

Life-Cycle Engineering and Assembly (A)

A1- Process design and modelling methods for automated handling and draping strategies for composite components

Christopher Bruns, Moritz Mücke-Camuz, Florian Bohne, Annika Raatz / H.-P. Wiendahl (1)

A2- A highly efficient hybrid inductive joining technology for metals and composite

Verena Kraeusel, Alexander Froehlich, Martin Kroll, Patrick Rochala, Jonas Kimme, Rafael Wertheim (1)

A3- Trend-specific clustering for micro mass production of linked parts

Kirsten Tracht (2), Ann-Kathrin Onken, Phil Gralla, Joel Haji Emad, Niklas Kipry, Peter Maass

A4- Brainwaves driven human-robot collaborative assembly

Abdullah Mohammed, Lihui Wang (1)

A5- Deep learning-based human motion recognition for predictive context-aware human-robot collaboration

Peng Wang, Hongyi Liu, Lihui Wang (1), Robert X. Gao (1)

A6- Role of Manufacturing towards Achieving Circular Economy: the Steel Case

Peng Wang, Sami Kara (1), Michael Hauschild (1)

A7- Integrated Computational Life Cycle Engineering - Application to the Case of Electric Vehicles

Felipe Cerdas, Sebastian Thiede, Christoph Herrmann (2)

A8- Demanufacturing Photovoltaic Panels: Comparison of end-of-life treatment strategies for improved resource recovery

Joost R. Duflou (1), Jef R. Peeters, Diego Altamirano, Ellen Bracquene, Wim Dewulf (2)

A9- A multi-method simulation approach for evaluating the effect of the interaction of customer behaviour and enterprise strategy on economic viability of remanufacturing

Aydin Nassehi (2), Marcello Colledani (2)

A10- A location-allocation model for sustainable NdFeB magnet recovery under uncertainties

Hongyue Jin, Byung Duk Song, Gamini Mendis, Yuehwern Yih, John W. Sutherland (1)

Cutting (C)

C1- A Novel Approach for Real-Time Prediction and Prevention of Tool Chipping in Intermittent Turning Machining

Mahmoud Hassan, Ahmad Sadek, Ahmed Damir, Helmi Attia (1), Vincent Thomson

C2 - Performance of a new piezoceramic thick film sensor for measurement and control of cutting forces during milling

Welf-Guntram Drossel (2), Sylvia Gebhardt, André Bucht, Burkhard Kranz, Jörg Schneider, Martin Ettrichrätz

C3- Stability analysis of modulated tool path turning

Ryan Copenhaver, Tony Schmitz, Scott Smith (1)

C4- Cutting force model for gear honing

Thomas Bergs / F. Klocke (1)

C5- A hybrid approach to integrate machine learning and process mechanics for the prediction of specific cutting energy

Ziye Liu, Y.B. Guo (2)

C6- Temperature Calculation in Cutting Zones

Hans-Christian Moehring (2), Valerii Kushner, Michael Storchak, Thomas Stehle

C7- Towards a new tribological approach to predict cutting tool wear

Joel Rech, Axel Giovenco, Cedric Courbon, Frederic Cabanettes / K. Bouzakis (1)

C8- Novel drill bit with characteristic web shape for high efficiency and accuracy

Naohiko Sugita (2), Masaya Oshima, Katsuyo Kimura, Giichi Arai, Koichi Arai

C9- Basic principles for the design of cutting edge roundings

Benjamin Bergmann, Thilo Grove / K. Weinert (1)

C10- Influence of oxygen on the tool wear in machining

Volodymyr Bushlya, Filip Lenrick, Jan-Eric Stahl, Rachid M'Saoubi (1)

C11- Cutting characteristics of PVD-coated tools deposited by filtered arc deposition (FAD) method

Akira Hosokawa, Goushi Hoshino, Tomohiro Koyano, Takashi Ueda (1)

C12- Bias voltage optimum adjustment considering coatings' strength and adhesion requirements when cutting various steels

Georgios Skordaris (2), Konstantinos-Dionysios Bouzakis (1), Tilemachos Kotsanis, Paschalis Charalampous, Emmanouil Bouzakis, Roland Bejjani

