

# ICPE2012 Schedule (Oct. 2, 2012)

Venue: Awaji Yumebutai International Conference Center

## Nov. 7 (Wed)

|                 |                             |
|-----------------|-----------------------------|
| 15:00<br>-18:00 | Registration desk open      |
|                 | <b>Reception Hall B, 2F</b> |
| 17:00<br>19:00  | <b>Welcome reception</b>    |

## Nov. 8 (Thu) -1

|                |   |
|----------------|---|
| 8:20           | Registration desk open  |
|                | <b>Main Hall, 2F</b>  |
| 9:20           | <b>Opening address</b><br><i>Prof. Tojiro Aoyama (Conference Chair, Keio University)</i><br><i>Prof. Sunao Ishihara (President of the Japan Society for Precision Engineering, University of Tokyo)</i> |
|                | <b>Plenary session I</b>  |
| 9:50           | <b>Keynote speech I</b><br><b>Big Science and Ultra Precision Machining</b><br><i>Prof. Paul Shore (Cranfield University)</i>   |
| 10:40          | <b>Keynote speech II</b><br><b>Challenge the Limits of Internal Combustion Engines (Innovation in Diesel Engine Technologies)</b><br><i>Mr. Yuji Akagi (Mazda Motor Corporation)</i>                    |
| 11:30<br>12:30 | <b>Lunch</b>  |

Nov. 8 (Thu) -2

|       | Room A (405)   | Room B (301A)  | Room C (301B)  | Room D (311A)   | Room E (311B)  |
|-------|--|--|--|---|--|
|       | <b>Advanced moulding and forming</b><br><i>Chairman: T. Obikawa (University of Tokyo)</i>  | <b>MEMS/NEMS (1)</b><br><i>Chairman: D. Noda (University of Hyogo)</i>   | <b>Mechatronics (1)</b><br><i>Chairman: M. Takasaki (Saitama University)</i>   | <b>Precision metrology (1)</b><br><i>Chairman: H. Murakami (The University of Kitakyushu)</i>   | <b>Other related technologies (1)</b><br><i>Chairman: R. Hikiji (Kumamoto University)</i>  |
| 12:30 | <b>A01:</b> Basic Study on Laser Forming Method for Curved Surfaces: <i>K. Kishida, T. Nakamura, H. Aoyama, N. Matsushita, A. Ushimaru</i>             | <b>B01:</b> A Valveless MEMS Pump Utilizing a Thin Film Permanent Magnet: <i>C. Zhi, T. Shinshi, M. Uehara</i>   | <b>C01:</b> Autonomous Conveyance Control of AGV Based on Knowledge of Taxi Transportation Rules: <i>T. Hirogaki, E. Aoyama, K. Ogawa, Y. Takeda, D. Mitsuoka</i>                                |   |  |
| 12:50 | <b>A02:</b> Wafer Level Glass Molding: <i>M. Hünten, D. Hollstegge, F. Klocke</i>  | <b>B02:</b> A Prototype MEMS Actuator Driven by Magnetic Fluid Enclosed with Polyimide Diaphragms: <i>Y. Okubo, H. Ota, K. Syoji, S. Imai</i>  | <b>C02:</b> Control of Percussion Motion by Sound Feedback with a Humanoid Robot: <i>E. Aoyama, T. Hirogaki, H. Kiuchi, Y. Sugiura</i>   | <b>D02:</b> Thermal Test for Error Maps of Rotary Axes by R-Test: <i>S. Ibaraki, C. Hong</i>  | <b>E02:</b> Fabrication and Characterization of Electrodes for Microbial Fuel Cell: <i>H. Ogikubo, N. Ohtake</i>   |
| 13:10 | <b>A03:</b> Lateral Extrusion of A6063 Pipes with a Lost Core of Alumina Powder Bonded with Wax: <i>T. Ohashi, N. Quang Thanh, R. Miyajima</i>         | <b>B03:</b> Thermal Driving Method and Displacement Properties of a Thin-film Polyimide Diaphragm for a MEMS Actuator: <i>S. Mifuji, K. Adachi, T. Tsukioka, S. Imai</i>                                   | <b>C03:</b> Development of a Small Hovering Robot with High Lifting Force Using Coaxial Double Rotors Driven by Twin Motor Pairs: <i>Y. Kobayashi, K. Kanamori, Y. Imai, R. Eda, T. Horiuchi</i> | <b>D03:</b> Development of a Cutting Tool with Micro Built-in Thermocouples - Characteristic of the Micro Cu/Ni Thermocouples Fabricated by Electroless Plating and Electro Plating -: <i>J. Harashita, Y. Tomoda, J. Shinozuka</i> | <b>E03:</b> Control of Built-Up Edge Behavior by Chamfered Cutting Edge Preparation and Surface Modification: <i>H. Kiyota, F. Itoigawa, T. Nakamura</i> |
| 13:30 | <b>A04:</b> Shape Recovery Method for Repairing Dents on Stainless Steel Sheets by Laser Forming: <i>M. Nunobiki, S. Fukuoka, K. Okuda, H. Shizuka</i> | <b>B04:</b> Fabrication and Characterization of AFM Probe Integrated with High-Aspect-Ratio Diamond Tip: <i>T. Shibata, K. Maruno, M. Nagai, T. Kawashima, T. Mineta, E. Makino</i>                        | <b>C04:</b> Vibration Suppression Control Using Vibration Node of Articulated Robot with Multiple Vibration Modes: <i>H. Hamamatsu, Y. Hitaka, S. Furuno, T. Matsuo</i>                          | <b>D04:</b> Passive THz near-field imaging and its applications for engineering: <i>Y. Kajihara, T. Mizutani, S. Komiyama</i>   | <b>E04:</b> Micro-Drilling of CFRP Plates Using a High-Speed Spindle: <i>K. Ogawa, H. Nakagawa, T. Hirogaki, E. Aoyama</i>                               |
| 13:50 | <b>A05:</b> Advanced Machining Processes for Micro Mold Fabrication: <i>E. Brinksmeier, O. Riemer, C. Robert, S. Twardy</i>                            | <b>B05:</b> Fabrication of Acoustic Emission Sensor Integrated with Cantilever Array for Detection of Signals Divided into Frequency Domain: <i>T. Kawashima, A. Matsui, K. Muto, M. Nagai, T. Shibata</i> | <b>C05:</b> Nonlinear Modeling of Human Quiet Standing: <i>H. Takagi, T. Tabata, K. Sasaki</i>   | <b>D05:</b> Design and Experiment of Thermal Contact Sensor Detecting Defects on Si Wafer Surface: <i>W. Lu, Y. Shimizu, S. Ito, W. Gao</i>   | <b>E05:</b> Cutting Experiments in Cutting Speeds of up to 200 M/s with a High-Speed Impact Cutting Tester: <i>T. Higashi, M. Sando, J. Shinozuka</i>    |
| 14:10 | <b>Coffee break</b>  |  |  |   |  |
| 14:30 |  |  |  |   |  |

