

10th International Conference of the European Society for Precision Engineering and Nanotechnology

Sessions 5, 6, 9 & 10

Thursday 3rd June 2010, 10:00-11:30

Session 5: Ultra Precision Manufacturing & Assembly Processes

P5.01_Suzuki	Precision Cutting of Structured Ceramic Molds with Micro PCD Milling Tool	Prof.	Hirofumi	Suzuki	Chubu University
P5.02_Ruhs	On-machine measurement for the micro-EDM-milling process using a confocal white-light sensor	Dipl-Ing	Christoph	Ruhs	wbk Institute of Production Science, Karlsruhe Institute of Technology (KIT)
P5.03_Kolb	Analysis of the Injection Overmolding Process for Polymer Lenses by use of a Specially Designed Mold	Dipl-Ing	Philipp	Kolb	Fraunhofer IPT
P5.04_Seugling	Manufacturing Ultra-Precision Meso-scale Products by Coining	Dr	Richard	Seugling	LLNL
P5.05_Smale	Application of the Ultrasonic Welding Process to the Manufacture of a Micro Fluidics Device	Mr	Daniel	Smale	University of Nottingham
P5.06_Axinte	Study of the effect of diamond crystallographic orientation in micro-milling and micro-grinding of Ti-6Al-4V	Dr	Dragos	Axinte	University of Nottingham. UK
P5.07_Kim	Experimental Evaluation of Machinable Aspect Ratio in Micro Cutting of V-Grooves on Electroless Nickel Plated Die Materials	Prof.	Hyun Chul	Kim	Inje University

P5.08_Ettelt	Micro Milling of Titanium and Titanium Alloys	Dipl-Ing	Juliane	Ettelt	Department of Machining Technology, Technische Universität Dortmund, Germany
P5.10_Kim	Four-body Finishing Method Using Hydrophilic Carrier Particles	Mr	Naoaki	ICHINOHO	Ritsumeikan University, Japan
P5.11_Je	A Study on the Machining Technology for Micro Prism Structure Array by Using Shaper Cutting Process	Dr	Tae-Jin	Je	Korea Institute of Machinery & Materials (KIMM)
P5.12_Takeuchi	5-axis Control Ultraprecision Micromilling by Means of a Developed CAPP/CAM System	Prof.	Yoshimi	Takeuchi	Osaka University
P5.13_Lee	Design and Analysis of In-Plane Ultra-Precision XY \hat{z} Positioning Stage with Cymbal Guide and Scott-Russell mechanism	Prof.	Moon Gu	Lee	Ajou University
P5.15_Moronuki	Patterned self-assembly of fine particles by the combination of dispenser and positioning stage	Prof.	Nobuyuki	Moronuki	Tokyo Metropolitan University
P5.16_Trych	Electrical Discharge Machining of Microholes Using Carbon Fibre Tool Electrodes	Dipl-Ing	Anna	Trych	Warsaw University of Technology
P5.17_Pohl	Micro Impact Extrusion of Precision Cavities with Modular Dies	Dipl-Ing	Robert	Pohl	Group leader
P5.18_Schoenemann	Tool-Development for Diamond Micro Chiseling	Mr	Lars	Schoenemann	LFM - Laboratory for Precision Machining, University of Bremen, Germany
P5.19_Meszaros	New cutting edge geometries for high precision hard turning	Dr	Imre	Meszaros	Associate Professor
P5.20_Kohrs	Implementation of a flexure based feed unit for the Square Foot Manufacturing Concept	Dipl-Ing	Peter	Kohrs	Helmut-Schmidt-University, University of Federal Armed Forces Hamburg, Germany
P5.22_Grinevichs	The providing of ultra precision conditions for details' pressing processes on rotary machines	Dipl-Ing	Ivans	Grinevich	Riga Technical University

