto (Ibaraki University)

14:00 - 14:20

82 Feasibility of Temperature Measurements Close to the Cutting Edge of Single Crystal Diamond Tools by Thin Film Thermocouples

D. Werschmöller (University of Wisconsin-Madison), M. Kurz (Institut für Werkzeugmaschinen und Fabrikbetrieb), D. Oberschmidt (Fraunhofer IPK), X. Li (University of Wisconsin-Madison), E. Uhlmann (Institut für Werkzeugmaschinen und Fabrikbetrieb, Fraunhofer IPK), K. Ehmman (Northwestern University)

14:20 - 14:40

106 Basic study of micro-groove cutting using an elastic leaf spring type tool holder

K. Ashida (The National Institute of Advanced Industrial Science and Technology), G. Herrera (The National Autonomous University of Mexico), I. Ogura, Y. Okazaki (The National Institute of Advanced Industrial Science and Technology)

14:40 - 15:00

97 Development of Micro Drilling System without Tool Presetting

Y. Kakinuma, M. Yamamoto (Keio University)

Forming

Room: 7502, Building 7

13:00 - 13:20

141 Grain Orientation during Single Point Incremental Forming

A. Bhattacharya, N V. Reddy (Indian Institute of Technology Kanpur)

13:20 - 13:40

29 Experimental and Numerical Studies on the Material Deformation Behavior in Micro-extrusion Process

M. W. Fu, W. L. Chan, B. Yang (The Hong Kong Polytechnic University)

13:40 - 14:00

10 Indentation Test of Soda Glass under High Hydrostatic Pressure

M. Yoshino, K. Uchida (Tokyo Institute of Technology)

14:00 - 14:20

3 Load Measurement during Rotary Swaging of Micro Components Using Strain Gauges

B. Kuhfuss, E. Moumi, V. Piwek (University of Bremen)

14:20 - 14:40

143 Micro and Scale-up Experiment of Punch Indentation Operation

K. Kitamura, F. Itoigawa, T. Kobayashi, S. Nakasai (Nagoya Institute of Technology)

14:40 - 15:00

117 FE Simulation Considering Mesoscopic Material Inhomogeneity for Prediction of Free Surface Roughening

T. Furushima, T. Masuda, K. Manabe (Tokyo Metropolitan University)

Texturing processes

Room: 7503, Building 7

13:00 - 13:20

91 A Novel Fabrication Method of Nanopatterning: Nanostripe

Y. Ando (Tokyo University of Agriculture and Technology), K. Miyake, M. Nakano, A. Korenaga, H. Mano (National Institute of Advanced Industrial Science and Technology), A. Mizuno (Nippon Steel Corporation)

13:20 - 13:40

26 Fabrication of SU-8 Microstructures by Roller Imprinting Technique to Enhance Light Extraction Efficiency of LEDs.

Y-C Lee, B-T Chen, T-H Wu (Chung Yuan Christian University)

13:40 - 14:00

84 Imprinting of Patterns onto Polymers and Oxide-Glasses via Fine Micro-Stamping

T. Aizawa (Shibaura Institute of Technology), K. Itoh (Micro Fabrication Laboratory LLC), T. Inohara (LIPS-WORKS Co. Ltd.)

14:00 - 14:20

108 Development of Whirling Electrical Discharge Texturing Method

H. Yasui, V. Lertphokanont, M. Ota (Kyoto Institute of Technology), T. Hamaoka, T. Yabunaka (Nissin Manufacturing Co.)

14:20 - 14:40

52 A Novel Desktop Deformation-Based Micro Surface Texturing System

R. Zhou, J. Cao, K. Ehmann (Northwestern University), Y. Chuang, A. H. C. Lee, C-F Wu, K-M Huang (Metal Industries Research and Development Center, Taiwan)