Nov. 8 (Thu) -3#

|       | Room A (405)  | Room B (301A)  | Room C (301B)  | Room D (311A)   | Room E (311B)  |
|-------|---|--|--|---|--|
|       | <b>High precision machining (1)</b><br><i>Chairman: K. Yamauchi (Osaka University)</i>  | <b>MEMS/NEMS (2)</b><br><i>Chairman: A. Yamanaka (Tokyo Institute of Technology)</i>   | <b>Mechatronics (2)</b><br><i>Chairman: H. Hamamatsu (Kitakyushu National College of Technology)</i>   | <b>Precision metrology (2)</b><br><i>Chairman: S. Takahashi (University of Tokyo)</i>   | <b>Other related technologies (2)</b><br><i>Chairman: Y. Sano (Osaka University)</i>   |
| 14:30 | <b>A06:</b> Study on the Mechanism of Optical Glass Sub-surface Crack Formation in Single Abrasive Grinding: <i>J. Chen, F.H. Zhang, H. Zhao, Z. Yong, L. Liu</i>                               | <b>B06:</b> Multi-Scale Product Design and Lifecycle Simulation System for Nano Product Design: <i>K. Sakita</i>                           | <b>C06:</b> Non-Contact Actuation of Less-Invasive Bone Lengthening Device Using Embedded Cycloidal Motor Driven by Permanent Magnets from the outside: <i>Y. Matsuzaki, Y. Kadota, K. Uzuka, H. Suenaga, K. Sasaki, T. Morita</i> | <b>D06:</b> Novel Measuring Principle of Pitch Deviation Evaluated through Double-flank Gear Rolling Test with Rack Probe: <i>J. Tang, Z.Y. Shi, Z. Fang</i>  | <b>E06:</b> Portable 532 nm Iodine-Stabilized DPSS Laser for Length Standard: <i>H. Oozeki, H. Masuda, K. Miyata, T. Matsuura, T. Takahashi</i>                        |
| 14:50 | <b>A07:</b> Study on micro/nano-indentation of typical soft-brittle materials: <i>W. Hang, L. Zhou, J. Shimizu, T. Yamamoto, Y. Julong</i>  | <b>B07:</b> Fabrication of Si Mold Using ICP Etching for X-Ray Diffraction Grating: <i>D. Noda, A. Tokuoka, T. Hattori</i>                 | <b>C07:</b> Actuation Force Measurement Mechanism for Non-Contact Ultrasonic Suspension: <i>M. Takasaki, S. Chino, Y. Kato, Y. Ishino, T. Mizuno</i>   | <b>D07:</b> Dynamic Response of an Air-Bearing Displacement Sensor for on-Machine Surface Form Measurement: <i>K. Lee, S. Ito, Y. Shimizu, W. Gao, K. Tanaka, M. Fukuta, Y. Kai</i>   | <b>E07:</b> Influences of the Inserted Angle of an Optical Fiber for an Optical Trapping: <i>N. Watanabe, K. Taguchi</i>   |
| 15:10 | <b>A08:</b> Wear Characteristics of Cutting Tools in Turning of Sintered Steel under Different Lubrication Conditions: <i>T. Obikawa, T. Ohno, M. Yamaguchi, T. Maetani, S. Unami, Y. Ozaki</i> | <b>B08:</b> Fabrication of Micro-Capacitive Inclination Sensor Using the LIGA Process: <i>Y. Kuboyama, S. Nishida, D. Noda, T. Hattori</i> | <b>C08:</b> Development of 2-DOF Hybrid Actuator System: <i>R. Okeya, M. Aoyagi</i>  | <b>D08:</b> Absolute calibration of the rotary encoder considering the influence on-machine for development of High-Speed Nanoprofiler: <i>T. Kojima, K. Usuki, T. Kitayama, D. Tonaru, H. Matsumura, J. Uchikoshi, Y. Higashi, K. Endo</i> | <b>E08:</b> Theoretical Investigation of an Optical Vibration Using Laser Beams from Optical Fibers Inserted at an Angle of 35 Degrees: <i>N. Watanabe, K. Taguchi</i> |
| 15:30 | <b>A09:</b> Evaluation of surface roughness and subsurface damage of 4H-SiC processed by different finishing techniques: <i>H. Deng, K. Yamamura</i>  | <b>B09:</b> A Novel Batch Fabrication of Micro Parts Using DNA Pattern Recognition: <i>M. Yasuda, T. Hayashi, M. Michihata, Y. Takaya</i>  | <b>C09:</b> A 3-DOF Friction-Free Planar Motor Using Piezoelectric Elements: <i>A. Torii, M. Nishio, Y. Itatsu, K. Doki, A. Ueda</i>   | <b>D09:</b> Analysis and Measurement of the Dynamic Motions of a Large-Scale Rotating Roll Workpiece: <i>J. Lee, W. Gao, Y. Shimizu, S. Ito, J. Hwang, J. Oh, C. Park</i>   | <b>E09:</b> Investigation on Dynamic Chemical Etching of Fiber Probe for Cell Isolation: <i>K. Taguchi, J. Okada, N. Watanabe</i>                                      |
| 15:50 | <b>A10:</b> Fabrication of Smooth Surface on 4H-SiC Substrate by Ultraviolet Assisted Local Polishing in Hydrogen Peroxide Solution: <i>A. Kubota, K. Kurihara, M. Touge</i>                    | <b>B10:</b> Nanowire Fabrication by DNA Metallization and Positioning: <i>H.W. Guan, S.C. Liu, Y. Yanagida, T. Hatsuzawa</i>               | <b>C10:</b> A Method for Online Identification of Two-Inertia Mechanical System Including Nonlinear Friction: <i>Y. Toyozawa, N. Sonoda, H. Harada, H. Kashiwagi</i>   | <b>D10:</b> Eccentric error compensation for pitch deviation measurement of gears: <i>B. Xu, S. Ito, Y. Shimizu, W. Gao</i>   | <b>E10:</b> Two-Dimensional Cell Trapping Using Single Axicon Fiber without Physical Contact: <i>K. Taguchi</i>  |
| 16:10 | <b>Coffee break</b>   |  |  |   |  |
| 16:30 |   |  |  |   |  |