P5.23_Tanaka	Deformation and fracture mechanisms in single-walled carbon nanotube/silicon nanocomposite based on molecular dynamics analysis	Prof.	Hiroaki	Tanaka	Osaka Electro-Communication University
P5.24_Klimscha	Research on the machining of green feedstock material for sinter joining	Dipl-Ing	Katharina	Klimscha	wbk Institute of Production Science wbk, Karlsruhe Institute of Technology (KIT) Germany
P5.25_Leberle	Method to couple several miniature oscillating conveyors to a feeding system	Dipl-Ing	Urs	Leberle	wbk Institute of Production Science, Karlsruhe Institute of Technology (KIT),
P5.26_Bulla	Direct diamond machining of aspherical steel moulds in sub micron accuracy	Dipl-Ing	Benjamin	Bulla	Fraunhofer IPT
P5.28_Lee	Vibration and Noise reduction mechanism with leaf spring module for treadmill	Prof.	Moon G.	Lee	Division of Mechanical Engineering, Ajou University, Korea
P5.29_Kaestner	Precise Machining of Micro Dimples in Large Scale Areas	Dipl-Ing	Jan	Kaestner	Institute of Production Engineering and Machine Tools
P5.31_Kudla	Combined Mechanical and Electrochemical Discharge Machining of Microstructures in Glasses	Dr	Leszek	Kudla	Warsaw University of Technology
P5.32_Neugebauer	Planar Electrostatic Grippers for Precise Handling of Piezo-ceramic Micro Parts	Dr	Hans-Joachim	Koriath	Institute for Machine Tools and Production Processes, Chemnitz University of Technology
P5.33_Gaebler	Precision Grinding with CVD Diamond Coated Grinding Wheels	Dr	Jan	Gaebler	Fraunhofer Institute for Surface Engineering and Thin Films IST
P5.35_Hoffmann	Square Foot Manufacturing - Mechanical Interface	Dipl-Ing	Silka	Hoffmann	Helmut-Schmidt-University, University of Federal Armed Forces Hamburg, Germany

P5.36_Gebhardt	Ultraprecision Manufacturing and Alignment of Aspherical Mirrors for a thermal infrared imaging spectrometer	Dipl-Ing	Andreas	Gebhardt	Research – Fraunhofer IPT, Germany
P5.37_Jasinevicius	High fidelity and low cost replication of Fresnel lenses	Dr	Renato	Jasinevicius	Depto Eng. Mecanica, EESC, USP, Sao Carlos, Brazil
P5.38_Jasinevicius	Single point diamond turning of aluminum mirrors for Omni vision	Dr	Renato	Jasinevicius	Depto Eng. Mecanica, EESC, USP, Sao Carlos, Brazil
P5.39_Meess	Laser Cutting of Thin Gold Foils	Dipl-Ing	Rudolf	Meess	Physikalisch-Technische Bundesanstalt Braunschweig, Germany
P5.40_Rickens	Investigation on resulting form errors of precision ground optical moulds with respect to tool path compensation	Ms	Kathrin	Meiners	Laboratory for Precision Machining LFM, University of Bremen
P5.41_Wang	Case Study Applications in Numerical Simulation for Precision Glass Molding Process	Mr	Liu	Gang	Fraunhofer IPT
P5.42_Oberschmidt	Investigation on Force and Temperature Distribution in Cutting Parts while Micro Milling with Monocrystalline Diamond End Mills	Dr	Dirk	Oberschmidt	Fraunhofer Institute for Production Systems and Design Technology, Germany
P5.43_Joswig	Femtosecond laser structuring of diamond tool tips for microoptics fabrication	Mr	Andreas	Joswig	Institute of Applied Physics, University of Jena, Germany
P5.44_Luo	Fabrication of micro fluidic mould by micro milling and laser de-burring	Dr	Xichun	Luo	Heriot-Watt University
P5.45_Tuecks	Development of a membrane based polishing tool	Dipl-Ing	Roland	Tuecks	Fraunhofer IPT
P5.46_Kersschot	On Characterization of Dressing Process in ELID-Grinding	Mr	Bruno	Kersschot	KULeuven, Department of Mechanical Engineering