EDM processes

Room: 7505, Building 7

13:00 - 13:20

12 Utilizing Micro-Grooving and Micro-EDM Processes to Manufacture Micro Scale Structures

Y. Chuang, Y-F Lin, J. C. Y. Lin, C-F Wu (Metal Industries Research and Development Center, Taiwan)

13:20 - 13:40

90 Enhancement of Material Removal Rate by Flushing Dielectric Working Fluid in Scooping EDM

Y. Mizugaki (Kyushu Institute of Technology), M. Kakehashi (Ube Industries Ltd.), K. Kikkawa (Kyushu Institute of Technology)

13:40 - 14:00

32 Micro Hole Electrical Discharge Machining Assisted by a Multi-DOF and High-Response Maglev Local Actuator

D. He, T. Shinshi (Tokyo Institute of Technology), X. Zhang (Nippon Institute of Technology), T. Yuzawa, T. Sato (Mitsubishi Electric Corp.)

14:00 - 14:20

92 Effects of Specific Impulsive Force in Electro Discharge Machining

S. H. Yeo, Y. M. Woo (Nanyang Technological University)

14:20 - 14:40

140 A Novel Method of Achieving Desired Shape Micro Channel by μ ED-milling Process

G. Karthikeyan, J. Ramkumar, S. Dhamodaran (Indian Institute of Technology Kanpur)

14:40 - 15:00

66 Electrochemical Techniques for the Study of High-Aspect-Ratio Copper-Electrodeposition

T-H Tsai, J-P Lin (National Taipei University of Technology)

Afternoon Break

15:00 - 15:20

6th Floor, Building 7

4 Parallel Sessions 15:00-17:00

Machining control

Room: 7501, Building 7

15:20 – 15:40

59 Monitoring of Micro-machines using a Sensor-based Interface

S. W. Lee, S. J. Nam, J-K. Lee, J. K. Park (Korea Institute of Machinery and Materials)

15:40 - 16:00

55 Analysis of AE signal for HMM based Tool Wear Monitoring in Micro Milling

B-S Wan, M-C Lu, S-J Chiou (National Chung Hsing University)

16:00 – 16:20

113 Micro Taper Machining of Optical Fiber Ends for On-site Assembled Connector Using Flat Machining Plate

S. Matsui, S. Asakawa, Y. Abe, J. Kobayashi, H. Hirota (NTT Corporation), R. Nagase (Chiba Institute of Technology)

16:20 – 16:40

41 Development of Tool Path Generation System for Polar-coordinate Desktop Machine Tool (PDMT)

J. Zhu, A. Yanagisawa, T. Tanaka, Y. Saito (Tokyo Institute of Technology)

16:40 – 17:00

42 Generation Mechanism of Quadrant Glitches and Its Compensation

R. Sato (Kobe University), M. Tsutsumi (Tokyo University of Agriculture and Technology)

Forming for components

Room: 7502, Building 7

15:20 – 15:40

137 Ball Rotation in Micro-Dimple Forming Process

A. Ishitani (Kakegawa city), T. Makino, K. Dohda (Nagoya Institute of Technology), J. Cao (Northwestern University)

15:40 - 16:00

37 Effect of Lubricant and Coating of Die on Forming of Micro-parts by Forward-Backward Extrusion of 6063 Aluminum Alloy

S. Hosokawa, N. Takatsuji (University of Toyama), K. Dohda, T. Makino (Nagoya Institute of Technology), T. Makino (University of Toyama)

16:00 – 16:20

15 Micro Forming of Gear Wheel Components – A Comparative Analysis

M. Arentoft (IPU), H.N. Hansen (Technical University of Denmark), R.S. Eriksen (IPU), C. Byrne, M. Eldrup (Technical University of Denmark)

16:20 – 16:40

21 Manufacturing of Micro-scale 3-D Porous Gradient Surfaces

B. Öztürk (Virginia Commonwealth University/Karadeniz Technical University), Ö.N. Cora (Virginia Commonwealth University), M. Koç (Virginia Commonwealth University/Istanbul Sehir University)