C13- Thermomechanical analysis induced by interrupted cutting of Ti6Al4V under several cooling strategies

Pierre Lequien, Gerard Poulachon (1), Jose Outeiro (2)

C14- Sub-zero cooling: a novel strategy for high performance cutting

Benjamin Kirsch, Stephan Basten, Hans Hasse, Jan Christian Aurich (1)

C15- Fatigue life of machined Ti6Al4V alloy under different cooling conditions

Domenico Umbrello (2), Giovanna Rotella

C16- The influence of burr formation and feed rate on the fatigue life of drilled titanium and aluminium alloys used in aircraft manufacture

Ali M. Abdelhafeez, Sein Leung Soo (1), David K. Aspinwall (1), Anthony Dowson, Dick Arnold

C17- On the Influence of gamma prime upon machining of advanced Nickel based superalloy

Zhirong Liao, Dragos Axinte (1), Maxime Mieszala, Rachid M'Saoubi (1), Johann Michler, Mark Hardy

C18- A novel work holding method for hard turning using shoe-centerless concept

Rahul Chaudhari (3), Fukuo Hashimoto (1)

C19- Development of a directly-driven thread whirling unit with advanced tool materials for mass-production of implantable medical parts

Masakazu Soshi, Franco Rigolone, Jennifer Sheffield, Kazuo Yamazaki (1)

C20- High-efficiency swinging-rotating diamond shaping of Fresnel lenses on roller molds

XinQuan Zhang, Rui Huang, A. Senthil Kumar, Kui Liu / E. Brinksmeier (1)

C21- Study of stress intensity factor on the anisotropic machining behavior of single crystal sapphire

Hae-Sung Yoon, Suk Bum Kwon, Aditya Nagaraj, Seola Lee, Sangkee Min (2)

C22- Modelling of the Combined Microstructural and Cutting Edge Effects in Ultraprecision Machining

Mustafizur Rahman (1), Keng Soon Woon, V.C. Venkatesh (1), M.A. Rahman

Design (Dn)

Dn1- Model-based design and simulation of smart factory from usage and functional aspects

Hitoshi Komoto (2), Keijiro Masui

Dn2 - Enhancing development trajectories of synthetic environments

Roy Damgrave, Eric Lutters (1)

Dn3- Workplace analysis and design using virtual reality techniques

George Michalos, Anna Karvouniari, Nikolaos Dimitropoulos, Theodoros Togias, Sotiris Makris (2)

Dn4- Mapping customer needs to design parameters in the front end of product design by applying deep learning

Yue Wang, Daniel Y. Mo, Mitchell Tseng (1)

Dn5- Product features characterization and customers' preferences prediction based on purchasing data

Jian Zhang, Alessandro Simeone, Peihua Gu (1), Bo Hong

Dn6- Smart pressure distribution estimation in biological joints for mechanical bio-inspired design

Elia Picault, Emmanuel Mermoz (2), Thomas Thouveny, Jean-Marc Linares (1)

Dn7- Machine Learning in Tolerancing for Additive Manufacturing

Zuowei Zhu, Nabil Anwer (2), Qiang Huang, Luc Mathieu (1)

Dn8- Resilient architecture for cyber-physical production systems

Tetsuo Tomiyama (1), Florian Moyen

Dn9- An information and simulation framework for increased quality in welded components

Rikard Söderberg (2), Kristina Wärmefford, Julia Madrid, Samuel Lorin, Anders Forslund, Lars Lindkvist

Dn10- Digital twin driven prognostics and health management for complex equipment

Fei Tao, Meng Zhang, Yushan Liu, A.Y.C. Nee (1)

Dn11- An architectural approach to the integration of safety and security requirements in smart products and systems design.