Nov. 8 (Thu) -4

|       | Room A (405)   | Room B (301A)   | Room C (301B)  | Room D (311A)   | Room E (311B)   |
|-------|--|---|--|---|---|
|       | <b>High precision machining (2)</b><br><i>Chairman: D. Hollstegge (Fraunhofer Institute for Production Technology IPT)</i>   | <b>MEMS/NEMS (3)</b><br><i>Chairman: T. Shibata (Toyohashi University of Technology)</i>  | <b>Mechatronics (3)</b><br><i>Chairman: K. Sasaki (University of Tokyo)</i>  | <b>Precision metrology (3)</b><br><i>Chairman: Y. Akematsu (Tsukuba University of Technology)</i>   | <b>Other related technologies (3)</b><br><i>Chairman: K. Nakamoto (Tokyo University of Agriculture and Technology)</i>  |
| 16:30 | <b>A11:</b> Figuring of Aspherical Metal Mirror Substrate for Neutron Focusing by Numerically Controlled Electrochemical Machining: <i>T. Tabata, M. Nagano, D. Yamazaki, R. Maruyama, K. Soyama, K. Yamamura</i>                  | <b>B11:</b> Fundamental study on nanoremoval processing method for microplastic structures using photocatalyzed oxidation: <i>T. Sekino, S. Takahashi, K. Takamasu</i>                        | <b>C11:</b> Development of transient thermal deformation control techniques using thermal modal analysis based design methods: <i>T. Morishima, R.V. Ostayen, J.V. Eijk, R. Munnig Schmidt</i> | <b>D11:</b> Form Error Characterization of Reflective-Type Gratings: <i>Y. Shimizu, W. Kim, S. Ito, W. Gao</i>  | <b>E11:</b> Improvement of interface roughness in platinum/carbon multilayers for X-ray mirrors: <i>J. Kim, S. Matsuyama, Y. Sano, K. Yamauchi</i>  |
| 16:50 | <b>A12:</b> Study on In Situ Etching Rate Monitoring in Numerically Controlled Local Wet Etching: <i>N. Shimozono, M. Nagano, T. Tabata, K. Yamamura</i>   | <b>B12:</b> Fabrication of Spatially-Patterned Cells Using Selective Adhesion on Pre-Structured Fine Particles: <i>A. Kaneko, T. Sugihara, H. Murakami, I. Takeda, Y. Tanaka, N. Moronuki</i> | <b>C12:</b> Development and evaluation of miniaturized 6-DOF parallel link manipulator: <i>R. Kobayashi, R. Tsuboi, S. Sasaki</i>  | <b>D12:</b> Development of an Optical Heterogeneity Evaluation System Using Phase-Shift Digital Holography: <i>T. Hayashi, M. Michihata, Y. Takaya</i>  | <b>E12:</b> Surface Nitriding of Al-Mg Alloys Using a Rotary Barrel Tank: <i>Z. Tao, M. Yoshida, M. Okumiya, N. Utsumi, Y. Tsunekawa</i>  |
| 17:10 | <b>A13:</b> Fabrication of ultrathin Bragg beam splitter by plasma chemical vaporization machining: <i>T. Osaka, M. Yabashi, Y. Sano, K. Tono, Y. Inubushi, T. Sato, S. Matsuyama, T. Ishikawa, K. Yamauchi</i>                    | <b>B13:</b> MPF-FDTD Simulations of Fabrication and Optical Analysis of Ordered Gold Nano-Dots Array: <i>A. Yamanaka, Z.X. Li, M. Yoshino</i>   | <b>C13:</b> Influence of Servo Characteristics on Motion Accuracy of Parallel Kinematic Mechanism: <i>R. Sato, M. Maegawa, G. Tashiro, K. Shirase</i>  | <b>D13:</b> New Non-contact Measurement of Small Inside-diameter Using Tandem Low-coherence Interferometer and Optical Fiber Devices: <i>K. Matsui, H. Matsumoto, S. Takahashi, K. Takamasu</i> | <b>E13:</b> Improvement of Finished Surface Integrity of High Chromium Cast Iron in Reaming: <i>R. Hikiji</i>   |
| 17:30 | <b>A14:</b> Rapid planarization method by ultraviolet light irradiation for gallium nitride using platinum catalyst: <i>H. Asano, S. Sadakuni, K. Yagi, Y. Sano, S. Matsuyama, T. Okamoto, K. Tachibana, K. Yamauchi</i>           | <b>B14:</b> A New Process to Fabricate Three Dimensional Ordered Nano Dot Array Structures by Nano Plastic Forming and Dewetting: <i>Z.X. Li, A. Yamanaka, M. Yoshino</i>                     | <b>C14:</b> Micro-aspheric Mold Polishing Utilizing Magnetostrictive Vibration-assisted Polishing Machine: <i>J. Guo, H. Suzuki, S. Morita, Y. Yamagata, T. Higuchi</i>                        | <b>D14:</b> Development of non-contact precision measurement technique by using optical frequency comb: <i>T. Onoe, S. Takahashi, K. Takamasu, H. Matsumoto</i>                                 | <b>E14:</b> Improving Anti-Adhesion in Cutting of Aluminum Alloy by Micro Stripe Texture -Considering Texture Combination-: <i>T. Sugihara, T. Enomoto, S. Yukinaga, K. Hirose, U. Satake</i> |
| 17:50 | <b>A15:</b> Development of an ultraprecise piezoelectric deformable mirror for adaptive X-ray optics: <i>H. Nakamori, S. Matsuyama, S. Imai, T. Kimura, Y. Sano, Y. Kohmura, K. Tamasaku, M. Yabashi, T. Ishikawa, K. Yamauchi</i> | <b>B15:</b> High Throughput Method to Fabricate Ordered Nano Dot Array on Various Plastic Films: <i>P.D. Truong, A. Yamanaka, M. Yoshino</i>  | <b>C15:</b> Development of a lens driving maglev actuator for laser beam off-axis cutting and deep piercing: <i>D.J. He, T. Shinshi, T. Nakai</i>  | <b>D15:</b> Sphericity Measurement Using Stitching Interferometry: <i>T. Hagino, Y. Yokoyama, Y. Kuriyama, H. Haitjema</i>  |   |