16:40 – 17:00

16 A Multifunctional Microforming Apparatus and Its Application

S. Cai, M. Cheng, R-X Wang, S-H Zhang (Institute of Metal Research, Chinese Academy of Sciences)

Texturing applications

Room: 7503, Building 7

15:20 – 15:40

101 MGL Calculation of Rarefied Gas Flow in Narrow Gap Bounded by Textured Surface

K. Mori, R. Matsui (Nagoya University), S. Fukui (Tottori University), H. Kousaka, N. Umehara (Nagoya University)

15:40 - 16:00

67 Improving Anti-Adhesive Properties of Cutting Tool for Aluminum Alloy by Nano/Micro Textures

T. Sugihara, T. Enomoto (Osaka University)

16:00 – 16:20

6 Sinusoidal CVD Diamond Micro-tools for the Manufacture of Microstructured Surfaces Used in Bioremediation

S. Marson, R. Villa, I.S. Durazo-Cardenas, R.W. Evans, A. Storti, A. Heaume (Cranfield University), F. Marinello, S. Carmignato, M. Fairley, P. Jennings (University of Padova), D.M.Allen (Cranfield University)

16:20 – 16:40

131 Generation of Geometric Pattern on Triangle Pyramid Patches Approximating Curved Surface by Using Patch Division Milling

K. Xu, H. Sasahara (Tokyo University of Agriculture and Technology)

EDM applications

Room: 7505, Building 7

15:20 – 15:40

14 Adaptive Control for Micro-hole EDM Process with Wavelet Transform Detecting Method

Y. Jiang, W. S. Zhao, X. M. Kang, L. Gu (Shanghai Jiao Tong University)

15:40 - 16:00

133 Fe-Cu Alloy Nano-particles Generation by Electric Discharge Machining

S. K. Subbu, J. K. Katiyar (Indian Institute of Technology Kanpur), A. Chalvane (Defence Metallurgical Research Laboratory, India), J. Ramkumar, S. Dhamodaran (Indian Institute of Technology Kanpur)

16:00 – 16:20

95 Development of Gluing and Assembling Process on Micro EDM to Fabricate Micro Spherical Stylus Tips for Micro CMM

C-C Cheng, J-K Huang, D-Y Sheu (National Taipei University of Technology)

16:20 – 16:40

24 Electrode Design for Pyroelectric Detectors

C-C Hsiao (National Formosa University), C-Y Chang (National Taiwan University)

16:40 – 17:00

148 Punching System Using Punch and Die Made by Electric Discharge Machining (EDM)

T. Mori, M. Broomfield (Nagoya University)

Wednesday, March 9

09:00 - 17:00

Registration

1st Floor, Building7, Tokyo Denki University

Plenary Talks

09:00 - 09:40

Niwa Hall, 1st Floor, Building 7

Phil Coates, Professor, University of Bradford, UK

“Process Structuring of Polymers and Polymer Nanocomposites in Micromoulding”

Morning Break

09:40 - 10:00

6th Floor, Building 7

4 Parallel Sessions 10:00-12:00

Assisted machining

Room: 7501, Building 7

10:00 – 10:20

78 Novel Hybrid Machining System for Drilling Micro Holes by Laser Helical Drilling and μ EDM

E. Uhlmann, M. Langmack, T.-M. Schimmelpfennig (Technische Universität Berlin)

10:20 – 10:40

76 Ultra Thin Layers with Transverse Vibration Assisted Machining

B. Jayasena, S. Subbiah (Nanyang Technological University)

10:40 – 11:00

62 An Investigation of Biaxial Vibration-Assisted Scribing for Single Crystal Silicon

H. N. Chiang, P. W. Ko, J. J. Wang (National Cheng Kung University)

11:00 – 11:20

64 Effects of Ultrasonic Vibration at Four Axes Flexible Fixture Tools System on Micromachining

H-Y Huang, K-H Fuh, J-S Wu, J-T Jhang (National Taiwan Ocean University)

