

LiM 2019 Advance Program, Sunday, 23.6.2019

12:00 - 18:00	Registration at the LiM-counter in the ICM
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LiM 2019 Advance Program, Monday, 24.6.2019

07:30	Registration at the LiM-counter in the ICM
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ICM Ground Floor/1st Floor, Room 1

WoP Opening and Plenary Session

09:00 - 11:00	WoP-Opening Ceremony and Plenary Session	<i>World of Photonics Congress</i>
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Coffee break

ICM 1st Floor, Room 13b

WLT ceremony, Chair U. Reisgen & M. Schmidt

11:15 - 11:25	Welcome to LiM	<i>Uwe Reisgen LiM General Chair</i>
11:25 - 11:35	WLT Award Ceremony	<i>Michael Schmidt WLT President</i>
11:35 - 11:55	Prize Winning Topic Presentation	<i>Prize Winner WLT</i>
11:55 - 12:30	Laudation Prof. Poprawe	<i>Andreas Tünnermann Fraunhofer Institute for Applied Optics and Precision Engineering IOF</i>
12:30 - 13:15	Digital Photonic Production along the Lines of Industry 4.0	<i>Reinhart Poprawe Fraunhofer Institute for Laser Technology ILT</i>

Lunch

LIM 2019 Advance Program, Monday, 24.06.2019		LIM 2019 Advance Program, Monday, 24.06.2019		LIM 2019 Advance Program, Monday, 24.06.2019	
ICM Room 2, Ground Floor		ICM Room 3, Ground Floor		ICM Room 22B, 2nd Floor	
<i>Brazing (Mo_A2_1), L. Overmeyer</i>		<i>Ablation, Drilling, and Micro-Cutting (Mo_A31_1), M. Schmidt</i>		<i>System Technology and Process Control - Macro (Mo_A32_1), C. Stadter</i>	
14:30 - 14:45	Multi-spot modules to improve joining processes through tailor-made spot geometries (Invited) Axel Luft Laserline	Hot Electron Plasma Temperatures and Soft X-Ray Emission During Laser Processing with Ultrafast Lasers (Invited)	Rudolf Weber Giedl-Wagner Roswitha, Förster Daniel, Graf Thomas, Pauli Anton Universität Stuttgart	Low-coherence interferometry in laser processing: a sensor approach setting new standards in industrial applications (Invited)	Markus Kogel-Hollacher Precitec Optronik GmbH
14:45 - 15:00					
15:00 - 15:15	Effects of titanium on grain boundary strength in the molybdenum laser weld bead zone and formation and strengthening mechanisms of parasitic brazing layers Lin-Jie Zhang Liang-Liang Zhang, Jian Long, Jie Ning, Jian-Xun Zhang, Suck-Joo Na Xi'an Jiaotong University	Ultra-short pulse laser drilling: Requirements, constraints and strategies for upscaling.	David Brinkmeier Volker Onuseit, Thomas Graf Institut für Strahlwerkzeuge	Monitoring of laser welding/AM processes combining high speed X-ray imaging, acoustic sensors and artificial intelligence	Kilian Wasmer Tri Le-Quang, Bastian Meylan, Margie O. Olbinado, Alexander Rack, Sergey A. Shevchik Empa - Swiss Federal Laboratories for Materials Science and Technology
15:15 - 15:30	Keyhole brazing with two-dimensional laser irradiation patterns Peer Woizeschke Insa Henze BIAS - Bremer Institut für angewandte Strahltechnik GmbH	Deep drilling of metals with ultra-short laser pulses	Daniel Johannes Förster Christian Freitag, Rudolf Weber, Thomas Graf LightPulse Laser Precision	Adaptive technique for signals in the monitoring of laser welding	Giuseppe D'Angelo Gianmarco Genchi, Giorgio Pasquettaz, Tommaso Giunti Centro Ricerche Fiat
15:30 - 15:45	Laser brazing of hot-dip galvanized steel using multifocal rotational optics John Frederik Josef Buckstegge Florian Albert, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH	Helical drilling of high-aspect-ratio micro holes in stainless steel using ultrashort laser pulses	Chao He Malte Weber, Arnold Gillner RWTH Aachen University, Chair for Laser technology LLT,	Laser integrated process monitoring	Steffen Belke Marcus Bode, Peter Kallage, Wolfram Rath, Simon Aleryd, Fredrik Johansson Coherent Rofin
15:45 - 16:00	Laser brazing of zinc-aluminium-magnesium coated steel – influence of the joint geometry Steffen Wachsmuth Sarah Nothdurft, Wilfried Reimann, Bastian Tigges, Ludger Overmeyer Volkswagen Aktiengesellschaft	High-speed manufacturing of HLFC structures by laser micro drilling	Andreas Stephen Roberto Ocana, Joseba Esmoris, Christian Werner, Carlos Soriano, Frank Vollertsen, Rafael Sanchez BIAS GmbH	Holistic Sensor Concept for Process Control and Quality Assurance in Laser Beam Welding Based on Optical Coherence Tomography	Christian Stadter Maximilian Schmoeller, Markus Kogel-Hollacher, Ulrich Munzert, Michael Friedrich Zaeh Technische Universität München
Coffee break		Coffee break		Coffee break	
<i>Welding Cu + Al (Mo_A2_2), T. Graf</i>		<i>Ablation, Drilling, and Micro-Cutting (Mo_A31_2), M. Schmidt</i>		<i>System Technology and Process Control - Macro (Mo_A32_2), T. Seefeld</i>	
16:30 - 16:45	Laser Beam Vacuum-Welded Cu-Al Mixed Joints Niklas Holtum Simon Olschok, Uwe Reisgen RWTH Aachen University, Welding and Joining Institute, Germany	Fiber-reinforced composite microdrilling with high power XeCl Sirius excimer laser for aerospace applications	Dmitrii Kliukin Andrei Anisimov, Roger Groves TU Delft	High dynamic vertical beam shaping by piezo driven modules for efficient and high quality laser beam cutting and welding	Axel Jahn Cindy Goppold, Paul Boettner, Claudia Reinlein, Daniel Stoffel, Mathias Bach Fraunhofer IWS
16:45 - 17:00	Numerical Analysis of the Local Solidification Conditions in Laser Beam Welding of Aluminum Alloys. Jonas Wagner Christian Hagenlocher, Florian Fetzer, Constantin Böhm, Rudolf Weber, Stefan Weihe, Thomas Graf Institut für Strahlwerkzeuge, Universität Stuttgart	Fabrication of cutting edge microgeometries on PCBN tools using pulsed laser ablation	Alexander Krüdel Berend Denkena, Bernd Breidenstein, Thilo Grove IFW Hannover	Increase of deposition rates in laser hot wire cladding (LHWC) by use of beam-oscillation for appropriate energy deposition and thermal closed loop control	Dieter Tyralla Thomas Seefeld Bremer Institut für angewandte Strahltechnik
17:00 - 17:15	Influence of the alloy-specific solidification path on the critical strain rate for the formation of hot cracks during laser beam welding of aluminum Daniel Weller Christian Hagenlocher, Rudolf Weber, Thomas Graf University of Stuttgart	Laser Cutting of PE Polymer Films with Adapted Fiber Laser Beam Sources	Maximilian Brosda Phong Nguyen, Alexander Olowinsky, Arnold Gillner Fraunhofer Institute for Laser Technology ILT	Design, manufacturing and test of a highly dynamic piezo-driven metal mirror for laser material processing	Paul Böttner Claudia Reinlein, Axel Jahn, Patrick Herwig, Cindy Goppold, Daniel Stoffel, Mathias Bach Fraunhofer IOF
17:15 - 17:30	Laser welding –control of microstructure with wobble technique Quang-Tri Le Bastian Meylan, Kilian Wasmer Swiss Federal Laboratories for Material Science and Technology	Ultra-short pulse laser machining of ultra-hard cutting tool materials	Jadok Weikler Melik Hajri, Paul Börner, Konrad Wegener IWF ETH Zürich, Inspire AG	Controlling laser processing via optical coherence topography	Wilrid Dubitzky Friedhelm Dorsch, Jan-Patrick Hermani, Andrew Hromadka, Tim Hesse, Thomas Notheis, Johannes Seebach, Martin Starnbke TRUMPF Laser- und Systemtechnik GmbH
17:30 - 17:45	Application of different pulsed laser sources to dissimilar welding of Cu and Al alloys Alessandro Ascari Alessandro Fortunato, Erica Liverani, Adrian Lutey University of Bologna	Cutting Nitinol sheets using high energy pulses from an industrial femtosecond laser for medical device manufacturing	Chandra S. R. NATHALA Dheerendra Yadav, Victor Matylytsky, Klaus Hartinger Spectra-Physics	Correlation between camera image and photodiode signal during laser welding	Petr Horník Libor Mrňa, Hana Šebestová Institute of Scientific Instruments of the CAS, v. v. i.