Andreas Erik Riel (2), Christian Kreiner, Richard Messnarz, Alexander Much

Dn12- Novel design approach for the creation of 3D geometrical model of personalized bone scaffold

Nikola Vitkovic, Milos Stojkovic, Vidosav Majstorovic (1), Miroslav D. Trajanovic, Jelena Milovanovic

Electro-Physical & Chemical Processes (E)

E1- Nanoscale surface patterning of diamond utilizing carbon diffusion reaction with a microstructured titanium mold

Jiwang Yan (2), Yuji Imoto

E2- Direct manufacturing of diamond composite coatings onto silicon wafers and heat transfer performance

Rocco Lupoi, Tomas Lupton, Richard Jenkins, Anthony Robinson, Garret O'Donnell (2)

E3- Modeling Study of the Hydrodynamic Arc Breaking Mechanism in BEAM

Wansheng Zhao, Lin Gu, Fawang Zhang, K.P. Rajurkar (1)

E4- Direct Laser Assisted Machining with a Sapphire Tool for Bulk Metallic Glass

Simon Park (2), Yuan Wei, Xiaoliang Jin

E5- Efficient and damage-free ultrashort pulsed laser cutting of polymer intraocular lens implants

Johannes Heberle, Tom Häfner, Michael Schmidt (2)

E6- Mechanisms and Processing Limits of Surface Finish using Laser-thermochemical Polishing

Sandro Eckert, Frank Vollertsen (1)

E7- Precision Enhanced Electrochemical Jet Processing

Adam Thomas Clare, Alistair Speidel, Ivan Bisterov, Alexander Jackson-Crisp, Jonathon Mitchell-Smith / D. Williams (1)

E8- Efficient machining of complex shaped seal slots for turbomachinery

Umang Maradia, Mikhail Kliuev, Christoph Baumgart / B. Schumacher (1)

E9- Attempts to Fabricate Micro Injection Molding Tools and Assemble Molded Micro Parts on Same EDM Machine

Kazuki Oshima, Masanori Kunieda (1)

E10- Experimental investigation of the process behaviour in Mechano-Electrochemical Milling

Dries Van Camp, Jun Qian, Jef Vleugels, Bert Lauwers (1)

E11- Anomalous influence of polarity in sink EDM of titanium alloys

Maximilian Holsten, Philip Koshy (1), Andreas Klink (2), Alexander Schwedt

E12- Additive Manufacturing of Metal Components with the ARBURG Plastic Freeforming Process

Quirin Spiller, Juergen Fleischer (1)

E13- A plasma-assisted bio-extrusion system for tissue engineering

F. Liu, W. Wang, W. Mirihanage, Srichand Hinduja (1), Paulo J. Bartolo (1)

E14- Effects of cladding path on workpiece geometry and impact toughness in directed energy deposition of 316L stainless steel

Daisuke Kono, Akihiro Maruhashi, Iwao Yamaji, Yohei Oda, Masahiko Mori (1)

E15- Controlling metal structure with remelting process in direct energy deposition of Inconel 625

Ryo Koike, Taro Misawa, Tojiro Aoyama (1), Masaki Kondo

E16- Study of an annular laser beam based axially-fed powder cladding process

Edvard Govekar (1), Andrej Jeromen, Alexander Kuznetsov, Gideon Levy (1), Makoto Fujishima (3)

E17- 3D Printing of Multiple Metallic Materials via Modified Selective Laser Melting

Chao Wei, Lin Li (1), Xiaoji Zhang, Yuan-Hui Chueh

E18- A scalable predictive model and validation for residual stress and distortion in selective laser melting

Chao Li, Y.B. Guo (2), Xiaoying Fang, Fengzhou Fang (1)

E19- Experimental investigation of melt pool behaviour during selective laser melting by high speed imaging

Tatsuaki Furumoto (2), Kyota Egashira, Kenta Munekage, Satoshi Abe

Forming (F)

F1- Determination of friction law in metal forming under oil-lubricated condition

Zhigang Wang, Wenzhong Dong, Kozo Osakada (1)

F2- Friction coefficients in cold forging: a global perspective

Peter Groche (1), Philipp Kramer, Niels Bay (1), Peter Christiansen, Laurent Dubar, Kunio Hayakawa, Chengliang Hu, Kazuhiko Kitamura, Philippe Moreau

F3- Innovative measurement technique to determine equibiaxial flow curves of sheet metals using a modified Nakajima test

Matthias Eder, Christian Gaber, Winfried Nester, Hartmut Hoffmann (1), Wolfram Volk (2)