**Nov. 9 (Fri) -1**

|                |  |
|----------------|--|
| 8:20           | Registration desk open   |
|                | <b>Main Hall, 2F</b>   |
|                | <b>Plenary session II</b>  |
| 9:20           | <b>Keynote speech III</b><br><b>Advances in Spindle Metrology for Grinding Monitoring</b><br><i>Prof. Eric Marsh (The Pennsylvania State University)</i> |
| 10:10          | <b>Keynote speech IV</b><br><b>Thermal Issues in Machine Tools</b><br><i>Dr. Wolfgang Knapp (IWF, ETH Zurich)</i>  |
| 11:00<br>11:30 | Coffee break   |

Nov. 9 (Fri) -2

|       | Room A (405)   | Room B (301A)   | Room C (301B)  | Room D (311A)   | Room E (311B)  |
|-------|--|---|--|---|--|
|       | <b>High precision machining (3)</b><br><i>Chairman: T. Matsumura (Tokyo Denki University)</i>  | <b>Non-conventional machining (1)</b><br><i>Chairwoman: Y. H. Zou (Utsunomiya University)</i>   | <b>Mechanical design and tribology</b><br><i>Chairman: F. Itoigawa (Nagoya Institute of Technology)</i>  | <b>Precision metrology (4)</b><br><i>Chairman: S. Ito (Tohoku University)</i>   | <b>Green manufacturing</b><br><i>Chairman: N. Suzuki (Nagoya University)</i>   |
| 11:30 | <b>A16:</b> Generation of Regularly Aligned Curved Surface Patches on Free-Form Surface for Patch Division Milling: <i>K. Xu, H. Sasahara</i>  | <b>B16:</b> Effect of Ultrasonic Vibration Drilling on Cutting Stress Distribution: <i>H. Isobe, Y. Uehara, K. Hara</i>   | <b>C16:</b> Advanced Tolerancing Based on Product Performance by Using Statistical Tolerance Index $C_{pk}$ and $C_c$ : <i>A. Otsuka</i>                                     | <b>D16:</b> Proposal of Improving Method of Rotational 2-Axes Synchronous Accuracy of Plate Motion Control with a Dual Arm Robot by Estimating Ball Rolling Motion on the Plate: <i>W. Wu, T. Hirogaki, E. Aoyama</i> | <b>E16:</b> Cutting Performance of Oxygen-including Compounds in MQL Machining of Aluminum: <i>T. Wakabayashi, T. Atsuta, A. Tsukuda, N. Sembongi, J. Shibata, S. Suda</i>   |
| 11:50 | <b>A17:</b> Effect of Cutting Revolution Speed on Cutting Temperature in Helical Milling of CFRP Composite Laminates: <i>H. Iwasa, S. Sakamoto</i>   | <b>B17:</b> Experimental Verification of Effect of Grinding Fluid Excited by Ultrasonic Vibration: <i>J. Ishimatsu, H. Isobe, K. Hara</i>                         | <b>C17:</b> A Design Method for Thin Film Patterning Process via Lift-Off Technique: <i>E. Morinaga, Y. Matsuura, H. Wakamatsu, R. Satoh, K. Nakagawa, Y. Iwata, E. Arai</i> | <b>D17:</b> Pivot Turning Measurement of Relative Position and Posture for Moving Robots System Using Stereo-Camera: <i>T. Sasaki, T. Ushimaru, T. Yamatani, Y. Ikemoto, H. Obara</i>                                 | <b>E17:</b> Development of Electric Rust Preventive Machining Method - Optimization of Water Recycle System -: <i>N. Nishikawa, Y. Sato, F. Andou, T. Sawa, Y. Hagihara, H. Kato, N. Yoshihara, H. Okawai, T. Murase, T. Iyama, M. Mizuno, S. Tsukamoto</i>                              |
| 12:10 | <b>A18:</b> Experimental Study of Cutting Performance and Tool Wear in Dry Side Milling of Aluminum Alloy with DLC-Coated HSS-Co Cutter: <i>Y. Mizugaki, K. Takafuji, K. Kikkawa, T. Kuroda, T. Kimura</i> | <b>B18:</b> Influence of Different Steel Alloys on the Machining Results in Ultrasonic Assisted Diamond Turning: <i>B. Bulla, F. Klocke, O. Dambon, M. Hünten</i> | <b>C18:</b> Detecting Method of Bulk Defects in DLC Films Using Light Scattering: <i>Y. Sakurada, M. Takashima, T. Yasuhara, Y. Iwamoto, M. Matsuo, N. Ohtake</i>            | <b>D18:</b> Geometric Quality Indicators for Scanned Point Clouds: <i>H. Suzuki, Y. Ohtake, S. Shibata, T. Michikawa</i>  | <b>E18:</b> Development of Electric Rust Preventive Machining Method - Improvement of Electric Rust Preventive Chip Sedimentation System -: <i>N. Nishikawa, Y. Sato, F. Andou, T. Sawa, Y. Hagihara, H. Kato, N. Yoshihara, H. Okawai, T. Murase, T. Iyama, M. Mizuno, S. Tsukamoto</i> |
| 12:30 | <b>A19:</b> Machinability of CBN Tool in Turning of Tungsten Carbides: <i>T. Moriwaki, S. Tsurimoto, M. Nagata</i>   | <b>B19:</b> Investigation of Cutting Phenomena in High Speed Ultrasonic Turning: <i>K. Hara, D. Hashikai, H. Isobe, J. Ishimatsu, Y. Take, T. Koiwa</i>           | <b>C19:</b> Manufacturing of tribologically optimized surfaces for powertrain applications: <i>A. Schubert, P. Steinert, T. Schmidt, M. Hacker-Oschätzchen</i>               | <b>D19:</b> Analysis and Evaluation of Surface Force Effects in Vibrating Fiber Probing System for 3-D Micro Structure Measurements: <i>H. Murakami, A. Katsuki, T. Sajima</i>  | <b>E19:</b> Energy Reduction of Machine Tools: <i>Y. Oda, M. Fujishima, Y. Kawamura, M. Hideta</i>   |
| 12:50 | <b>A20:</b> Fabrication of Micropins Using Micro Turning Tools: <i>T. Furukawa, Y. Nomura, K. Harada, K. Egashira</i>  | <b>B20:</b> Investigation of Ultrasonic-Assisted Drilling of Al/SiC Metal Matrix Composite with Taguchi Method: <i>M.A. Kadivar, J. Akbari, R. Yousefi</i>        | <b>C20:</b> Effects of Penetrated Graphite on Tribological Properties of Copper Based Journal Bearing: <i>K. Tanizawa, H. Usami, T. Sato, Y. Hirai, T. Fukui</i>             |   | <b>E20:</b> Simulation on wear of a reused part that consider deviation of product's motion due to deterioration of the part: <i>M. Arita, H. Kawaharada, H. Hiraoka</i>   |
| 13:10 | <b>Lunch</b>   |   |  |   |  |
| 14:10 |  |   |  |   |  |