P5.47_Georgiadis	Investigation of coating thickness distribution on diffraction grating glass molding tools	Dipl-Ing	Kyriakos	Georgiadis	Fraunhofer Institute for Production Technology
P5.49_Meyer	Microfabrication using the Deep x-ray Lithography: a contribution to process control	Dr	Pascal	MEYER	Institute for Microstructure Technology, Karlsruhe Institute of Technology (KIT)
P5.50_Montanari	Fabrication of microstructures using PMMA by rolling process	Prof.	Luciana	Montanari	University of Sao Paulo
P5.51_Chen	Grinding of Optical Glass using Copper-Resin Bonded Coarse-Grained Diamond Wheels	Miss	Junyun	Chen	Center for Precision Engineering (CPE), Harbin Institute of Technology, Harbin, China
P5.52_Vollmer	Investigations on a novel polishing technology for machining ultraprecise freeform surfaces	Dipl-Ing	Marco H. A.	Vollmer	Carl Zeiss AG and University of Applied Sciences Ravensburg-Weingarten
P5.53_Jourdain	Process Characterisation and Key Tasks for Cost-effective 3D Figuring of Specular Surfaces Using RAP	Dr	Renaud	Jourdain	Cranfield University, Precision Engineering Centre
P5.55_Cvetkovic	Creating Solid State Micro Joints through Micro Machining	Dipl-Ing	Srecko	Cvetkovic	Institute for Microtechnology, Center for Production Technology, Leibniz Universitaet Hannover, Germany
P5.58_Cheung	A Study of Machining Strategy in Computer Controlled Ultra-precision Polishing of Structured Surfaces	Dr	Benny C.F.	Cheung	Hong Kong Polytechnic University
P5.59_Rongbin W.B.	Modeling the Size Effect in Ultra-precision Machining by Mechanism-based Strain Gradient Crystal Plasticity	Prof.	Lee	Wing Bun	State Key Laboratory in Ultra-Precision Machining Technology, The Hong Kong Polytechnic University, Hong Kong SAR, P.R.China

P5.62_Feng	A novel fast algorithm for dwell time in magnetorheological finishing (MRF) of large aperture optics	Dr	Shi	Feng	Dept. of Mechatronics Engineering, School 3, National University of Defense Technology, Changsha, Hunan, P.R. China
P5.64_Duduch	Single Point Diamond Turning of Tungsten Carbide	Prof.	Jaime	Duduch	University of Sao Paulo
P5.66_Jahan	Modeling and experimental study of vibration-assisted micro-EDM of cemented carbide	Mr	Muhammad Pervej	Jahan	PhD candidate, National University of Singapore
P5.67_Sakamoto	Effect of tool shape on precision hole-cutting of laminated composite materials	Dr	Shigehiko	Sakamoto	Kumamoto University
P5.68_Kirino	Achievement of Super-Smooth Surface of Cu by Abrasive-Free CMP Utilizing Vacuum Ultra-Violet Light	Mr	Okiharu	Kirino	Crystal Optics Incorporated and Osaka University

Session 6: Wind Turbines – Precision Engineering Challenges

P6.01_Heisselmann	Development of the Sphere Anemometer for 2D Wind Speed Measurements	Mr	Hendrik	Heisselmann	ForWind, University of Oldenburg
P6.02_Fuhrmann	Challenges in reverse engineering of unknown gears by 5-axes-milling	Mrs	Martina	Fuhrmann	University of Bremen
P6.03_Puczykowski	New Anemometer for Atmospheric Flows	Prof.	Jaroslav	Puczykowski	University of Oldenburg
P6.04_Guemmer	Mechatronic chuck with 4 degrees of freedom precision positioning	Dipl-Ing	Olaf	Guemmer	Institute of Production Engineering and Machine Tools (IFW), Leibniz Universitaet Hannover, Germany