F4- New method for stress determination based on digital image correlation data

Alexander Brosius, Niklas Küsters, Matthias Lenzen / Manfred Geiger (1)

F5- Mechanisms for controlling springback and strength in heat-assisted sheet forming

Christian Löbbe, A. Erman Tekkaya (1)

F6- Influence of ultrasonic vibration on the shear formability of metallic materials

Markus Michalski, Michael Lechner, Micha Gruber, Marion Merklein (1)

F7 - Investigation on formability enhancement of 5A06 aluminium sheet by impact hydroforming

Yan Ma, Yong Xu, Shi-Hong Zhang, Dorel Banabic (1), Ali A. El-Aty, Da-Yong Chen, Ming Cheng, Hong-Wu Song, Arturu I. Pokrovsky, Guo-Qing Chen

F8- Semi-analytical modelling with numerical and experimental validation of electromagnetic forming using a uniform pressure actuator

Brad Lee Kinsey (2), Shunyi Zhang, Yannis P. Korkolis

F9- Electroplastic effect on AA1050 aluminium alloy formability

Andrea Ghiotti (2), Stefania Bruschi (1), Enrico Simonetto, Claudio Gennari, Irene Calliari, Paolo F. Bariani (1)

F10- Multi-station molding machine for attaining high productivity in small-lot production

Chikage Kato, Naoki Hiraiwa, Tsuyoshi Arai, Jun Yanagimoto (1)

F11 - Effectiveness of electrically assisted solid-state pressure joining using an additive manufactured porous interlayer

Sung-Tae Hong, Yong-Fang Li, Ju-Won Park, Heung Nam Han / Soo Ik Oh (1)

F12 - A new joining by forming process to produce lap joints in metal sheets

Joao P. Pragana, Carlos M. Silva, Ivo M. Bragança, Luis M. Alves, Paulo A.F. Martins (2)

F13 - An extrusion method of tube with spiral inner fins by utilizing generation of spiral outer fins/grooves

Takashi Kuboki (2), Michiaki Ishikawa, Shohei Kajikawa, Makoto Murata

F14 - Large reduction die-less mandrel drawing of magnesium alloy micro-tubes

Tsuyoshi Furushima, Ken-ichi Manabe / Manabu Kiuchi (1)

F15 - Improving the thickness accuracy of cold rolled narrow strip by piezoelectric roll gap control at high rolling speed

Sven Stockert, Matthias Wehr, Johannes Lohmar, Gerhard Hirt (1), Dirk Abel

F16 - Necking Condition of Layers in Clad Sheets during Rolling

Hiroshi Utsunomiya (2), Soichiro Maeda, Tetsuyuki Imai, Ryo Matsumoto

Abrasive Process (G)

G1- Thermal Modeling and Optimization of Interrupted Grinding

Changsheng Guo (2), Yan Chen

G2- Stochastic modelling of grain wear in geometric physically-based grinding simulations

Petra Wiederkehr, Tobias Siebrecht, Nils Potthoff / Dirk Biermann (1)

G3- Study of the effects of laser micro structuring on grinding of silicon nitride ceramics

Bahman Azarhoushang, Babak Soltani, Amir Daneshi / Goverdham D. Lahoti (1)

G4- Surface layer modification charts for gear grinding

Stepan Jermolajev, Ekkard Brinksmeier (1), Carsten Heinzl (2)

G5- Increased productivity in centerless grinding using inertial active dampers

David Barrenetxea (2), Iker Mancisidor, Xavier Beudaert (3), Jokin Munoa (2)

G6- Development of a patterning system for vitrified CBN wheels based on modal analysis

Eraldo Jannone da Silva (2), Gustavo P. Marcos, Giuliana S. Venter, Alex C. Bottene, Joao F. Oliveira (1), Caio A. Rodrigues

G7- Truing of diamond wheels - geometry, kinematics and removal mechanisms

Radovan Drazumeric, Jeffrey Badger (3), Uta Klement, Peter Krajnik (2)

G8- Nanometer-Scale Characteristics of Polycrystalline YAG Ceramic Polishing

Daniel Ross, Hitomi Yamaguchi (2)