17:45 - 18:00	Influence of laser wavelength on melt pool behavior in welding of thin pure copper plate with blue diode and fiber lasers Kento Morimoto Masahiro Tsukamoto, Shin-ichiro Masuno, Kazuyuki Azumi, Yoshihiko Hayashi, Nobuyuki Abe Graduate School of Engineering, Osaka University	Seal slot machining of Hard Materials by Water Jet guided Laser for aerospace applications.	Jeremie Diboine Coraline Lapre, Jehan Moingeon, Minh-Hoang Nguyen, Armédeé Zryd, Bernold Richerzhagen Synova S.A.	Waveguide Polarisation and Mode Selection Technique for CO2 laser	Gavin Alan James Markille Jason Lee, Peter Dyer Rofin-Sinar UK Ltd

LIM 2019 Advance Program, Tuesday, 25.06.2019		LIM 2019 Advance Program, Tuesday, 25.06.2019		LIM 2019 Advance Program, Tuesday, 25.06.2019	
ICM Room 2, Ground Floor		ICM Room 3, Ground Floor		ICM Room 22B, 2nd Floor	
<i>Welding of Thick Plates and Hybrid Welding 1 (Tu_A2_1), T. Seefeld</i>		<i>Ablation, Drilling, and Micro-Cutting (Tu_A31_1), M. Schmidt</i>		<i>System Technology and Process Control - Micro (Tu_A32_1), M. Schmidt</i>	
08:30 - 08:45	Development of Laser welding for the ITER Toroidal Field Coil <i>Shuho Tsubota Takehisa Okuda MITSUBISHI HEAVY INDUSTRIES, LTD.</i>	Excitation Wavelength Dependence of Transient Light Absorption Phenomenon in The Stealth Dicing Process <i>Yasunaga Nara Hamamatsu Photonics K.K.</i>		The comparison of LWIR and SWIR cameras for laser transmission welding inspection <i>Martin Kučera Aleš Franc, Jiří Martan, Jiří Tesař, Jiří Skála, Petra Honnerová, Milan Honner University of West Bohemia</i>	
08:45 - 09:00	Hybrid laser arc welding of thick plates X8Ni9 for LNG tank construction <i>Sergej Gook Abdel-Manem El-Batahy, Andrey Gumenyuk, Michael Rethmeier Fraunhofer IPK</i>	GHz femtosecond processing <i>Eric AUDOUARD Guillaume BONAMIS, Konstantin MISHCHIK, Eric MOTTAY, John LOPEZ, Inka MANEK-HONNINGER AMPLITUDE</i>		In-line, real-time laser process monitoring using low-coherence interferometry <i>Christoph A. Riedel Philippe Ackermann, Rouwen Kunze, Robert Schmitt Fraunhofer Institute for Production Technology</i>	
09:00 - 09:15	Influence of alloying elements on laser in vacuum (LaVa) welding of nickel-based alloys <i>Thomas Krichel Uwe Reisgen, Simon Olschok RWTH Aachen University, Welding and Joining Institute, Germany</i>	Interest of singlemode fibers in photonic jet sub-micron laser processing <i>Sylvain Lecler Robin Pierron, Grégoire Chabrol, Djamil Bouaziz, Jean-Paul Yehouessi, Géraud Bouwmans University of Strasbourg</i>		Aberration correction with a piezoelectric deformable mirror integrated into a closed loop setup for laser material processing <i>Matthias Lautenschläger Marco Smarra, Klaus Dickmann Laser Center (LFM), Muenster University of Applied Sciences</i>	
09:15 - 09:30	Fatigue behavior of laser and hybrid laser-TIG welds of high-strength low-alloy steels <i>Hana Šebestová Petr Horník, Libor Mrňa, Pavel Hutař Institute of Scientific Instruments of the Czech Academy of Sciences</i>	Ablation suppression of titanium optimizing the delay time by two-color femtosecond double-pulse laser <i>Naoki Shinohara Keisuke Takenaka, Masaki Hashida, Shunsuke Inoue, Satoru Asai, Shuji Sakabe, Masahiro Tsukamoto Osaka University</i>		Monitoring micro-drilling of large Ti plates using single laser pulses for HLF applications <i>Roberto Ocaña Carlos Sariano, Joseba Esmoris, Rafael Sánchez IK4-Tekniker Research Alliance</i>	
09:30 - 09:45	Laser-based blank-rim melting for robust laser welding of hidden T-joints <i>Christoph Mittelstädt Thomas Seefeld, Frank Vollertsen BIAS</i>	High Speed Laser Piercing of CFRP using 1W nanosecond UV laser pulses <i>Hiroharu Tamaru Atsushi Kosuge, Takashi Hira, Masahiro Moriyama, Shuntaro Tani, Isao Ito, Zhiqiang Zhao, Yohei Kobayashi, Norikatsu Mio, Makoto Kuwata-Gonokami, Junji Yamoto The University of Tokyo</i>		Laser Lapping of Piezoelectric Ceramics using Ultrashort Pulse Laser and Closed Loop Control Algorithm <i>Marco Smarra Matthias Lautenschläger, Sven Verpoort, Klaus Dickmann Laser Center (LFM), Muenster University of Applied Sciences</i>	
09:45 - 10:00	Laserbeam-Submerged Arc Hybrid Welding – a welding technique for thick metal sheets <i>Oliver Engels Simon Olschok, Uwe Reisgen RWTH Aachen University, Welding and Joining Institute, Germany</i>	CAM Solution for quasi-tangential laser ablation of complex 3D workpieces <i>Norbert Ackerl Johannes Gysel, Maximilian Warhanek, Konrad Wegener ETH Zurich</i>		Laser doping for 4H-SiC power-device fabrication with laser pulse-duration controller <i>Toshifumi Kikuchi Kaname Imokawa, Akihiro Ikeda, Daisuke Nakamura, Tanemasa Asano, Hiroshi Ikenoue TAMARI INDUSTRY CO.,LTD.</i>	
Coffee break		Coffee break		Coffee break	
<i>Welding of Thick Plates and Hybrid Welding 2 (Tu_A2_2), U. Reisgen</i>		<i>Ablation, Drilling, and Micro-Cutting (Tu_A31_2), M. Schmidt</i>		<i>System Technology and Process Control - Micro (Tu_A32_2), M. Schmidt</i>	
10:30 - 10:45	Single-pass hybrid laser arc welding of thick materials using electromagnetic weld pool support <i>Ömer Üstündağ Andrey Gumenyuk, Michael Rethmeier Fraunhofer IPK</i>	Depth and quality limit for percussion-drilled microholes with depth > 1 mm using ultrashort pulsed laser radiation <i>Anne Feuer Daniel J. Förster, Rudolf Weber, Thomas Graf Universität Stuttgart</i>		Hollow-core anti-resonant fibres for high-power laser beam delivery: impact of coupling misalignment <i>Bartłomiej J. Siwicki Richard M. Carter, Jonathan D. Shephard, Fei Yu, Duncan P. Hand Heriot-Wat University</i>	
10:45 - 11:00	Influence of partial penetration laser hybrid welding parameters on the solidification cracking for thick-walled structures <i>Nasim Bakir Jacques Biltgen, Andrey Gumenyuk, Michael Rethmeier Bundesanstalt für Materialforschung und -prüfung</i>	High throughput ultrafast laser processing with femtosecond bursts <i>Amelie LETAN Eric AUDOUARD, Konstantin MISHCHIK, Clemens HONNINGER, Eric MOTTAY AMPLITUDE</i>		Reducing process variation within powder bed fusion by a closed-loop control in real-time <i>Volker Renken Daniel Gleichauf, Felix Pastors, Lutz Lübbert, Axel von Freyberg, Andreas Fischer Universität Bremen</i>	
11:00 - 11:15	Lightweight Construction for Shipbuilding - Welding of Thick Dissimilar Joints of Steel and Aluminum Alloys with High Strength (Invited) <i>Stefan Kaieler Rabi Lahdo, Oliver Seffer, Sarah Nathdurft, Jörg Hermsdorf, Ludger Overmeyer Laser Zentrum Hannover e.V.</i>	Flex-PCB and microelectronics materials processing with high power UV nanosecond pulsed lasers <i>James M. Bovatsek Terence R. Hollister MKS Spectra-Physics Lasers</i>		Multi beams fs processing with high power laser <i>Eric AUDOUARD Martin DELAIGUE, Axel CHAMBINAUD, Konstantin MISHCHIK, Clemens HÖNNINGER, Eric MOTTAY, Yoan DIMAIO, Sébastien LANDO, Benjamin DUSSEER AMPLITUDE</i>	