Nov. 9 (Fri) -3

|       | Room A (405)   | Room B (301A)  | Room C (301B)  | Room D (311A)   | Room E (311B)  |
|-------|--|--|--|---|--|
|       | <b>High precision machining (4)</b><br><i>Chairman: H. Isobe (Nagaoka University of Technology)</i>  | <b>Non-conventional machining (2)</b><br><i>Chairman: K. Yamamura (Osaka University)</i>   | <b>CAD/CAM Technology (1)</b><br><i>Chairman: K. Umeda (Chuo University)</i>   | <b>Precision metrology (5)</b><br><i>Chairman: T. Hayashi (Osaka University)</i>  | <b>Machine tools and control (1)</b><br><i>Chairman: S. Ibaraki, (Kyoto University)</i>  |
| 14:10 | <b>A21:</b> Ultra-Precision Cutting of Single Crystal Silicon Using Diamond Tool with Large Top Corner Radius: <i>Y. Kobaru, E. Kondo, R. Iwamoto</i>  | <b>B21:</b> Development of a Novel Surface Processing System Using Femtosecond Pulse Train: <i>Y. Fukuta, T. Hayashi, M. Michihata, Y. Takaya</i>  | <b>C21:</b> Detection of Surfaces and Edges in Large Point-Clouds Using Region-Growing on Spherical Space: <i>H. Masuda, R. Matsuoka, Y. Abe</i> |   | <b>E21:</b> In-process Monitoring of Tool Behavior and Tool Wear in End Milling by Use of Projection Image: <i>Y. Yoshimitsu, S. Satonaka, Y. Kawano, C. Iwamoto, D. Zuo, S. Yamashita</i> |
| 14:30 | <b>A22:</b> Micro-milling of fully sintered ZrO <sub>2</sub> Ceramics with Diamond coated end mills: <i>R. Bian, E. Ferraris, J. Qian, D. Reynaerts, L. Li, N. He</i>  | <b>B22:</b> Development of the Hole Generation Technology for Aircraft CFRP Parts: <i>H. Fukagawa, T. Hirogaki, T. Kato, A. Kato, M. Seki</i>  | <b>C22:</b> Simulation of contact deformation property of Digital Hand skin and its experimental verifications: <i>Y. Xie, S. Kanai, H. Date</i> | <b>D22:</b> Design of a Three-Axis Surface Encoder with a Blue-ray Laser Diode: <i>X. Li, Y. Shimizu, H. Muto, S. Ito, W. Gao</i>                   | <b>E22:</b> Sensor-less Tool Fracture Detection Applying Disturbance Observer Theory: <i>R. Koike, Y. Kakinuma, T. Aoyama</i>  |
| 14:50 | <b>A23:</b> Micro-Groove Cutting for Different Materials Using an Elastic Leaf Spring Type Tool Holder: <i>G. Herrera-Granados, K. Ashida, I. Ogura, Y. Okazaki, N. Morita, L. Ruiz-Huerta, A. Caballero-Rui</i> | <b>B23:</b> High Efficiency and Eco-Friendly Heat Treatment of Small Parts with a Low-power Diode Laser Beam: <i>T. Hirogaki, E. Aoyama, K. Ogawa, S. Ogawa, R. Okamoto, R. Oda</i>                    | <b>C23:</b> Nano-Micro Geometric Modeling Using Microscopic Image: <i>S. Usuki, K. T. Miura</i>  | <b>D23:</b> Design and Test of a Three-Axis Mosaic Surface Encoder: <i>W. Kim, Y. Shimizu, K. Hosono, S. Ito, W. Gao</i>                            | <b>E23:</b> On the extraction of milling tools out of shrink fit chucks: <i>B. Denkena, D. Heinisch</i>  |
| 15:10 | <b>A24:</b> Micro Cutting of Sapphire: <i>T. Matsumura, Y. Endo, H. Ozawa</i>  | <b>B24:</b> Novel System Technology for Trepanning a Laser Beam at Arbitrary Developments of Angle of Incidence and Lateral Focus Position: <i>P. Bechtold, G. Mayer, P. Lühring, M. Schmidt</i>       | <b>C24:</b> Manhattan-World Assumption for As-built Modeling Industrial Plant: <i>T. Mizoguchi, T. Kuma, Y. Kobayashi, K. Shirai</i>             | <b>D24:</b> Edge Contour Measurement of Single Point Diamond Cutting Tools by an Optical Probe: <i>S. Jang, Y. Shimizu, T. Asai, S. Ito, W. Gao</i> | <b>E24:</b> Method of improvement in identification accuracy of the dynamic characteristics of joints in jointed structure: <i>S. Shimizu, Y. Kabaya, H. Sakamoto, K. Yamashita</i>        |
| 15:30 | <b>A25:</b> Cutting performance of nano-polycrystalline diamond: <i>H. Sumiya, K. Harano, D. Murakami</i>  | <b>B25:</b> Thermal Conductivity of Metal Powder and Consolidated Material fabricated via Selective Laser Melting: <i>M.R. Alkahari, T. Furumoto, T. Ueda, A. Hosokawa, R. Tanaka, M.S. Abdul Aziz</i> | <b>C25:</b> Evaluating Positioning Uncertainty of Spherical Targets in Laser Scanning: <i>I. Tanaka, H. Masuda, M. Enomoto, K.T. Miura</i>       | <b>D25:</b> Automatic recognition of a piping system from laser scanned points by eigenvalue analysis: <i>K. Kawashima, S. Kanai, H. Date</i>       | <b>E25:</b> Measurement of Contact Stiffness for Stiffness Estimation of Machine Tool Supports: <i>D. Kono, T. Inagaki, A. Matsubara, I. Yamaji</i>  |
| 15:50 | <b>Coffee break</b>  |  |  |   |  |
| 16:10 |  |  |  |   |  |