G9- Damage-free highly efficient polishing of single-crystal diamond wafer by plasma-assisted polishing

Kazuya Yamamura (2), Ken Emori, Rongyan Sun, Yuji Ohkubo, Katsuyoshi Endo, Hideaki Yamada, Akiyoshi Chayahara, Yoshiaki Mokuno

G10- Curvature-adaptive multi-jet polishing of freeform surfaces

Benny C.F. Cheung (2), Chunjin Wang, Lai Ting Ho, Jiangbo Chen

G11 - Process mechanism in ultrasonic cavitation assisted fluid jet polishing

Anthony Tadeus Beaucamp (2), Tomoya Katsuura, Kie Takata

Machines (M)

M1 -Virtual compensation of deflection errors in ball end milling of flexible blades

Yusuf Altintas (1), Oguzhan Tuysuz, Mohsen Habibi, Zhoulong Li

M2- Adaptive preloading for rack-and-pinion drive systems

Alexander Wilhelm Verl (2), Tim Engelberth

M3- Ultimate capability of variable pitch milling cutters

Gabor Stepan (2), David Hajdu, Alex Iglesias, Denes Takacs, Zoltan Dombovari

M4- Spline Interpolation with Optimal Frequency Spectrum for Vibration Avoidance

Burak Sencer, Alper Dumanli, Yuki Yamada / M.A. Elbestawi (1)

M5- General contact force control algorithm in double-sided incremental forming

Huaqing Ren, Fuhua Li, Newell H. Moser, Dohyun Leem, Tiemin Li, Kornel F. Ehmann, Jian Cao (1)

M6- Adaptive Inverse Control of a Galvanometer Scanner Considering the Structural Dynamic Behavior

Michael F. Zaeh (2), Sebastian J. Pieczona

M7- A novel cascade control principle for feed drive of machine tools

Zheng Sun, Günter Pritschow (1), Peter Zahn, Armin Lechler

M8- Measurement and analysis of friction fluctuations in linear guideways

Tetsuya Miura, Atsushi Matsubara (2), Iwao Yamaji, Kaoru Hoshide

M9- Suppressing vibration modes of spindle-holder-tool assembly through FRF modification for enhanced chatter stability

Yaser Mohammadi, Milad Azvar, Erhan Budak (1)

M10- Proposal of 'accelerative cutting' for suppression of regenerative chatter

Takehiro Hayasaka, Soohyun Nam, Hongjin Jung, Eiji Shamoto (1), Katsuhisa Saito

M11- An active non-contact journal bearing with bi-directional driving capability utilizing coupled resonant mode

Ping Guo, Han Gao / Ajay P. Malshe (1)

M12 -Modelling of ball screw drives rolling element contact characteristics

Christian Brecher (1), Bastian Esser, Jens Falker, Florian Kneer, Marcel Fey

M13- Design of a CFRP-elastomer composite with high stiffness and damping capability

Toru Kizaki, Tatsuya Fujii, Masatoshi Iwama, Masaru Shiraiishi, Naohiko Sugita (2), Sung-Hoon Ahn (2)

M14- Influence of spindle condition on the dynamic behaviour

Mathieu Ritou, Clement Rabreau, Sebastien Le Loch, Benoit Furet, Didier Dumur (1)

M15- Feeling machines for online detection and compensation of tool deflection in milling

Berend Denkena (1), Haythem Boujnah

M16- Robotic assisted milling for increased productivity

Erdem Ozturk (2), Asier Barrios, Chao Sun, Saeed Rajabi, Jokin Munoa (2)

Production Systems and Organizations (O)

O1- Order allocation and sequencing with variable degree of uncertainty in aircraft manufacturing

Marcello Urgo, Jens Buergin, Tullio Tolio (1), Gisela Lanza (2)

O2- Real-time teaming of multiple reconfigurable manufacturing systems

Xingyu Li, Alparslan Emrah Bayrak, Bogdan I.I. Epureanu, Yoram Koren (1)

O3- Towards joint optimization of product design, process planning and production planning in multi-product assembly