11:15 - 11:30	Potential of Laser Beam Welding under Vacuum <i>Stefan Jakobs RWTH Aachen University, Welding and Joining Institute, Germany</i>	Modeling and experimental validation of single-pulse and multi-pulse picosecond laser beam ablation of cemented tungsten carbide <i>Juan Pablo Calderán Urbina Claus Emmelmann Technische Universität Hamburg</i>		OCT-controlled generation of complex geometries on stainless steel using ultra-short laser pulses <i>Daniel Holder Steffen Boley, Matthias Buser, Christoph Irion, Rudolf Weber, Thomas Graf University of Stuttgart</i>	
11:30 - 11:45	Study of gap and misalignment tolerances in laser-cold wire welding of thick aluminum plate <i>Fatemeh mirakhorli Francois Nadeau, Gabriel Caron Guillemette, Rachid Fakir nrc</i>	n- and p-type laser doping of Si thin film transistors coated with chemical solution for CMOS circuit fabrication <i>Kaname Imokawa Nozomu Tanaka, Akira Suwa, Daisuke Nakamura, Taizoh Sadoh, Tetsuya Goto, Hiroshi Ikenoue Kyushu University</i>		Process controller for scanning laser surface machining on cylinder surfaces <i>Jan Düsing Jürgen Koch, Oliver Suttman, Stefan Kaieler, Ludger Overmeyer Laser Zentrum Hannover e.V.</i>	
11:45 - 12:00	Utilization of electric arc for preheating of special steels during laser welding <i>Libor Mrňa Hana Sebestová, Petr Horník, Jan Pavelka Institute of Scientific Instruments</i>	Ultrafast Laser Ablation at 1035 nm, 517 nm and 345 nm as a Function of Pulse Duration and Fluence <i>Norman Hodgson Sebastian Heming, Albrecht Steinkopff, Hatim Haloui, Tony S. Lee Coherent, Inc.</i>		Productivity optimization of scanner based laser ablation processes with adaptive scan paths <i>Matthias Buser Daniel Holder, Steffen Boley, Volker Onuseit, Thomas Graf Institut für Strahlwerkzeuge</i>	
Lunch		Lunch		Lunch	

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ICM Room 2, Ground Floor		ICM Room 3, Ground Floor		ICM Room 22B, 2nd Floor	
<i>Welding (Spatters, Titanium) (Tu_A2_3), J.-P. Bergmann</i>		<i>Ablation, Drilling, and Micro-Cutting (Tu_A31_3), M. Schmidt</i>		<i>System Technology and Process Control - Micro, Laser Safety (Tu_A32_3), M. Schmidt</i>	
14:00 - 14:15	Liquid zone and spatter behavior during continuous laser welding of titanium <i>Iryna Tomashchuk Anthony Chabat, Pierre Cottet, Mélanie Duband, Pierre Sallamand, Antoine Mannucci Université de Bourgogne-Franche Comté</i>	High speed UV femtosecond machining <i>Clemens HÖNNINGER Eric AUDOUARD, Martin DELAIGUE, Eric MOTTAY, David BRUNEEL, Anne HENROTTIN, Jose A RAMOS AMPLITUDE</i>		Selective Multibeam micro processing of metal with a 1x8 beam array <i>Alexander Meyer Johannes Finger, Oliver Nottradt, Michael Jüngst Fraunhofer Institute for Laser Technology ILT</i>	
14:15 - 14:30	Pure vanadium insert for efficient joining of Ti6Al4V to 316L stainless steel with continuous Yb:YAG laser <i>Antoine Mannucci Iryna Tomashchuk, Alexandre Mathieu, Rodolphe Bolot, Eugen Cicola, Sébastien Lafaye, Cyril Roudeix Université de Bourgogne-Franche Comté</i>	Investigations on material removal mechanisms of steel by means of laser processing for balancing processes <i>Peter Hellwig Klaus Schrickler, Jean Pierre Bergmann Technische Universität Ilmenau</i>		A transmission type liquid crystal device for two-dimensional polarization encoding in high-power laser beam. <i>Keisuke Yoshiki Univ of Hyogo</i>	
14:30 - 14:45	Influence of superimposed intensity distributions on the welding process and the spatter behavior during laser welding of steel (30 min) <i>Michael Jarwitz Jannik Lind, Rudolf Weber, Thomas Graf IFSW, University of Stuttgart</i>	The micro via processing for semiconductor package by excimer lasers <i>Junichi Fujimoto Masakazu Kobayashi, Akira Suwa, Akira Mizutani, Yasufumi Kawasaki, Masaki Arakawa, Takashi Onosa, Hakaru Mizoguchi Gigaphoton Inc.</i>		Detection of heat accumulation in laser surface texturing by fast infrared detectors <i>Jiří Martan Denys Moskal, Lucie Prokešová, Milan Honner University of West Bohemia</i>	
14:45 - 15:00		UV ps laser processing of polymer materials for next-generation 5G and foldable consumer electronic devices <i>James M. Bovatsek Terence R. Hollister MKS Spectra-Physics Lasers</i>		Laser beam shaping and stabilization for singlemode laser material processing based on Multi-Plane Light Conversion <i>Clément Jacquard Olivier Pinel, Pu Jian, Jean-François Morizur, Guillaume Labroille Cailabs</i>	
15:00 - 15:15	Effect of gas flow on spatter formation in deep penetration welding at high welding speeds <i>Leander Schmidt Klaus Schrickler, Jean Pierre Bergmann, Steen Hickethier Technische Universität Ilmenau</i>	Water Jet Guided Nanosecond Laser Machining of Metal Matrix Composites <i>Sundar Marimuthu Justin Dunleavy, Bethan Smith The Manufacturing Technology Centre</i>		Laser Safety – an important and eternal, yet sometimes neglected task (Invited) <i>Michael F. Zäh Technische Universität München</i>	
15:15 - 15:30	Reduction of spatters and pores in laser welding of copper hairpins using two overlapping laser beams <i>Oliver Bockrocker TRUMPF Laser- und Systemtechnik GmbH</i>	Heat affected zone analysis of fiber laser cut medical devices and its dependencies regarding laser and design parameters <i>Christian Kneis ADMEDES GmbH</i>		Aging of laser protective filters concerning laser resistance <i>Rico Bühring Winfried Janßen, Uwe Urmonoit, Hans-Joachim Krauß blz - Bayerisches Laserzentrum GmbH</i>	
Coffee break		Coffee break		Coffee break	
<i>Precision from Melt (Tu_A2_4), S. Olschok</i>		<i>SLM-Metal (Tu_A31_4), M. Rethmeier</i>		<i>Surface Treatment and Cladding (Tu_A32_4), C. Brunner-Schwer</i>	
16:00 - 16:15	Precision Melt Engineering (Invited) <i>Arnold Gillner RWTH Aachen University, Chair for Laser Technology LLT</i>	Recent advances in 3-D metal printing with Lasers – Is it all about cooling rates? (Invited) <i>Patrik Hoffmann Empa</i>		Laser melt injection of hard particles with beam wobbling for wear protection of micro-injection molding tools <i>Anatoly Fedorov Kukk Hannes Freißle, Bohlen Annika, Vollertsen Frank BIAS - Bremer Institut für angewandte Strahltechnik GmbH</i>	