Nov. 9 (Fri) -4

|                | Room A (405)   | Room B (301A)   | Room C (301B)  | Room D (311A)   | Room E (311B)   |
|----------------|--|---|--|---|---|
|                | <b>High precision machining (5)</b><br><i>Chairman: K. Egashira (Kyoto Institute of Technology)</i>  | <b>Non-conventional machining (3)</b><br><i>Chairman: B. Bulla (Fraunhofer IPT)</i>   | <b>CAD/CAM Technology (2)</b><br><i>Chairman: I. Tanaka (Tokyo Denki University)</i>   | <b>Precision metrology (6)</b><br><i>Chairman: H. Suzuki (University of Tokyo)</i>  | <b>Machine tools and control (2)</b><br><i>Chairman: R. Sato (Kobe University)</i>  |
| 16:10          | <b>A26:</b> Fundamental Experiment of Near-Dry Deep Hole Drilling with BTA Tool - the Optimal Cutting Conditions and Tool's Geometry:- <i>F. Nagata, K. Akashi, D. Ishibashi</i>   | <b>B26:</b> A study on driven-type rotary cutting for finish turning of carburized hardened steel: <i>H. Kato, T. Shikimura, Y. Morimoto, K. Shintani, T. Inoue, K. Nakagaki</i>              | <b>C26:</b> Improvement of Color Information in the Generation of 3D Models of Real Objects Using Range Intensity Images: <i>T. Takahama, R. Inomata, K. Terabayashi, K. Umeda, G. Godin</i>     | <b>D26:</b> Cr-N Strain-Gauge-Type Precision Displacement Sensor for Measuring Positions of Micro Stage: <i>T. Azuma, E. Niwa, Y. Peng, J. Kaneko, Y. Shimizu, S. Ito, W. Gao</i> | <b>E26:</b> Measurement of movement error and its compensation for 6-DOF parallel mechanism worktable: <i>Y. Zhang, J. Zhu, T. Tanaka, Y. Saito</i>   |
| 16:30          | <b>A27:</b> Influence of Material Composition on Ductile Machining of Tungsten Carbide in Elliptical Vibration Cutting: <i>J.G. Zhang, N. Suzuki, T. Kato, R. Hino, E. Shamoto</i> | <b>B27:</b> Development of a New Ultra-Precision Magnetic Abrasive Finishing Process: <i>Y.H. Zou, T. Shinmura</i>  | <b>C27:</b> Surface Generation for Magic-Mirror by End-Milling and Magnetic Polishing with Digitally Functioned CNC Machining Center: <i>R. Kawai, E. Aoyama, T. Hirogaki, K. Ogawa, K. Sawa</i> | <b>D27:</b> Improvement of an Air-Bearing Displacement Sensor with Nanometric Resolution: <i>S. Ito, K. Lee, Y. Shimizu, W. Gao</i>   | <b>E27:</b> Concept for Temperature Control in Broaching Nickel-Based Alloys: <i>F. Klocke, S. Gierlings, D. Veselovac</i>  |
| 16:50          | <b>A28:</b> The Effect of Cutting Point Swivel Machining by Using Round Tool with Special Chamfer: <i>X.R. Tang, K. Nakamoto, K. Obata, Y. Takeuchi</i>                            | <b>B28:</b> Adhesion strength of electroless copper plated layer on fluoropolymer surface modified by medium pressure plasma: <i>K. Ooka, Y. Yamamoto, Y. Hara, N. Zettsu, K. Yamamura</i>    | <b>C28:</b> Biofabrication of Biopolymer and Biocomposite Scaffolds for Bone Tissue Engineering: <i>Y.Y. Chen, H.L. Li, C.C. Chen, C.P. Jiang</i>  | <b>D28:</b> Effect of Discharge Condition on Bubble Collapse Behavior by Single Pulse Discharge: <i>Y. Akematsu, K. Kageyama, N. Mohri, H. Murayama</i>                           | <b>E28:</b> Proposal of a Machining Test of Five-axis Machining Centers Using a Truncated Square Pyramid: <i>K. Ohta, Z. Li, M. Tsutsumi</i>  |
| 17:10          | <b>A29:</b> Temperature Measurement of Surface Grinding Using a Fluid Supplying System from inside of Grinding Wheel: <i>Z. Li, Y. Yao, K. Nakae, H. Sasahara</i>                  | <b>B29:</b> Material Removal Rate Control in Open-Air Type Plasma Chemical Vaporization Machining Using Optical Actinometry: <i>Y. Yamamoto, Y. Hata, M. Hosoda, Y. Oshikane, K. Yamamura</i> | <b>C29:</b> Method to Decide Paths and Postures of Flat End Mill for 5-Axis Control Machining Based on Minimum Cusp Height: <i>T. Hokkyo, H. Aoyama, N. Sano</i>                                 | <b>D29:</b> Sub-Nanometer Line Width and Line Profile Measurement Using STEM Images with Metal Coating: <i>H. Okito, S. Takahashi, K. Takamasu</i>                                | <b>E29:</b> Polishing Process Automation by Industrial Robot with Polished Surface Quality Judgment Based on Image Processing -Visual Inspection Based on Pattern Matching -: <i>K. Okamoto, K. Morishige</i> |
| 17:30          | <b>A30:</b> Edge Sharpening and Surface Modification of Pcbn Cutting Tool by Pulsed Laser Grinding: <i>D. Suzuki, F. Itoigawa, K. Kawata, T. Nakamura</i>                          | <b>B30:</b> Quadruple Stacked Elliptical Supermirror Device for One Dimensional Neutron Focusing: <i>M. Nagano, F. Yamaga, D. Yamazaki, R. Maruyama, K. Soyama, K. Yamamura</i>               |  | <b>D30:</b> Characterization of TMR Head Durability against Lapping Based on Magnetic Performance: <i>H. Tanaka, Y. Maeda</i>   | <b>E30:</b> Analysis of Kinematic Motion Deviations of Machining Centers with Rotational Axis Based on Geometric Tolerances: <i>N. Sugimura, W. Thasana, K. Iwamura, Y. Tanimizu</i>                          |
| 18:30<br>20:30 | <b>Banquet</b><br><b>Venue: Grand Ballroom "Stella", The Westin Awaji Island</b>   |   |  |   |   |