Daisuke Tsutsumi (3), David Gyulai, Andras Kovacs, Bence Tipary, Yumiko Ueno (3), Youichi Nonaka (3), Laszlo Monostori (1)

O4- Interdisciplinary multi-criteria optimization using hybrid simulation to pursue energy-efficiency through production planning

Wilfried Sihn (1), Thomas Sobottka, Bernhard Heinzl, Felix Kamhuber

O5- Integrated simulation-based facility layout and complex production line design under uncertainty

Nikolaos Papakostas (2), Joseph O' Connor Moneley, Vincent Hargaden

O6- Adaptive automation and human factors in manufacturing: an experimental assessment for a cognitive approach

Doriana Marilena D'Addona (2), Fabrizio Bracco, Andrea Bettoni, Nariaki Nishino (2), Emanuele Carpanzano (1), Alessandro Bruzzone (1)

O7- Learnstruments: learning-conducive artefacts to foster learning productivity in production engineering

Jan P. Menn, Bernd Muschard, Bastian C. Schumacher, Felix Sieckmann, Holger Kohl, Guenther Seliger (1)

O8- Mixed-initiative assembly planning combining geometric reasoning and constrained optimization

Csaba Kardos, Jozsef Vancza (1)

O9- A KBE CAPP Framework for Qualified Additive Manufacturing

Yicha Zhang, Alain Paul Bernard (1)

O10- Cost-oriented Planning of Equipment for Selective Laser Melting (SLM) in Production Lines

Robin Kopf, Jonas Gottwald, Alexander Jacob, Milan Brandt, Gisela Lanza (2)

O11- Process-independent workstation layout for lean automation

Kenta Shigematsu, Yasuhiko Yamazaki (1), Shigeya Kato, Fumio Kojima, Shozo Takata (1)

O12- A geometrical model for managing Surface Productivity of U-Shaped Assembly Lines

Francisco Gil Vilda, Jose Antonio Yague-Fabra (2), Albert Sune Torrents, Juan M. Jauregui Becker, Wessel W. Wits (2)

O13- Machine learning approach based on fractal analysis for optimal tool life exploitation in CFRP composite drilling for aeronautical assembly

Alessandra Caggiano, Xavier Rimpault, Roberto Teti (1), Marek Balazinski (1), Jean-François Chatelain, Luigi Nele

O14- A Standards-Based Approach for Linking As-Planned to As-Fabricated Product Data

Moneer Helu (3), Alex Joseph, Thomas Hedberg / Robert G. Wilhelm (1)

O15- A multi-sensor approach for failure identification during production enabled by parallel data monitoring

Matthias Putz (2), Thomas Wiener, Alexander Pierer, Michael Hoffmann

O16- Planar random graph representations of spatiotemporal surface morphology: Application to finishing of 3-D printed components

Satish T. Bukkapatnam, Ashif S. Iquebal, Soundar Kumara (1)

O17- Impact of opportunistic maintenance on manufacturing system performance

Marcello Colledani (2), Maria Chiara Magnanini, Tullio Tolio (1)

O18- Smart, simulation-based resource sharing in federated production networks

Botond Kadar (2), Peter Egri, Gianfranco Pedone, Takafumi Chida

O19- Distributed control with rationally bounded agents in cyber-physical production systems

Rok Vrabec, Dominik Kozjek, Andreja Malus, Viktor Zaletelj, Peter Butala (1)

O20- Reinforcement learning for adaptive order dispatching in the semiconductor industry

Nicole Stricker, Andreas Kuhnle, Roland Sturm, Simon Friess / Hartmut Weule (1)

O21- Data-driven production control for complex and dynamic manufacturing systems

Enzo Morosini Frazzon, Mirko Kück Michael Freitag / Berndt Scholz-Reiter (1)

Precision Engineering & Metrology (P)

P1- Segmentation-free geometrical verification of additively manufactured components by X-ray Computed Tomography

Giovanni Moroni (2), Stefano Petro

P2- Enhanced dimensional measurement by fast determination and compensation of geometrical misalignments of X-ray computed tomography instruments