16:15 - 16:30	Modeling and Simulation of Laser Micro Welding <i>Christoph Schöler Markus Nießen, Marc Hummel, Arnold Gillner, Wolfgang Schulz RWTH Aachen University, Nonlinear Dynamics of Laser Manufacturing Processes NLD</i>			Laser-Plasma-Hybrid-Cladding: Possibilities in the combination of arc and laser for deposition welding <i>Christian Brunner-Schwer Benjamin Graf, Michael Rethmeier Fraunhofer-Institut für Produktionsanlagen und Konstruktionstechnik (IPK)</i>	
16:30 - 16:45	Simulation of the Temperature Profile on the Cutting Edge in Laser Fusion Cutting <i>Ulrich Halm Markus Niessen, Dennis Arntz, Reinhart Poprawe, Wolfgang Schulz RWTH Aachen University, Nonlinear Dynamics of Laser Processing NLD</i>	Optimization of mechanical properties and as-built quality of additive manufactured hypereutectic Al-Si alloys using ultra-short laser pulses <i>Tobias Ullsperger Gabor Matthäus, Lisa Kaden, Brian Seyfarth, Hannes Engelhardt, Dongmei Liu, Markus Rettenmayr, Stefan Nolte Friedrich-Schiller-Universität Jena</i>		Laser ablation for finishing of porous ceramics in 3D surfaces <i>Muhammed Kör Matthias Leichte, Raimund Förg, Stefan Menzel Technische Hochschule Deggendorf</i>	
16:45 - 17:00	Quantitative analysis of the temporal distance between melt waves on the cutting front apex during laser fusion cutting of stainless steel sheet metal with 1 micron wavelength <i>Dennis Arntz Dirk Petring, Frank Schneider, Stoyan Stoyanov, Ulrich Halm, Arnold Gillner RWTH Aachen University, Chair for Laser Technology LLT</i>	Metal powder cross-contaminations in multi-material laser-based powder bed fusion: Influence of CuCr1Zr particles in AlSi10Mg feedstock on part properties <i>Max Horn Georg Schlick, Max Lutter-Guenther, Christine Anstaett, Christian Seidel, Gunther Reinhart Fraunhofer IGCV</i>		Investigations of surface laser melting of tool steel <i>Bastian Meylan Ivan Calderan, Alexandre Masserey, Eric Boillat, Kilian Wasmer Empa</i>	
17:00 - 17:15	Evaluation of Offline Path Planning for Laser Metal Deposition on Freeform Surfaces <i>Marie-Noemi Bold Norbert Pirch, Stephan Ziegler, Johannes Henrich Schleifenbaum RWTH Aachen University, Chair for Digital Additive Production DAP</i>	Laser welding of AlSi10Mg alloys produced by selective laser melting <i>Li Cui Yaoying Chang, Hongxi Chen, Dingyong he Beijing University of Technology</i>		Cleaning surfaces from food residues with pulsed laser <i>Peter Cam Simon Hänni, Fabio Sivillica, Patrick Schwaller, Fabrizio Orlando, Joachim Schaelkopf Berne University of Applied Science</i>	
17:15 - 17:30	In-situ diagnostic in laser beam welds with digital image correlation – Reduction of residual stress and distortion in laser beam welds using low-transformation-temperature (LTT) filler materials <i>Fatma Akyel Simon Olschok, Uwe Reisgen RWTH Aachen University, Welding and Joining Institute, Germany</i>	Laser beam welding of Ti-6Al-4V hybrid-parts from additively manufactured elements and sheet metal <i>Florian Huber Vincent Mann, Florian Kaufmann, Michael Schmidt Institute of Photonic Technologies</i>		Laser Sintering of Antifriction Tribological Surface for Large-Dimensioned Marine Propeller Shafts <i>Nikolay Nosyrev Valeriy Levshakov, Natalia Steshenkova, Nikolay Afanasiev Shipbuilding & Shiprepair Technology Center, JSC</i>	
17:30 - 17:45	Simulation of Solidification Microstructures under Thermal Conditions of Laser Beam Welding <i>Markus Apel Oleg Stryzhyboroda, Bernd Böttger ACCESS e.V.</i>	Optimization of the weldability of laser additive manufactured aluminum by means of hydrogen minimization in the component and welding parameter optimization <i>Frank Beckmann Prof. Dr.-Ing. Claus Emmelmann Fraunhofer IAPT</i>		UV – surface treatment with 248 line beam system for large - scale production <i>Matthias Trenn Ralph Delmdahl, Arnold Gillner Fraunhofer Institute for Laser Technology ILT</i>	
19:00 - 23:00	LIM Get together	LIM Get together	LIM Get together	LIM Get together	LIM Get together
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ICM Room 2, Ground Floor		ICM Room 3, Ground Floor		ICM Room 22B, 2nd Floor	
<i>Welding (Capillary, Temperature Distribution) (We_A2_1), L. Tomcic</i>		<i>SLM-Metal (We_A31_1), T. Graf</i>		<i>Surface Treatment and Cladding, SLM Polymer (We_A32_1), S. Roth</i>	
08:30 - 08:45	Numerical investigations of the temperature distribution around the capillary and its effect on the stability of the capillary rear wall <i>Peter wolgang Berger University of Stuttgart</i>	Laser powder bed fusion of pure copper using ultrashort laser pulses <i>Lisa Kaden Gabor Matthäus, Tobias Ullsperger, Brian Seyfarth, Stefan Nolte Friedrich-Schiller-Universität Jena</i>		Laser beam absorption depending on the angle of incidence on grinded surface <i>Handika Sandra Dewi Joerg Volpp, Alexander F. H. Kaplan Luleå University of Technology</i>	
08:45 - 09:00	Mitigation of laser keyhole girth weld start/stop defects through application of different laser termination regimes <i>Wai Jun Lai Supriyo Ganguly, Wojciech Suder Cranfield University</i>	CFD simulations for additive manufacturing processes <i>Pareekshith Allu Flow Science Inc.</i>		Cleaning, Cutting and Welding of Construction Materials <i>Masayuki Fujita Toshihiro Sormekawa, Noriaki Miyanaaga, Ryosuke Kodama Institute for Laser Technology</i>	
09:00 - 09:15	Beam Shaping BrightLine Weld – Latest Application Results <i>Stefanie Feuchtenbeiner Tim Hesse, Nicolai Speker, Patrick Haug, Johannes Seebach TRUMPF Laser- und Systemtechnik GmbH</i>	Powder bed Surface evaluation with off-axis process monitoring in laser powder bed fusion <i>Tobias Kolb Reza Elahi, Michaela Faber, Jan Tremel, Michael Schmidt Friedrich-Alexander-University Erlangen-Nürnberg</i>		Optimized Temperature Distribution for Laser Hardening with Freeform Mirrors <i>Martin Schulz Thomas Bergs, Kristian Arntz, Jan Riepe, Stefan Gräfe Fraunhofer IPT</i>	
09:15 - 09:30	Influence of beam power density on weld geometry and metallurgical properties <i>Anna Unt Stefan Grünwald, Olga Klimova-Korsmik, Antti Salminen Lappeenranta-Lahti University of Technology</i>	Additive Manufacturing of CuSn10 Powder via Selective Laser Melting <i>Nicole Emminghaus Christian Hoff, Jörg Hermsdorf, Stefan Kaierle Laser Zentrum Hannover e. V.</i>		Increasing Productivity of Selective Laser Sintering with beam shaping <i>Steffen Boley Alexander Peter, Volkher Onuseit, Thomas Graf Institut für Strahlwerkzeuge</i>	
09:30 - 09:45	Laser welding of copper using superposed green and infrared laser radiation <i>Lazar Tomcic Michael K. Kick, Martin Haubold, Andreas Ganser, Michael F. Zaeh Institut für Werkzeugmaschinen und Betriebswissenschaften</i>	Additive Manufacturing of metal optic systems for space applications <i>Nils Heidler Enrico Hilpert, Johannes Hartung, Henrik von Lukowicz Fraunhofer IOF</i>		Process route adaption to generate multi-layered compounds using vibration-controlled powder nozzles in selective laser melting of polymers <i>Thomas Schuffenhauer Thomas Stichel, Sebastian-Paul Kopp, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH</i>	