11:20 – 11:40

94 Machining of Micro-Features by Micro Oscillation Milling with Magnetically Suspended Micro-Spindle

S-K Ro, W-C Shin, G. Khim, J-K Park (Korea Institute of Machinery and Materials)

11:40 – 12:00

96 Effect of Process Parameters on the Rate of Abrasive Assisted Brush Deburring of Microgrooves

G. K. Mathai, S. N. Melkote (Georgia Institute of Technology)

Advanced machining

Room: 7502, Building 7

10:00 – 10:20

120 Fabrication of Punching Die with High Aspect Ratio Sub-micron Structures by Pulse Reverse Current Electroforming

J. Han, E. Cho (Yonsei University.), H. Y. Kim (Kangwon National University), S. Kang (Yonsei University)

10:20 – 10:40

104 Effect of Feeding Velocity on Formability in a New Micro-Drawing Process Using a Pair of Concave Rolls

T. Kuboki (University of Electro-Communications), Y. Senzaki (Yokogawa Electric Corporation), M. Murata (University of Electro-Communications)

10:40 – 11:00

8 Electrical-Assisted Micro Embossing Process of Micro-channel Feature Array

J. Mai, L. Peng, X. Lai, Z. Lin (Shanghai Jiao Tong University), H-J Lee, J-H Song (Korea Institute of Industrial Technology)

11:00 – 11:20

87 Surface Modification of Metallic Foils by Vibration-Assisted Micro Forging

K. Nishikawa, Y. Bai, M. Yang (Tokyo Metropolitan University)

11:20 – 11:40

138 Temperature Prediction in Ultrasonic Microextrusion

G. Ngaile, A. Ghosh (North Carolina State University)

11:40 – 12:00

79 Micro Rotary Ultrasonic Machining with Different Working Fluids

A. Patwardhan, L. Gu, K.P.Rajurkar (University of Nebraska-Lincoln)

Beam processing

Room: 7503, Building 7

10:00 – 10:20

74 Micromachining of Cemented Carbide using Focused Ion Beam (FIB) Milling

S. N. Bhavsar (G H Patel College of Engg and Technology), S. Aravindan, P. V. Rao (Indian Institute of Technology Delhi)

10:20 – 10:40

18 Experimental Investigation of Micro-scale Fiber Laser Based Surface Hardening

Y. R. Wagh, Y. M. Chukewad, N. Gupta, R. K. Singh (Indian Institute of Technology Bombay)

10:40 – 11:00

72 Dynamic Control of Lateral Evanescent Light Distribution for Microstereolithography

S. Takahashi, T. Oshima, T. Nagano, Y. Kajihara, K. Takamasu (The University of Tokyo)

11:00 – 11:20

80 Pulsed Laser Micro Polishing: Surface Prediction Model

M. Vadali, C. Ma, N. A. Duffie, X. Li, F. E. Pfefferkorn (University of Wisconsin)

11:20 – 11:40

118 Short Pulse Laser Micro Machining on Hard and Brittle Monocrystal Surfaces

F. Aizawa, T. Onuki, T. Yamamoto, H. Ojima, J. Shimizu, L. Zhou (Ibaraki University)

11:40 – 12:00

115 Numerical Simulation of Multi-pulse Laser Ablation with Plasma Shielding

D. Marla, P. Dake, U. Bhandarkar, S. Joshi (Indian Institute of Technology Bombay)

Biomedical devices

Room: 7505, Building 7

10:00 – 10:20

125 Rapid Tooling for Microfluidic prototypes

C. A. Griffiths, S. S. Dimov, H. Hirshy, S. Scholz (Cardiff University), S. Fischer, M. Spitzbart (University of Applied Sciences)