Wim Dewulf (2), Massimiliano Ferrucci, Evelina Ametova, Petr Hermanek, Gabriel Probst, Bart Boeckmans, Tom Craeghs, Simone Carmignato (2)

P3- Model-based optimisation of CT imaging parameters for dimensional measurements on multimaterial workpieces

Robert Schmitt (2), Andrea Buratti, Natalia Grozmani, Christoph Voigtmann, Martin Peterek

P4- Redundancy-enabled stabilisation of linear encoder performance: the biSLIDER

Alessandro Balsamo (1), Claudio Francese, Renato Ottone, Aline Piccato

P5- A stitching linear-scan method for roundness measurement of small cylinders

Yuanliu Chen, Yuki Machida, Yuki Shimizu, Hiraku Matsukuma, Wei Gao (1)

P6- Hierarchical-information-based characterization of multiscale structured surfaces

Benny Chi Fai Cheung (2), Mingyu Liu, Richard Leach (2), Xiaobing Feng, Chenyang Zhao

P7- High performance ultra-precision turning of large-aspect-ratio rectangular freeform optics

Xiaodong Zhang (2), Zexiao Li, Guoxiong Zhang (1)

P8- Modelling and Compensation of Dominant Thermally Induced Geometric Errors Using Rotary Axes' Power Consumption

Elie Bitar-Nehme, Rene Mayer (2)

P9- An adaptive self-learning compensation approach for thermal errors on 5-axis machine tools handling an arbitrary set of sample rates

Josef Mayr (2), Philip Blaser, Adrian Ryser, Pablo Hernandez-Becerro

P10- Integrated multilateration for machine tool automatic calibration

Unai Mutilba, Jose Antonio Yague-Fabra (2), Eneko Gomez-Acedo, Gorka Kortaberria, Aitor Olarra

P11- Error mapping of rotary tables in 4-axis measuring devices using a ball plate artifact

Qichang Wang, Jimmie Miller, Axel von Freyberg, Norbert Steffens, Andreas Fischer, Gert Goch (1)

Surfaces (S)

S1- Rapid surface nitriding of titanium alloy by a nanosecond fiber laser under atmospheric conditions

Kazutoshi Katahira (2), Yusuke Tanida, Shogo Takesue, Jun Komotori

S2- Influence of skin-layer microstructure in ultrafast laser surface treatment

Luca Romoli (2), Gianmarco Lazzini, Laura Gemini, Francesco Fuso

S3- Fabrication of un-coated transparent superhydrophobic sapphire surface using laser surface ablation and heat treatment

Chi-Vinh Ngo, Doo-Man Chun (2)

S4 - Effect of different laser-induced periodic surface structures on polymer slip in PET injection moulding

Marco Sorgato, Davide Masato, Giovanni Lucchetta (2), Leonardo Orazi (2)

S5- Machining-induced surface transformations of magnesium alloys to enhance corrosion resistance in human-like environment

Stefania Bruschi (1), Rachele Bertolini, Andrea Ghiotti (2), Enrico Savio (1), Wei Guo, Rajiv Shrivastava (1)

S6- Influence of Complementary Machining on fatigue strength of AISI 4140

Michael Gerstenmeyer, Frederik Zanger, Volker Schulze (2)

S7- Novel magneto-rheological finishing process of KDP crystal by controlling fluid-crystal temperature difference to restrain deliquescence

Yuehong Yin (2), Yifan Zhang, Yifan Dai, Qi Xiao, Guipeng Tie

S8- Joining strength dependence on molding conditions and surface textures in blast-assisted metal-polymer direct joining

Yusuke Kajihara, Yuta Tamura, Fuminobu Kimura, Gota Suzuki, Naotake Nakura, Eiji Yamaguchi / Shoichi Shimada (1)

S9- Anchoring and chemical-bonding effects of anodic alumina microstructure on adhesion strength

Keisuke Nagato, Takumu Yamaguchi, Masayuki Nakao (1)

S10- Fusion of photogrammetry and coherence scanning interferometry data for all-optical coordinate measurement

Richard Leach (2), Danny Sims-Waterhouse, Fabrizio Medeossi, Enrico Savio (1), Simone Carmignato (2), Rong Su