09:45 - 10:00	New Opportunities For Copper Processing With Kilowatt Blue Laser Sources <i>Simon Britten Laserline GmbH</i>	Correlation of Spatter Formation and Process Parameters during Selective Laser Melting of AlSi10Mg <i>Artur Leis Lukas Voltin, Rudolf Weber, Thomas Graf Universität Stuttgart</i>		Three-dimensional direct laser writing of acrylated epoxidized soybean oil <i>Edvinas Skliutas Miglė Lebedevaitė, Jolita Ostrauskaitė, Mangirdas Malinauskas Vilnius University</i>	
Coffee break		Coffee break		Coffee break	
<i>Processing of Transparent Materials (We_A2_2), M. Schmidt</i>		<i>SLM-Metal (We_A31_2), T. Graf</i>		<i>Thin Plate Welding and Plastics (We_A32_2), D. Petring</i>	
10:30 - 10:45	Massive parallelization of laser beams with diffractive optical elements for high speed two-photon polymerization <i>Francisco J. Gantad Sara M. Vidal, Nerea Otero-Ramudo, Pablo M. Romero-Romero AIMEN</i>	Mass transfer by evaporation-induced gas flow at selective laser melting <i>A.V. Gusarov R.S. Khmyrov, R.R. Ableyeva Moscow State University of Technology "STANKIN"</i>		Dissimilar laser beam welding of a press hardened stainless martensitic and a cold worked stainless TWIP steel <i>Martin Dahmen Stefan Lindner, Gökhan Tümkaya, Dirk Petring Fraunhofer Insitute for Laser Technology ILT</i>	
10:45 - 11:00	Advanced spatial and temporal shaping for glass cutting application <i>Konstantin Mishchik Martin Delaigue, Clemens Hoenninger, Eric Mottay Amplitude Systemes</i>	Heat treatment of SLM-LMD hybrid components <i>Jan Düchting Eckart Uhlmann, Torsten Petrat, Benjamin Graf, Michael Rethmeier TU Berlin</i>		Laser welding of dissimilar steels: Maraging (18Ni) and 300 M <i>Milton Sérgio Fernandes de Lima Deivid Ferreira da Silva, Rafael Humberto Mota Siqueira, Antonio Jorge Abdalla Instituto de Estudos Avancados - IEAv/CTA</i>	
11:00 - 11:15	Creation of Smooth and Flat Surface in Micro-machining of Monocrystalline Diamond by Pulsed Laser <i>Yasuhiro Okamoto Takahiro Shimose, Atsuya Kajitani, Akira Okada Okayama University</i>	Safety during handling of metal powders in the course of additive manufacturing: Risk assessment along the entire process chain <i>Juergen Walter Tjarben Griemsmann, Michael Hustedt, Christian Hoff, Joerg Hermsdorf, Stefan Kaierle LZH e.V.</i>		Micro Laser Lap Welding of Thin SS304 Sheet <i>sushil patel akash aggrawal, arvind kumar, vijay kumar jain INDIAN INSTITUTE OF TECHNOLOGY KANPUR</i>	
11:15 - 11:30	Generation of internal 3D microfluidic architectures in polymers by fs laser processing <i>Gian-Luca Roth Cemal Esen, Ralf Hellmann University of applied sciences Aschaffenburg</i>	The impact of different binder systems in laser powder bed fusion of tungsten carbide composites <i>Tobias Schwaneckamp Gabriela Marginean, Martin Reuber University of Applied Sciences Cologne (RFH)</i>		Effects of weld parameters on fatigue strength of a pulsed laser welding Ni-base alloy thin sheet with filler wire <i>Guangyi MA Jingling YU, Bo CHENG, Dongjiang WU, Fangyong NIU dalian university of technology</i>	
11:30 - 11:45	Laser induced reverse transfer of functional micropatterns <i>James Stephen Macdonald Henry De Fossard, Ronan Daly University of Cambridge</i>	The use of a ns-pulsed, high repetition rate green laser for SLM of 99.9% pure Cu <i>Ali Gökhan Demir Matteo Colopi, Barbara Previtali Politecnico di Milano</i>		Applied machine learning for predicting the weld seam geometry based on the example of laser-assisted metal-plastic joining <i>Klaus Schrickler Marcus Glaser, Jean Pierre Bergmann Technische Universität Ilmenau</i>	
11:45 - 12:00	Ultrafast Laser Ablation of Transparent Ceramics: The Role of the Pulse Duration on the Ablation Mechanisms <i>Christian Kalupka Martin Schmalstieg Fraunhofer Institute for Laser Technology ILT</i>	Characterization of work hardening behaviour of additively manufactured stainless steel 316L (1.4404) using bulk metal forming at elevated temperature <i>Thomas Papke Marion Merklein Institute of Manufacturing Technology</i>		Laser Welding of Thermoplastics – Improving the Weld Strength of Short Glass Fiber Reinforced Thermoplastics <i>Andreas Schollmayer Gereon Bussmann, Matthias Ölscher, Marcus Scholl, Ulrich Russek Rheinische Fachhochschule Köln</i>	
Lunch		Lunch		Lunch	

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<i>Processing of Transparent Materials (We_A2_3), M. Schmidt</i>		<i>SLM-Metal (We_A31_3), M. Rethmeier</i>		<i>Micro-Joining (Welding and Brazing) (We_A32_3), M. Schmidt</i>	
14:00 - 14:15	Ultrafast laser manufacturing of glass microfluidic devices <i>Krystian L. Wlodarczyk Richard M. Carter, Omid Shahrokhi, Rumbidzai A.E. Nhunduru, Amir Jahanbakhsh, Duncan P. Hand, M. Mercedes Maroto-Valer Heriot-Watt University</i>	Comparison of cw- and pulsed- laser polishing on additive manufactured parts <i>Nena Blanke Frank Vollertsen, Hamza Messaoudi BIAS - Bremer Institut für angewandte Strahltechnik GmbH</i>		Improved efficiency of laser micromachining using high speed resonant focal scanning (Invited) <i>Craig Arnold Princeton University</i>	
14:15 - 14:30	Direct Fabrication of Micro Lens Arrays by CO ₂ -Lasers <i>Thomas Schmidt Daniel Conrad, Martin Kahle, Aliaksei Kobylinskiy ifw Jena - Günter-Köhler-Institut für Fügetechnik und Werkstoffprüfung GmbH</i>	Effects of hot isostatic pressing and solution annealing on the microstructure and porosity of tool steel 1.2709 processed by selective laser melting <i>André Edelmann Johannes Pantring, Ralf Hellmann Hochschule Aschaffenburg</i>			
14:30 - 14:45	Generation of high-power UV vector beams by ultrafast laser written polarization converter in silica glass <i>Yuhao Lei Masaaki Sakakura, Lei Wang, Yanhao Yu, Peter Kazansky University of Southampton</i>	Fabrication of three-dimensional connected W-Cu10Sn composite by selective laser melting <i>Dingyong He Zhenlu Zhou, Zhen Tan, Li Cui Beijing University of Technology</i>		500 Watt Fiber Coupled Blue Laser System Welding Results <i>Mark Steven Zediker Jean Philippe Feve, Matthew Silva So, Jean Michel Pelaprat, Mathew Finuf, Robert Fritz NUBURU Inc</i>	