Session 9: Important/Novel Advances in Precision Engineering & Nano Technologies

P9.01_Matsumuro	High-Aspect-Ratio Nanofabrication Using Carbon Nanotube Probe in Scanning Tunneling Microscope	Prof.	Akihito	Matsumuro	Department of Mechanical Engineering, Aichi Institute of Technology
P9.03_Scott	Development of reconfigurable support structures for nano focussing x ray beamlines	Mr	Stewart	Scott	Diamond Light Source Ltd
P9.04_Blazevic	Experimental characterisation of off-the-shelf vibration energy scavengers	Dipl-Ing	David	Blazevic	University of Rijeka, Faculty of Engineering
P9.05_Onikura	Generation Mechanism of Residual Stress on Surface Machined in Turning Assisted by Ultrasonic Vibration	Prof.	Hiromichi	Onikura	Kyushu University
P9.06_Wang	Manufacturing of Riblet-Structures by Profile Grinding with Metal Bonded Wheels	Dipl-Ing	Thomas	Krawczyk	Institute of Production Engineering and Machine Tools
P9.07_Yamamura	Development of Atmospheric-Pressure-Plasma-Assisted High-efficient and High-integrity Machining Process of Difficult-to-Machine Materials	Prof.	Kazuya	Yamamura	Osaka University
P9.09_Hahmann	Investigation of the Cutting Behavior of Piezoelectric Ceramics during Grinding with Diamond Pins	Dipl-Ing	Marc	Rueggeberg	IWF TU Braunschweig
P9.10_Kuhfuss	Forming planar micro-structures into 3D objects	Prof.	Bernd	Kuhfuss	Bremen Center of Mechatronics
P9.11_Meier	Linearization of an open-loop nano Fast Tool Servo	Dipl-Ing	Axel	Meier	Laboratory for Precision Machining
P9.12_Kuhfuss	Simulation of micro rotary swaging by neural network modelling	Prof.	Bernd	Kuhfuss	University of Bremen
P9.13_Ohnishi	Effects of Drill Geometry on Quality of Hole Drilled into Quartz Glass by Micro PCD Drill	Dr	Osamu	Ohnishi	Kyushu University

P9.14_Nestler	Approaches to Enhance Surface Integrity in Turning of Aluminium Matrix Composites	Dipl-Ing	Andreas	Nestler	Chemnitz University of Technology
P9.15_Luo	Deterministic fabrication of nanostructures in plasmonic lens by Focused Ion Beam (FIB)	Dr	Xichun	Luo	Heriot-Watt University, UK
P9.16_Mick	Development of an AFM-in-SEM Nanomanipulation Cell	Dipl-Ing	Uwe	Mick	AMiR, University of Oldenburg, Germany
P9.17_Geisert	Software Agent Based Monitoring for a Micro Milling Spindle	Dipl-Ing	Claudio	Geisert	Institute for Machine Tools and Factory Management, Technische Universitaet Berlin, Germany
P9.20_Kamenzky	Investigations on the Influence of Powder Suspended Dielectrics in μ -Wire-EDM	Mrs	Susanne	Kamenzky	RWTH Aachen University, Laboratory for Machine Tools and Production Engineering, Germany
P9.22_Schwade	Precision Grinding with In-Process ECM-Dressing	Dipl-Ing	Max	Schwade	WZL, RWTH Aachen University
P9.23_Lavrynenko	Preparation and Control of Complex Surfaces for Combustion Engines Catalyst Neutralization Systems	Dr	Sergiy	Lavrynenko	NTU"KhPI"
P9.24_Domingos	Application of PCD and Boron doped CVD-Diamond in Micro EDM	Mr	David Carlos	Domingos	Institute for Machine Tools and Factory Management
P9.25_Garzon	Vibration Analysis of Slender Sinking EDM Electrodes for the Precision Manufacturing of High Aspect Ratio Cavities	Mr	Miguel	Garzon	WZL
P9.26_Tobiason	Compact nanometer resolution fiber-optic encoder with embedded reference mark	Dr	Joseph	Tobiason	Micro Encoder Inc.
P9.28_Vogt	Machining Processes for Carbon Fibre infiltrated Silicon Carbide (C/C-SiC) Materials	Dipl-Ing	Christian	Vogt	University of Applied Sciences Hochschule Deggendorf, Germany