Nov. 10 (Sat) -1

| 8:20           | Registration desk open   |  |   |  |  |
|----------------|--|--|---|--|--|
|                | Room A (405)   | Room B (301A)  | Room C (301B)   | Room D (311A)  | Room E (311B)  |
|                | <b>High precision machining (6)</b><br><i>Chairman: A. Kubota (Kumamoto University)</i>  | <b>Non-conventional machining (4)</b><br><i>Chairman: H. Takezawa (Kogakuin University)</i>  | <b>CAD/CAM Technology (3)</b><br><i>Chairman: M. Inui (Ibaraki University)</i>  | <b>Precision/Medical devices (1)</b><br><i>Chairman: N. Moronuki (Tokyo Metropolitan University)#</i>  | <b>Machine tools and control (3)</b><br><i>Chairman: H. Sakamoto (Sophia University)</i>   |
| 9:20           | <b>A31:</b> Formation Mechanism of Grain Cutting Edges in Micro Dressing of Polycrystalline cBN Grinding Wheels: <i>Y. Ichida</i>  | <b>B31:</b> A Simulation Study on Figure Error Correction Using Near-Gaussian Removal Function in Numerical Controlled Local Wet Etching: <i>X.M. Shen, M. Nagano, W.Q. Peng, Y.F. Dai, K. Yamamura</i>  |   | <b>D31:</b> Motion Artifact Compensation for Wristwatch Type Photoplethysmography Sensor: <i>K. Sasaki, D. Horiguchi, H. Naito</i>   | <b>E31:</b> Cutting Performance of Ceramic Tools in Turning of Mild Steel: <i>R. Tanaka, A. Hosokawa, T. Furumoto, T. Ueda</i>   |
| 9:40           | <b>A32:</b> Grinding of Super-Alloys Using Metal-Bonded CBN Wheel: <i>Y. Hasuda, T. Furusawa, A. Handa, Y. Kobori, S. Kinebuchi, Y. Harigaya</i>   | <b>B32:</b> Analysis of Discharge Current in Wire-EDM Considering Electromagnetic Fields in and between Electrodes: <i>K. Hada, M. Kunieda</i>   | <b>C32:</b> Proposal of Ball End-milling Condition Decision Methodology Using Data-mining from Tool Catalog Data: <i>H. Kodama, T. Hirogaki, E. Aoyama, K. Ogawa, H. Fukasawa</i>             | <b>D32:</b> Development of Wire Connected Mechanism for Precise Positioning: <i>M. Shinoda, S. Hirata, H. Aoyama</i>   | <b>E32:</b> Development of new scaife machine for making the high precision diamond cutting tools: <i>K. Nishimura, M. Ooka, H. Sasaoka</i>  |
| 10:00          | <b>A33:#</b> Soft-consolidation Abrasives Pneumatic Wheel Technology Oriented to Finishing of High-hardness Free-form Surface: <i>S.M. Ji, X. Zeng, M.S. Jing</i>  | <b>B33:</b> Challenge to Development of Functional Multi-wire EDM Slicing Method using Wire Electrode with Track-shaped Section: <i>Y. Okamoto, A. Kimura, A. Okada, Y. Uno, J. Ohya, T. Yamauchi</i>  | <b>C33:</b> Indexing 5-axis Machining Process Design Support System Shortening Die Fabrication Lead Time: <i>Y. Yamada, T. Okita, Y. Kuwano</i>   | <b>D33:</b> A Micro-Stage for Linear-Rotary Positioning: <i>Y.X. Peng, S. Ito, Y. Shimizu, W. Gao</i>  | <b>E33:</b> Development of Pipe Structure Frame for CNC lathe -Adaptation of thermal displacement control-: <i>N. Suzuki, Y. Morimoto, Y. Kaneko, H. Sugino, M. Isobe, Y. Okazaki</i>              |
| 10:20          | <b>A34:</b> Investigation into Chemo-Mechanical Fixed Abrasive Polishing of Fused Silica with the Assistance of Ultrasonic Vibration: <i>Y. Li, Y.B. Wu, L. Zhou, H. Guo, J. Cao, M. Fujimoto</i>                | <b>B34:</b> Development of Deburring Technology with Whirling EDM -influence of the motor rotational speed control conditions and the electrical conditions on the machining characteristics-: <i>A. Nakayama, V. Lertphokanon, M. Ota, K. Egashira, K. Yamaguchi, N. Kawada, S. Kouno</i> | <b>C34:</b> Generation of NC Program for Realizing High Speed Feed Rate of Cutting Tool: <i>S. Sakurai, H. Aoyama, N. Sano</i>  | <b>D34:</b> Quantitative Evaluation Method for Damping Capacity of Linear Rolling Bearings for Feed Drive Mechanisms: <i>Y. Sakai, M. Tsutsumi</i>                         | <b>E34:</b> Optimization of Feed Speed and Stroke for Step Micro Hole Drilling of Printed Wiring Boards by Response Surface Method: <i>N. Noguchi, T. Hirogaki, E. Aoyama, K. Ogawa, Y. Takeda</i> |
| 10:40          | <b>A35:</b> Technical performance of zirconia-coated carbonyl-iron-particles based magnetic compound fluid slurry in ultrafine polishing of PMMA: <i>H. Guo, Y.B. Wu, Y. Li, J. Cao, M. Fujimoto, S.D. Jacob</i> | <b>B35:</b> Performance of Wire-Sawing of Glass Assisted by Electro-Chemical Discharge: <i>K. Furutani, M. Tomoto</i>  | <b>C35:</b> Development of Orthros, an Evaluation System for Free Curved Plate Thickness with a Robot -Generation of the Path Considering Collision-: <i>Y. Okugawa, N. Asakawa, M. Okada</i> | <b>D35:</b> About Determining the Error Budget of a Miniaturized, Modular Machine Tool System for Micro Production: <i>N. Kong, S. Grimske, B. Roehlig, J.P. Wulfsberg</i> | <b>E35:</b> Development of a Drum-Type Manufacturing Method for Electroplated Diamond Wire Tools: <i>S. Yang, Y. Tani, Y. Zhang, J. Murata</i>   |
| 11:00<br>11:20 | <b>Coffee break</b>  |  |   |  |  |