14:45 - 15:00	Involume Modification and Surface Structuring with Ultrashort Laser Pulses: Energy Deposition of Burst Pulses <i>Martin Kratz Christian Kalupka, Franca auf der Heiden, Stefan Quach RWTH Aachen University</i>	Intelligent Scanning Trajectory Planning for Advanced Industrial Laser Processing <i>Simon Matthias Mark Lucas, Bhavesh Bhut, Sivam Seetharam Novanta Europe GmbH</i>		Hybrid joints of polymer and thin metal parts fabricated by laser technology: performance under realistic conditions <i>Eva Rodriguez-Vidal Carmen Sanz IK4-TEKNIKER</i>	
15:00 - 15:15	PDMS laser Thermal Processing for Fabrication of 3D micro structure <i>Mohammadreza Riahi Dehkordi Atefeh Ghaffari, Fatemeh Karimi K.N.Toosi University of Technology</i>	New concept for multi-material processing with SLM <i>Marcel Gerstgrasser Markus Maier, Jordan Borinelli, Konrad Wegener ETH Zürich</i>		Laser overlap joining from copper to aluminum and analysis of failure zone <i>Karthik Mathivanan Peter Plapper University of Luxembourg</i>	
15:15 - 15:30	Selective ultrashort laser fabrication of thick and thin volume-phase gratings in glass <i>Julen Jose Azkona Miguel Martinez-Calderon, Mikel Gomez-Aranzadi, Ainara Rodriguez, Santiago Miguel Olaizola Ceit</i>	Bulk alloying of details obtained by selective laser melting, by hot isostatic pressing <i>Alena Valeryevna Ivashchenko Anna Alekseevna Voznesenskaya, Andrey Viktorovich Kireev, Dmitry Andreevich Kochuev, Alexey Valeryevich Zhdanov, Miron Nikolaevich Gerke Vladimir State University named after A. G. and N. G.</i>		Laser welded titanium cubesats <i>Sheila Medeiros de Carvalho Milton Sergio Fernandes de Lima, Rafael Humberto Mota de Siqueira Institute for Advanced Studies</i>	
Coffee break		Coffee break		Coffee break	
<i>Processing of Transparent Materials (We_A2_4), M. Schmidt</i>		<i>SLM-Metal (We_A31_4), M. Rethmeier</i>		<i>Micro-Joining (Welding and Brazing) (We_A32_4), M. Schmidt</i>	
16:00 - 16:15	Water film assisted picosecond laser ablation of glasses <i>Edgaras Markauskas Paulius Gečys, Gediminas Račiukaitis Center for Physical Sciences and Technology</i>	Einstein-Elevator: Research on space relevant production technologies on the example of additive manufacturing (Invited) <i>Ludger Overmeyer Christoph Lotz, Oliver Suttmann, Stefan Kaierle, Wolfgang Ertmer Leibniz Universität Hannover</i>		Residual stresses and crack formation in laser welding of amorphous thermoplastics <i>Andreas Schkutow Thomas Frick, Samir Lamrini, Karsten Scholle, Peter Fuhrberg Technische Hochschule Nürnberg Georg Simon Ohm</i>	
16:15 - 16:30	Borosilicate glass structuring by nanosecond laser pulses <i>Christopher Kren Philipp Kleingarn, Birgit Lange, Norbert Koop, Ralf Brinkmann Medical Laser Center Luebeck</i>			High yield direct fusion welding of glass and metal <i>Richard Mark Carter Paulina O Morawska, Samuel Hann, M J Daniel Esser, Duncan P Hand Heriot-Watt University</i>	
16:30 - 16:45	Complete manufacturing of microfluidics chip with only one ultra-short pulsed laser <i>Marc Décultot Anne Henrottin, Jérôme Patars, José Antonio Ramos-de-Campas Lasea</i>	Ability of miniaturization of single tracks using laser metal deposition with wire <i>Judith Saffer Konstantin Hofmann, Maximilian Breitwieser, Kerstin Schaumberger, Jakob Ermer, Florian Kaufmann, Stephan Roth, Michael Schmidt Bayerisches Laserzentrum GmbH</i>		Laser microwelding and sealing of thin, polymeric lab-on-chips. <i>Félix Ares-Blanco Nerea Otero-Ramudo, Pablo M. Romero-Romero, Gonzalo Guadaño, Bernd Gründig AIMEN</i>	
16:45 - 17:00		In-situ optical emission spectroscopic investigation of direct laser melting process during fabrication of Ti-6Al-4V parts <i>Antaryami Mohanta Briac Lanfant, Marc Leparoux EMPA</i>		Laser welding of flexible ribbons to untreated Al Die casting for EMC applications <i>Hans-Georg von Ribbeck Benjamin Mehlmann F & K DELVOTEC Bondtechnik GmbH</i>	
17:00 - 17:15	Precision laser cutting of glass for industrial applications in 2 & 3D <i>Sandra Höhm Ralf Terbrüggen, Uwe Stute, Heiko Kiessling Corning Laser Technologies GmbH</i>	Quality improvement of laser welds on thick duplex plates by laser cladmed buttering <i>Anne Straße Andrey Gumenyuk, Michael Rethmeier Bundesanstalt für Materialforschung und -prüfung (BAM)</i>		Towards industrial usage of ultrashort pulse welding <i>Felix Zimmermann Sebastian Hecker, Michael Jenne, Daniel Flamm, Myriam Kaiser, Jonas Kleiner, Marcel Schäfer Trumpf Laser- und Systemtechnik GmbH</i>	
17:15 - 17:30	Selective etching of Sapphire and Fused silica by double pulse femtosecond laser radiation <i>Valdemar Stankevič Jonas Karosas, Gediminas Račiukaitis Ctr for Physical Sciences and Technology</i>	Alternative solutions to crack issues considering laser metal deposition in hybrid-additive manufacturing of press tools <i>Stefan Belitz Tobias Todzy, Christoph Kaminsky, Henning Zeidler Daimler AG</i>		A Novel Approach for Welding Metallic Foils Using Pulsed-Laser Radiation in the Field of Battery Production <i>Hoda Mohseni Maximilian Schmoeller Technical University of Munich</i>	
17:30 - 17:45	Subsurface modification of semiconductor materials by laser nanosecond pulses with a wavelength from tail of the absorption edge. <i>Alexander Grigorev Laser technology center</i>	Buildup stability and height prediction for direct metal deposition <i>Daniel Eisenbarth Fabian Soffel, Konrad Wegener inspire AG, ETH Zürich</i>		Laser Micro Welding – A Flexible and Automatable Joining Technology for the Challenge of Electromobility <i>André Häusler Sören Hollatz, Johanna Helm, Alexander Olowinsky, Arnold Gillner Fraunhofer Institute for Laser Technology ILT</i>	

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<i>Processing of Transparent Materials (Th_A2_1), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_1), A. Gumenyuk</i>		<i>Cutting and CFRP-Processing (Th_A32_1), M. Zäh</i>	
08:30 - 08:45	Selective laser ablation of transparent flexible bi-layer foils <i>Tamara Delgado Sara M. Vidal, Nerea Otero-Ramudo, Pablo M. Romero-Romero AIMEN</i>	Non-linear thermal model of the Direct Laser Melting Process considering the adhesion of the consolidated material to the substrate using a domain with discontinuous material properties <i>Francisco Cordovilla Piera Álvarez, Ángel García-Beltrán, M. Ángeles Montealegre, José L. Ocaña UPM Laser Centre. ETSI Industriales. Universidad Politécnica de Madrid</i>	Prediction of Cutting Interruptions for Laser Cutting Using Logistic Regression <i>Leonie Felica Tatzel Karlsruhe Institute of Technology / TRUMPF Werkzeugmaschinen GmbH + Co. KG</i>		