10:20 – 10:40

53 A Simple Method for Fabrication of Artificial Compound Eyes

S. Di, H. Lin (Chinese Academy of Sciences and Chinese University of Hong Kong), R. Du (Chinese University of Hong Kong)

10:40 – 11:00

123 The Development of a Novel Cell Culture Scaffold Composed of Highly Uniform Nano-Fibrous Microcapsules

R. Tane (Nagoya University), M. Ikeuchi (The University of Tokyo), M. Fukuoka (Nagoya University), K. Ikuta (The University of Tokyo)

11:00 – 11:20

124 A New Process to Achieve Cell-level Biocompatibility to the General Photo Curable Polymer for Bioapplicable Microstereolithography

Y. Inoue, T. Tanaka, Y. Ando (Nagoya University), K. Ikuta (Nagoya University/The University of Tokyo)

11:20 – 11:40

114 CFD Simulation and Nickel Stamp Fabrication of Microfluidic Chip for Medical Diagnosis Applications

H. J. Kim (Kangwon National University), J. Han (Yonsei University), Y. H. Seo, B. H. Kim (Kangwon National University), S. Kang (Yonsei University)

Lunch

12:00 - 13:00

Restaurant, 2nd Floor, Building 7

4 Parallel Sessions 13:00-15:00

Machining

Room: 7501, Building 7

13:00 - 13:20

56 Micro Cutting of Ultra Fine Grain Materials

T. Komatsu (Komatsuseiki Kosakusho Co., Ltd.), T. Matsumura (Tokyo Denki University), S. Torizuka (National Institute for Material Science)

13:20 - 13:40

112 Study on Special Phenomenon in Turning Micro V-Groove on Steel Rod

Y-S Liao, Z-Z Lin (National Taiwan University)

13:40 - 14:00

2 Machinability of Aligned CNT Nanocomposites

M. Mahmoodi, M. Malekian (University of Calgary), J. Mueller (Albstadt-Sigmaringen University), M. B. Jun (University of Victoria), S. S. Park (University of Calgary)

14:00 - 14:20

134 Micromachining of Polymers

R. Khilwani, B. Bediz, G. A. Long, O. B. Ozdoganlar (Carnegie Mellon University)

14:20 - 14:40

122 Experimental Research into Elastic Deformation of Tool on Machining Accuracy in Ball End Milling

H. Terai, T. Asao (Kitakyushu National College of Technology), K. Kikkawa, Y. Mizugaki (Kyushu Institute of Technology)

14:40 - 15:00

153 Study on Cutting Mechanism of Radius End Mill - Analytic and Experimental Investigation of Cutting Process and Performance -

H. Iwabe (Niigata University), T. Nanba (Tsugami Corporation), M. Futakawa (Niigata University)

Molding

Room: 7502, Building 7

13:00 - 13:20

1 Focused Ion Beam Milling of Brass for Microinjection Mould Fabrication

N. Vladov, S. Ratchev, J. Segal (University of Nottingham)

13:20 - 13:40

146 Development of Micro-inductors by Superplastic Die Forging of Metallic Glass

Y. Saotome (Tohoku University), M. Kobayashi (Optics precision), H. Sakurai, S. Furusawa (Gunma Univ.), T. Fukunaga (Tokyo Parts Industries), A. Inoue (Tohoku University)

13:40 - 14:00

25 Characterisation and Micro-Manufacturing of Stainless Metal Micro-Structure Replication Obtained by Soft Embossing Process