P9.29_Dieckmann	Micro Electro Discharge Machining (μ -EDM) with Additivated Dielectrics	Dipl-Ing	Jens	Dieckmann	RWTH Aachen University, Laboratory for Machine Tools and Production Engineering (WZL)
P9.30_Traisgkhachol	Fabrication of Electroplated Cu Tool Electrodes for Micro EDM using a Si Micromold	Dipl-Ing	Ornwas	Traisgkhachol	Leibniz Universitaet Hannover, Germany
P9.31_Qian	On Performance of a UV-Adhesive Gripper	Dr	Jun	Qian	Katholieke Universiteit Leuven
P9.32_Suzuki	Dressing-free Grinding of Electrically Conductive PCD by Complex Grinding Assisted with Electrical Discharge Machining	Prof.	Kiyoshi	Suzuki	Nippon Institute of Technology
P9.33_Ninomiya	Development of Electrically Conductive PCD and its EDM Property	Prof.	Shinichi	Ninomiya	Nippon Institute of Technology
P9.34_Iwai	A Study on Dynamic Friction Polishing Method Utilizing Resistance Heating for Electrically Conductive Diamond	Prof.	Manabu	Iwai	Toyama Prefectural University
P9.36_Walters	Characteristics of Aerosol Assisted and Conventional Chemical Vapour Deposition of Metal Oxide Thin Films on Glass, with or without Noble Metal or p Type Dopants	Ms	Gillian	Walters	UCL
P9.37_Olea	Precision Hexapod - Preliminary CAD (A Work for Micro)	Prof.	Gheorghe	Olea	Micos
P9.38_Klocke	The SEM/FIB Workbench: Nanorobotics System Inside of Scanning Electron or Focussed Ion Beam Microscopes	Dr	Volker	Klocke	Klocke Nanotechnik

Session 10: Medical Applications of Precision Engineering

P10.01_Zheng	Femtosecond laser-induced modification in surface wettability of PMMA for microfluidic applications	Dr	Hongyu	ZHENG	SIMTech
P10.02_Tsuchiya	Development of tube type valve-less micropump with ring type PZT actuator	Prof.	Kazuyoshi	Tsuchiya	Tokai University
P10.03_Malinowski	The Laparosound(TM) ultrasonic morcellator - a high precision, mechatronic device for surgery	Mr	Igor	Malinowski	Warsaw University of Technology
P10.06_Turger	Roughness prediction for elastic polishing of complex ceramic workpieces	Dipl-Ing	Anke	Turger	Leibniz Universitaet Hannover, Institute of Production Engineering and Machine Tools
P10.07_Tanaka	High sensitive biosensing using microstructured surface	Dr	Yasuhiro	Tanaka	Tokyo Metropolitan University
P10.08_Umezu	Precision Micro-fabrication by Gelatin Patterning with Electrostatically-Injected Droplet (ELID) Method	Prof.	Shinjiro	Umezu	Riken & Tokai Univ.
P10.10_Meenink	A master- μ slave robot for vitreo-retinal eye surgery	Dipl-Ing	Thijs	Meenink	Technische Universiteit Eindhoven
P10.11_Lavrynenko	Diamond cutting and control of surfaces for niobium and tantalum oxides biomedical coating	Dr	Sergiy	Lavrynenko	NTU"KhPI"
P10.12_Stoebenau	Micromilling for the Fabrication of Complex Optical Microsystems	Dipl-Ing	Sebastian	Stoebenau	Ilmenau University of Technology
P10.14_Luo	A Micro Force Measurement, Transmission and Control System for Biomechanics Studies	Dr	Hong	Luo	Singapore Institute of Manufacturing Technology