08:45 - 09:00	Recording of volume Bragg gratings in quartz glass by ultrashort laser pulses <i>Margarita Alexandrovna Tarasova Dmitry Andreevich Kochuev, Anton Sergeevich Chernikov, Kirill Sergeevich Khorkov, Valery Grigorevich Prokoshev, Alexander Viktorovich Fedin Vladimir State University named after A. G. and N. G.</i>	Measurement of thermal cycle at multi-pass layer build-up with different travel path strategies during DLMD process <i>Andrey Gumenyuk Stanislav Leonidovich Stankevich, Anne Strasse, Michael Rethmeier St.Peterburg Polytechnical University</i>	Effects of beam power and power density distribution on process and quality issues during fiber laser cutting of stainless steel sheet metal <i>Dirk Petring Dennis Arntz, Stoyan Stoyanov, Frank Schneider Fraunhofer ILT</i>		
09:00 - 09:15	Glass processing with different techniques <i>Paulius Gečys Juozas Dudutis, Jokūbas Pipiras Center for physical sciences and technology</i>	Additive Manufacturing by Wire based Laser Metal Deposition <i>Mathieu VALENTIN Rainer KLING, Christophe ARNAUD ALPHANOV</i>	Cutting of composite materials: a quality and processing time optimized scan strategy for GFRP and CFRP <i>Frank Schneider Dirk Petring, Norbert Wolf Fraunhofer Institute for Laser Technology ILT</i>		
09:15 - 09:30	Femtosecond laser micromachining applied to the manufacturing of glass-based devices <i>Audrey Champion Anne Henrottin, David Bruneel, Jose Antonio Ramos-de-Campos, Axel Kupisiewicz LASEA</i>	Thermal monitoring of Direct Laser Metal Deposition of a Nickel-based superalloy <i>Marco Mazzarisi Sabina Luisa Campanelli, Andrea Angelastro, Michele Dassisi, Matteo Duraccio, Fania Palano, Antonella Rizzo Politecnico di Bari</i>	Tip-Tilt piezo platform scanner qualifies dynamic beam shaping for high laser power in cutting applications <i>Cindy Goppold Patrick Herwig, Mathias Bach Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS</i>		
09:30 - 09:45	Tempering of color printed glass using laser <i>Lokman Altan Prof. Dr.-Ing. Günther Waibel Hochschule Offenburg</i>	Laser Direct Metal Deposition to Formation of High-entropy alloy on steel substrate <i>Aline Capella de Oliveira Carlos Alberto Souto, Laura Angélica Ardila Rodriguez, Katia Regina Cardoso Federal University of Sao Paulo</i>	Laser Drilling of Thermal Barrier Coated Nickel Alloy <i>Sundar Marimuthu Phillip Hayward, Bethan Smith The Manufacturing Technology Centre</i>		
09:45 - 10:00	Correlation between Joint Strength and Process Temperature in Quasi-Simultaneous Laser Transmission Welding of Polyamide 6 <i>Anton Schmailzl Benjamin Quandt, Stefan Hierl, Michael Schmidt Ostbayerische Technische Hochschule Regensburg</i>	High-Speed Imaging Investigation of Laser Metal Deposition with Various Beam Profiles <i>Himani Siva Prasad Frank Brueckner, Alexander. F. H Kaplan Luleå University of Technology</i>	Influence of reinforcement materials in laser perforation of polymers <i>Martin Griebel Jean Pierre Bergmann TU Ilmenau</i>		
Coffee break		Coffee break		Coffee break	
<i>Surface Functionalization (Th_A2_2), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_2), A. Gumenyuk</i>		<i>Cutting and CFRP-Processing (Th_A32_2), M. Zäh</i>	
10:30 - 10:45	Application of femtosecond laser shock peening in Nitrogen gas for improvement of corrosion resistance of NiTi alloy in Hank's solution <i>Hao Wang Evgeny Gurevich, Andreas Ostendorf Ruhr-Universität Bochum</i>	Computer simulation of hydrodynamic and thermal processes in DMD technology <i>Gleb Andreevich Turichin Ekaterina Alexandrovna Valdaitseva, Stanislav Leonidovich Stankevich, Ilya Nikolaeovich Udin St. Petersburg State Marine Technical University</i>	Determination of the 3D-Geometry of Cutting Fronts with High Temporal Resolution <i>Michael Sawannia Peter Berger, Michael Jarwitz, Rudolf Weber, Thomas Graf University of Stuttgart</i>		
10:45 - 11:00	Direct laser-writing of holographic markings for protecting luxury products against counterfeiting <i>Krystian L. Włodarczyk Marcus Ardron, Simone Mazzucato, Luca Valisari, Federico Iacovella, Nicholas J. Weston, Duncan P. Hand Heriot-Watt University</i>	Integrated Numerical and Machine Learning Model for Deposition Path Planning in Multi-layer Laser Aided Additive Manufacturing <i>Youxiang Chew Kai Ren, Guijun Bi, Zhang Yun Feng, Jerry Ying Hsi SIMTech</i>	High-speed X-Ray Imaging of the Cutting Process during Laser Beam Cutting of Aluminum. <i>Jannik Lind David Blazquez-Sanchez, Jens Weidensdoerfer, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge (IFSW) / Precitec GmbH & Co. KG</i>		
11:00 - 11:15	Laser-induced periodic surface structures on stainless steel moulds for thermoplastic composite materials manufacturing <i>Matthias Feinaeugle Marek Mezera, Gert-willem Römer University of Twente</i>	Laser deposition of fused silica coreless fibers to generate functional waveguides <i>K. Rettschlag F. Kranert, A. Hohnholz, A. Wienke, O. Suttmann, J. Neumann, D. Kracht, R. Lachmayer Leibniz Universität Hannover</i>	Silica glass cutting with dual-beam laser <i>Hao Liu Kai Han, Minsun Chen, Wenda Cui, Guomin Zhao National University of Defense Technology</i>		
11:15 - 11:30	Tailored femtosecond fabrication of reflective waveplates <i>Alejandra San Blas Noemí Casquero, Miguel Martínez-Calderón, Jerónimo Buencuerpo, Luis Miguel Sánchez-Brea, Jesús del Hoyo, Santiago Miguel Olaizola, Ainara Rodríguez, Mikel Gómez-Aranzadi</i>	Laser deposition welding with centric material feed and circular direct diode modules <i>Michael Guepner Jens Bledtner, Stefan Ulrich, Michael Schnick, Nils Brocke Ernst-Abbe-University of Applied Sciences Jena</i>	Establishing optimal parameters for laser cutting of thin semi-transparent organic material <i>K.T. Voisey W. Syam, E. Britchford, D.T. Branson III The University of Nottingham</i>		
11:30 - 11:45	Challenges and Opportunities for Laser-based Additive Manufacturing of Strain Sensors <i>Matthias Rehberger Christian Vedder, Johannes Henrich Schleifenbaum Fraunhofer Institute for Laser Technology ILT</i>		Cut Edge Structures and Gas Boundary Layer Characteristics in Laser Beam Fusion Cutting <i>Madlen Borkmann Achim Mahrle, Eckhard Beyer Technische Universität Dresden</i>		
11:45 - 12:00	Antibacterial surfaces produced by high-average power USP laser <i>Laura Gemini Marc Faucon, Adrian H.A. Lutey, Luca Romoli, Rainer Kling ALPHANOV</i>	Microstructure and Mechanical Characterization of Laser Aided Additive Manufactured Fe50Mn30Co10Cr10 High Entropy Alloy <i>Youxiang Chew Guijun Bi, Zhiqiang Zhu, Fern Lan Ng, Bing Yang Lee SIMTech</i>	Improving component cleanliness during laser remote ablation processes with high-power lasers by optimized emission blower and suction strategies <i>Tom Schiefer Martin Sauer, Annett Klotzbach, Elke Schade, Michelle Wöllner, Gerrit Mäder, Beate Leupolt, Jens Standfuß, Stefan Kaskel Fraunhofer Institut für Werkstoff- und Strahltechnik</i>		