M. Sahli, J-C Gelin, T. Barrière, C. Millot (Ecole Nationale Supérieure de Mécanique et des Microtechniques/ENSMM)

14:00 - 14:20

13 Replication of large scale embossed optical polymer surfaces

P. T. Tang, R. Sobiecki, M. Ø. Hansen, C. Ravn (IPU), C. Baum (Fraunhofer-Institut für Produktionstechnologie IPT)

14:20 - 14:40

88 Micro-Manufacturing and Replication of Glass Pyramidal Microstructures by the Injection Moulding Process

M. Sahli, J-C Gelin, C. Millot, T. Barrière (Ecole Nationale Supérieure de Mécanique et des Microtechniques/ENSMM)*

Machine tools and systems

Room: 7503, Building 7

13:00 - 13:20

83 Basic Study on Development of CAM System for High Speed Motion and Small Fluctuation of Feedrate and Acceleration

K. Saito, H. Aoyama (Keio University), N. Sano (UEL Corporation)

13:20 - 13:40

51 Design Principle and Automation of Tool for Orbiting Micro-Electrical Discharge Machining

T. Sriani, H. Aoyama (Keio University)

13:40 - 14:00

17 Active Compliant Interface Mechanism (ACIM) for Dynamic Tuning of Meso-scale Machine Tools

P. M. Moore, G. J. Wiens, T. B. Rippere (University of Florida)

14:00 - 14:20

61 Application of Modularized Equipment Information Acquisition System into Micro-machine

J-K Lee, S. W. Lee, S. J. Nam, J. K. Park (Korea Institute of Machinery and Materials)

14:20 - 14:40

7 The Development of a Reconfigurable Micro/Meso Machining System with Multiple Machining Modules

Y. Chuang, P-C Hu, K-Y Chien, C-P Chou, C-L Tsai, Y-T Lu, C-F Wu (Metal Industries Research and Development Center, Taiwan)

14:40 - 15:00

19 Towards a Holistic Micro Manufacturing Paradigm

H. N. Hansen (Technical University of Denmark)

Surgical devices

Room: 7505, Building 7

13:00 - 13:20

109 Production Technique and Design for Painless Injection Needle

M. Y. Saidin, K. Tsuchiya (Tokai University), M. Kimura, K. Kajiwara (Basic Medical Science and Molecular Medicine)

13:20 - 13:40

48 Medical Needle Insertion: Effects of Needle Tip and Surface Texturing

P. Han, K. Pallav, P. Guo, K. Ehmann (Northwestern University)

13:40 - 14:00

144 Micromachining of PMMA and PLGA Polymer Micro Needles for Medical Applications

E. Azemi, E. Korkmaz, Y. Karpaz, S. Filiz (Bilkent University)

14:00 - 14:20

28 A Hybrid Process for Manufacturing Surgical-grade Knife Blade Cutting Edges from Bulk Metallic Glass

A. J. Krejcie, S. G. Kapoor, R. E. DeVor (University of Illinois - Urbana Champaign)

Afternoon Break

15:00 - 15:20

6th Floor, Building 7

4 Parallel Sessions 15:00-17:00

Surface finishing

Room: 7501, Building 7

15:20 – 15:40

86 Influence of Machine Vibration on Surface Generation in Ultra Precision Machining

J. Kim, C-J Kim (Digital Technology Laboratory)

15:40 - 16:00

38 The Relationship of Cutting Speed and Roughness of the Machined Surface in Micro Milling

Y-S Liao, C-L Huang (National Taiwan University)

16:00 – 16:20

98 Micromilling Enabled Soft Lithography for Fabrication of Circular Microfluidic channels

N. Kota, M. E. Wilson, P. R. LeDuc, B. Ozdoganlar (Carnegie Mellon University)

16:20 – 16:40

132 Static Grit Density Measurement Methods for Medium-Grit Diamond Microgrinding Wheels

J. A. Kunz, J. R. Mayor (Georgia Institute of Technology)

16:40 – 17:00

102 A Research of Eco-Friendly Grinding —Supply of Micro-Mist using the Pulse Air—

T. Sawa (Tokyo Denki University), Y. Ikuse (Tokyo Institute, Polytechnic University), T. Odaki, S. Tomita (Shonan Institute of Technology), S. Toe (Institute of Technologists)