Nov. 10 (Sat) -2

|       | Room A (405)  | Room B (301A)   | Room C (301B)   | Room D (311A)  | Room E (311B)  |
|-------|---|---|---|--|--|
|       | <b>High precision machining (7)</b><br><i>Chairman: J. Shinozuka (Yokohama National University)</i>   | <b>Non-conventional machining (5)</b><br><i>Chairman: K. Furutani (Toyota Technological Institute)</i>  | <b>CAD/CAM Technology (4)</b><br><i>Chairman: N. Asakawa (Kanazawa University)</i>  | <b>Precision/Medical devices (2)</b><br><i>Chairman: A. Kaneko (Tokyo Metropolitan University)</i>   | <b>Machine tools and control (4)</b><br><i>Chairman: Y. Morimoto (Kanazawa Institute of Technology)</i>  |
| 11:20 | <b>A36:</b> Molecular Dynamics Simulation of Metal Cutting with Local Hydrostatic Pressure Field Formation: <i>K. Uezaki, J. Shimizu, L. Zhou, T. Onuki, H. Ojima</i>                       | <b>B36:</b> Electrochemical Micromachining Using Electrostatic Induction Feeding Method: <i>T. Koyano, M. Kunieda</i>                                       | <b>C36:</b> Reuse of Digital Mock-up Data by Using Shape Matching: <i>S. Ranglani, T. Michikawa, H. Suzuki</i>                  | <b>D36:</b> Self-Assembly of Fine Particles on Optical Element for Sensitivity Improvement of Biochemical Sensor: <i>N. Moronuki, M. Nishio</i>  | <b>E36:</b> Change in dynamic characteristics of spindle for machining centers caused by chucking mechanism of clamped toolholders: <i>H. Sakamoto, Y. Maeki, S. Shimizu</i> |
| 11:40 | <b>A37:</b> First-Principles Study of Reaction Process of SiC and HF Molecules in Catalyst-Referred Etching: <i>P.V. Bui, K. Inagaki, Y. Sano, K. Yamauchi, Y. Morikawa</i>                 | <b>B37:</b> Generation of Micro Electrodes for Micro EDM: <i>K. Miura, S.I. Kohmo, R. Naruoka, T. Yamada, H.S. Lee</i>                                      | <b>C37:</b> Automatic Reverse Engineering Based on Reconstructing Measurement Data in 3D-Lattice: <i>K. Tsushima, H. Aoyama</i> | <b>D37:</b> Microstructuring of Culture Media and its Effect on Cell Adhesion: <i>Y. Tanaka, H. Satou, N. Moronuki</i>   | <b>E37:</b> A Thermally Stable High Speed Spindle System Equipped with Self-cooling Function: <i>Y. Tamura, H. Sawano, H. Yoshioka, H. Shinno</i>                            |
| 12:00 | <b>A38:</b> Simulation investigation ultrasonically assisted grinding of SiC ceramics with single diamond abrasive grain: <i>J. Cao, Y.B. Wu, G. Huiru, Y.G. Li, M. Fujimoto, A. Ohmura</i> | <b>B38:</b> Multiple Discharges Phenomena in EDM Using Electrostatic Induction Feeding Method: <i>G.L. Feng, X.D. Yang, K. Tian, X.Z. Wang</i>              | <b>C38:</b> Cutter Engagement Feature Extraction by Using Dixel Representation Solid Model: <i>M. Inui, N. Umezu</i>            | <b>D38:</b> Fabrication of Precise Asymmetric Nanoshells Array with Nanogaps for A Label-Free Immunoassay Based on NIR-light Responsive LSPR: <i>S. Uchida, K. Yamamura, N. Zettsu</i> | <b>E38:</b> Hydrostatic Bearing with High Bulk Modulus Fluid: <i>K. Kuze, H. Sawano, H. Yoshioka, H. Shinno</i>  |
| 12:20 | <b>A39:</b> Investigation of Particle Impact Phenomena in Powder Jet Deposition Process: <i>C. Nishikawa, K. Mizutani, T.F. Zhou, J.W. Yan, T. Kuriyagawa</i>                               | <b>B39:</b> Relationship between Magnetic Flux Density and Temperature Distributions of Permanent Magnets by EDM: <i>Y. Ichimura, H. Takezawa, N. Mohri</i> |   | <b>D39:</b> The Study of Equalizing Injection Force in Multiple Injecting Needle-Free Injector: <i>M. Kudo, M. Nomoto, N. Takahashi, J. Fukushima</i>                                  | <b>E39:</b> Precise positioning of an air bearing lead screw stage by semi-closed loop control: <i>M. Fukuda, Y. Niwase</i>  |
| 12:40 |   | <b>B40:</b> The Machining Characteristics of Insulating AlN Ceramics by EDM: <i>K. Kaneko, K. Yamashita, Y. Fukuzawa</i>                                    |   |  | <b>E40:</b> Development of Dynamic Loading Device for Rotating Spindle of Machine Tools: <i>R. Sawamura, S. Ikenaga, A. Matsubara</i>  |
| 13:00 | <b>Lunch</b>  |   |   |  |  |