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<i>Surface Functionalization (Th_A2_3), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_3), T. Graf</i>		<i>Fundamentals and Process Simulation (Th_A32_3), H. Huber</i>	
14:00 - 14:15		Process development for additive multi-material components	Robert Bernhard Philipp Neef, Henning Wiche, Volker Wesling, Christian Hoff, Jörg Hermsdorf, Stefan Kaieler Clausthaler Zentrum für Materialtechnik	Time-resolved pump-probe analysis of metal ablation using single and double ultrashort laser pulses	Maximilian Spellaue Jan Winter, Cormac McDonnell, Stephan Rapp, Michael Schmidt, Heinz P. Huber Lasercenter Munich University of Applied Sciences
14:15 - 14:30		Pulse laser influence on two-beam laser metal deposition	Marius Gipperich Thomas Bergs, Jan Riepe, Martin Schulz Fraunhofer IPT	Time-resolved pump-probe microscopy of the ablation dynamic in ultrashort laser pulse irradiated aluminum and stainless steel	Jan Winter Cormac McDonnell, Stephan Rapp, Maximilian Spellaue, Michael Schmidt, Heinz P. Huber Lasercenter Munich University of Applied Sciences
14:30 - 14:45	Direct Laser Interference Patterning of antibacterial surfaces on stainless steel by means of ultrafast laser	Selective Surface Activation Induced by a Laser (SSAIL) - a method for electrical circuit formation on dielectric surfaces	Karolis Ratautas Aldona Jagminienė, Ina Stankevičienė, Eugenijus Norkus, Gediminas Račiukaitis Center for Physical Sciences and Technology	Simulation of ultrafast laser ablation topography of metals	Liliana Cangeiro Paul-Etienne Martin, José António Ramos-de-Campos, Axel Kupisiewicz, David Bruneel LASEA
14:45 - 15:00	GO-neutral red nanocomposite reduction by nanosecond, picosecond and femtosecond lasers	Design and Pathway Programming of Organic Freeform Thin-walled Geometries produced by Laser Metal Deposition	Magdalena Assaad Marco Anilli, Ali Gökhan Demir, Stefano Mutti, Daniele Tamborini, Lorenzo Molinari Tosatti, Andrea Crosato, Barbara Previtali Politecnico di Milano	CFD simulations for laser welding of Aluminum alloys	Pareekshith Allu Flow Science Inc.
15:00 - 15:15	High resolution pixel based direct laser patterning for surface functionalization	Distinct changes in microstructure due to heat input during laser metal deposition of H13 tool steel	Annika Bohlen Hannes Frejße, Frank Vollertsen Bremer Institut für angewandte Strahltechnik GmbH	Predicting the Grain Structure of Laser Beam Welds in Aluminum Alloys.	Christian Hagenlocher Florian Fetzter, Daniel Weller, Artur Leis, Rudolf Weber, Thomas Graf Universität Stuttgart (Institut für Strahlwerkzeuge)
15:15 - 15:30	Increasing heat transfer of metals through periodical microstructures using Direct Laser Interference Patterning	LASER CLADDING WITH CONICAL BEAMS	Yuri Chivel MerPhotonics	Experimental results and modeling of element loss in continuous wave laser beam welding of aluminum alloys	Florian Hugger Eric Punzel, Michael Schmidt BBW Lasertechnik GmbH
Coffee break		Coffee break		Coffee break	
<i>Surface Functionalization (Th_A2_4), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_4), T. Graf</i>		<i>Fundamentals and Process Simulation (Th_A32_4), M. Schmöller</i>	
16:00 - 16:15	Innovative method to enhance the control over the fabrication of LIPSS on metallic surfaces	Laser-induced selective electroless metal deposition on free-form surfaces	Vytautas Vosylius Karolis Ratautas, Aldona Jagminienė, Ina Stankevičienė, Eugenijus Norkus, Gediminas Račiukaitis Center for Physical Sciences and Technology	Genetic Algorithm for the Correlation of the Keyhole and the Melt Pool Depth in Laser Beam Welding of AA6082	Maximilian Schmoeller Maximilian Neureiter, Michael F. Zaeh Technical University of Munich
16:15 - 16:30	Laser material processing and functionalization with tailored focal intensity distributions	Thermo-Fluidic Modelling of Meltpool Instabilities during Laser Metal Deposition of Inconel 625	Akash Aggarwal A. R. Vinod, Arvind Kumar Indian Institute of Technology Kanpur	A theoretical model for reactive gas laser cutting of metals	Michael Heinrich Brueggemann Martin Mural, Beat Neuenschwander, Stefan Wittwer, Thomas Feurer University of Bern
16:30 - 16:45	Laser polishing of Aluminum and Polyamide for dissimilar laser welded assemblies	Laser Direct Metal Deposition to Formation and Growth of Intermetallics between Al powder and Ti-6Al-4V substrate	Aline Capella de Oliveira Vinicius de Oliveira Castro Silva, Laura Angélica Ardila Rodriguez, Taisa Higino Federal University of Sao Paulo	Laser Transmission Welding of Thermoplastics – Analytical Model and its Experimental Evaluation	Marcus Scholl Debora Hölzemann, Ulrich Russek Rheinische Fachhochschule Köln gGmbH
16:45 - 17:00	Laser texturing of superhydrophobic surfaces on stainless steel: influence of storage conditions on the anti-wetting transition	3D thermal mapping during AM by LMD towards better part quality	Camilo Prieto Jorge Arias, Sara Carracelas, Baltasar Lodeiro, Carlos Gonzalez AIMEN	Optimization of reactive gas laser cutting parameters based on a combination of semi-analytical modelling and adaptive neuro-fuzzy inference systems	Michael Heinrich Brueggemann Martin Mural, Beat Neuenschwander, Stefan Wittwer, Thomas Feurer University of Bern
17:00 - 17:15	Periodic structures for superhydrophobic performance of metallic surfaces produced by femtosecond pulsed laser	Additive manufacturing of 3d polymer structures by laser polymer deposition	Magnus Thiele Yunus Kutlu, Henrik Dobbeltstein, Marcus Petermann, Cernal Esen, Andreas Ostendorf Ruhr-Universität Bochum	Temperature-dependent reflectivity of unpolished rolled copper for near infrared lasers	Manuel Mattern Andreas Ostendorf Ruhr-Universität Bochum
17:15 - 17:30	Picosecond Laser Based Surface Texturing of Silicon for Anti-Reflective Properties	Layer geometry depending on number of tracks during Selective Laser Melting	Joerg Volpp Luleå University of Technology	Numerical simulation of residual stresses in laser welding: Application to Ti6Al4V/316L steel assembly with vanadium insert	Rodolphe Bolot Antoine Mannucci, Alexandre Mathieu, Iryna Tomashchuk, Eugen Cicala, Cyril Roudeix, Sébastien Lafaye Université de Bourgogne Franche-Comté
17:30 - 17:45	TruMicro 2000: Next generation flexible ultrashort pulse fiber lasers for scientific and industrial applications	Influence of laser spot size, exposure time and power on the mechanical properties of Ti-6Al-4V microlattice structures	Darragh Egan Denis P. Dowling I-Form		