Mechanics and dynamics

Room: 7502, Building 7

15:20 – 15:40

9 Fabrication of Ordered Gold Nano-dots Array using Nano Plastic Forming and Self-assembly

A. Yamanaka, H. Osawa, W. Kurnia, M. Yoshino (Tokyo Institute of Technology)

15:40 - 16:00

4 Accurate Prediction of Atomic Force Microscope Probe Dynamics Through Receptance Coupling

M. Mehrpouya, M. Malekian, S. S. Park (University of Calgary)

16:00 – 16:20

116 Transitional Adhesion Behavior of Stainless Steel Foils in Dry Progressive Micro Deep Drawing Process

T. Shimizu (Tokyo Metropolitan University), Y. Murashige (Murata Manufacturing Co., Ltd), M. Yang, K. Manabe (Tokyo Metropolitan University)

16:20 – 16:40

77 A Study on Mechanical Behavior for Novel Piezoelectric Polymer Plates

F-M Lai, C-C Lin, C-T Hsueh, C-C Yang, C-H Lan, C-M Yang (Da-Yeh University)

Material handling

Room: 7503, Building 7

15:20 – 15:40

63 Self-assembly of Fine Particles with Dip-coating of Colloidal Suspension - Effect of Zeta Potential on the Process -

M. Nishio, N. Moronuki, A. Kaneko, Y. Tanaka (Tokyo Metropolitan University)

15:40 - 16:00

71 The Wettability Effects on Frost Release from the Micro/Nano Coated Aluminium Surface

C. T. Yang, C. H. Lan (St. John's University)

16:00 – 16:20

100 Nano-Scale Bending Using Focused Ion Beam

M. Otsu, S. Sakai, T. Onizuka, M. Matsuda (Kumamoto University), Y. Kawakami (Industrial Technology Center of Saga), K. Takashima (Kumamoto University)

16:20 – 16:40

142 Effect of Test and Probe Conditions on Local Deformation of Deposited Film in Wafer Test of ICs

A. Ushizu, N. Nakagawa, Y. Marumo, L. Ruan, R. Haraguchi, K. Yamaguchi (Kumamoto University), M. Moriyama (Tokyo Cathode Laboratory, Ltd.), H. Saiki (Kumamoto University)

16:40 – 17:00

36 Reproduction of Copper Alloy Scraps by Semisolid Processing

D-L Liang (National Chiao Tung University), S. Sugiyama (The University of Tokyo), R-Q Hsu (National Chiao Tung University), J. Yanagimoto (The University of Tokyo)

Biomedical applications

Room: 7505, Building 7

15:20 – 15:40

35 Evaluation of a Multilayer Electrostatic Actuator for a Fine Motion Stage without Precise Balls for Lubrication

M. M. Ghazaly, K. Sato (Tokyo Institute of Technology)

15:40 - 16:00

45 Design Optimization of planar 3-DOF parallel manipulator for Alignment of Micro-Components

J-J Lee, Y. Dong (Ajou University), C-W Lee, J. Y. Song (Korea Institute of Machinery and Materials), H. J. Lee (Korea Institute of Industrial Technology), M. G. Lee (Ajou University)

16:00 – 16:20

136 Pullout Test of Hybrid Miniature Test Bars for the Development of Microsurgical Tools Utilizing Hybrid Stereolithography

T. Kato (Nagoya University), K. Ikuta (The University of Tokyo)

16:20 – 16:40

39 New Improved Manufacture Technology of Vascular Stent

C-S Chen (National Taipei University of Technology), N-K Chou (National Taiwan University Hospital), S-Y Lin (National Taipei University of Technology), Y-S Chen (National Taiwan University Hospital)

16:40 – 17:00

68 Micro-patterning of Biomaterials using Self-assembled Micro-spheres

A. Kaneko, I. Takeda, Y. Tanaka, N. Moronuki, M. Nishio (Tokyo Metropolitan University)

Banquet

18:00 - 20:00

Tenkoo Room, Tokyo Garden Palace

Thursday, March 10

09:00 - 12:00

Registration

1st Floor, Building 7, Tokyo Denki University

Plenary Talks

09:00 - 09:40

Hitoshi Ohmori, Chief Scientist, Advanced Science Institute RIKEN, Japan

“Nanoprecision Ultra- and On-Demand Micro-fabrication Technologies”

Morning Break

09:40 - 10:00

6th Floor, Building 7

3 Parallel Sessions 10:00-12:00

Hard machining

Room: 7501, Building 7

10:00 – 10:20

43 Ultraprecision Low-wear Micro Curved Grooving of Hard Material

X. Tang (Osaka University), K. Obata (A.L.M.T. Corp), K. Nakamoto, T. Ishida, Y. Takeuchi (Osaka University)

10:20 – 10:40

5 Fabrication of Micro-features in Ceramic Compacts Based on Green Ceramic Machining

J. Li, T. Wu, Z. Yu, G. Yin, G. Chen (Dalian University of Technology)

10:40 – 11:00

30 Creation of Microgroove with Two Flat-Ends on Hard-Brittle Materials

Y. Misawa, K. Nakamoto, T. Ishida, Y. Takeuchi (Osaka University)

11:00 – 11:20

103 Nanometer-Scale Machining of Fused Quartz Surface with AFM Diamond Tip

Y. Ichida (Utsunomiya University)

11:20 – 11:40

60 Ductile-mode Cutting of Glass by Fly Cutting

T. Iizuka, M. Yamaguchi, S. Ueno (Japan Society for the Promotion of Machine Industry), N. Morita (University of Toyama)

11:40 – 12:00

46 Micro Milling of Brittle Materials

T. Matsumura (Tokyo Denki University), S. Tamura (Tochigi Industrial Technology Center)

Materials

Room: 7502, Building 7

10:00 – 10:20

129 Development of Sputtering Conditions for High Piezoelectric Property PZT with Au-Pt Buffer Layer

R. Takita, K. Tsuchiya (Tokai University), Y. Utsuji (Osaka Institute of Technology)

10:20 – 10:40

22 Direct Determination of Average Grain Size of Silicon Thin Films from Melt Duration of Liquid Silicon

C-C Kuo (Ming Chi University of Technology)

10:40 – 11:00

65 Soft Patterning of ITO Films Using Oxalic Acids

Y-F Wu, B-R Huang, J-H Li (Ming Chi University of Technology)

11:00 – 11:20

135 Fabrication of Textured DLC Film on Curved Surface

M. Takashima, K. Kanzawa (Tokyo Institute of Technology), S. Matsuo, M. Matsuo, Y. Iwamoto (iMott Inc.), N. Ohtake (Tokyo Institute of Technology)

11:20 – 11:40

130 Mechanical Property of DLC Coated with Plasma-enhanced CVD Employing Adamantane as Precursor Material

S. Moroto, H. Kousaka, T. Tokoroyama, N. Umehara (Nagoya University)

11:40 – 12:00

47 Fracture Behavior of Thin Foils

H. Wielage, Z. Hu, F. Vollertsen (BIAS - Bremer Institut für angewandte Strahltechnik GmbH)

Metrology

Room: 7503

10:00 – 10:20

89 Measurement of Micro Figure Using Microprobe for Coordinate Metrology Controlled by Optical Radiation Pressure

Y. Takaya, M. Michihata, T. Hayashi (Osaka University)

10:20 – 10:40

73 An On-machine Micro-cutter Positioning Error Measurement and Compensation Method for CNC Micro Machine Tools

S-M Wang, J-J Lin (Chung Yuan Christian University)

10:40 – 11:00

34 Experimental Investigation for Identifying Micro/Mesoscale Tool Positioning

H. W. Park (Ulsan National Institute of Science and Technology), S. Y. Liang (Georgia Institute of Technology)

11:00 – 11:20

70 Mechanical Property of Crispy Foods Focusing on the Microstructure

R. Kadowaki, N. Inou, H. Kimura (Tokyo Institute of Technology)

Lunch

12:00 - 13:00

Restaurant, 2nd Floor, Building 7

Conference Adjourns

12:45

Shuttle Departs for RIKEN Tour

17:00

Shuttle Returns to Tokyo Garden Palace Hotel