

LiM 2019 Advance Program, Sunday, 23.6.2019

08:00 - 18:00 **Registration at the LiM-counter in the ICM**

LiM 2019 Advance Program, Monday, 24.6.2019

07:30 **Registration at the LiM-counter in the ICM**

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	How the Laser Happened in Germany - a Plot with Reinhart 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 Insitute 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), J. Heberle</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, Paull 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 zinc-aluminium-magnesium coated steel – influence of the joint geometry Steffen Wachsmuth Sarah Nothdurft, Wilfried Reimann, Bastian Tigges, Ludger Overmeyer Volkswagen Aktiengesellschaft	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 Rafin
15:45 - 16:00		High-speed manufacturing of HLFC structures by laser micro drilling	Andreas Stephen Roberto Ocana, Joseba Esmoris, Christian Werner, Carlos Sariano, Frank Voltertsen, 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), U. Reisgen</i>		<i>Ablation, Drilling, and Micro-Cutting (Mo_A31_2), S. Kaierle</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 Haltum 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 Fetzler, 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 Weixler 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 Stambke TRUMPF Laser- und Systemtechnik GmbH
17:30 - 17:45	Application of different pulsed laser sources to dissimilar welding of Cu and Al alloys Alessandro Ascarì 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, Amédée Zryd, Bernard Richerzhagen Synova S.A.	Waveguide Polarisation and Mode Selection Technique for CO2 laser	Gavin Alan James Markillie Jason Lee, Peter Dyer Rafin-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), R. Kling</i>		<i>System Technology and Process Control - Micro (Tu_A32_1), D.P. Hand</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>			
08:45 - 09:00	Hybrid laser arc welding of thick plates X8Ni9 for LNG tank construction <i>Sergej Gook Abdel-Monem 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>			
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, Djamilia Bouaziz, Jean-Paul Yehouessi, Géraud Bouwmans University of Strasbourg</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>	
09:15 - 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 Hutář 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 HLFC applications <i>Roberto Ocaña Carlos Soriano, 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 Yumoto 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), R. Weber</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>	High throughput ultrafast laser processing with femtosecond bursts <i>Eric AUDOUARD Amélie LETAN, Konstantin MISHCHIK, Clemens HONNINGER, Eric MOTTAY AMPLITUDE</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>	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>		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 Nothdurft, 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 DÜSSER 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 Šebestová, 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	

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 (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), P. Plapper</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 Nottrott, Michael Jüngerst 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 Cicala, 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 Kawasuji, Masaki Arakawa, Takashi Onosa, Hakuru 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 Florian Lugauer 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 Urnoneit, 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>Muhammer Kör Matthias Leichtle, 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 Calderon, 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 Boid Norbert Pirch, Stephan Ziegler, Johannes Henrich Schlieffenbaum 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 Schoelkopf 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), M. Rethmeier</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 Gabar 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 Miyana, 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 Kaieler Laser Zentrum Hannover e. V.</i>		Increasing Productivity of Selective Laser Sintering with beam shaping <i>Steffen Boley Alexander Peter, Volkher Onuseit, Thomas Graf Universität Stuttgart</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 Institut für Strahlwerkzeuge (IFSW) / Graduate School of Excellence advanced Manufacturing Engineering (GSaME)</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. Feinaeugele</i>		<i>SLM-Metal (We_A31_2), M. Rethmeier</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. Gontad 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 Delaigüe, Clemens Hoenninger, Eric Mottay Amplitude Systemes</i>	Heat treatment of SLM-LMD hybrid components <i>Jan Döchting 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 Tjorben Griemsmann, Michael Hustedt, Christian Hoff, Joerg Hermsdorf, Stefan Kaieler LZH e.V.</i>		Micro Laser Lap Welding of Thin SS304 Sheet <i>sushil patel akash agrawal, 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 Busmann, Matthias Öischer, Marcus Scholl, Ulrich Russek Rheinische Fachhochschule Köln</i>	
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<i>Processing of Transparent Materials (We_A2_3), S. Roth</i>		<i>SLM-Metal (We_A31_3), B. Graf</i>		<i>Micro-Joining (Welding and Brazing) (We_A32_3), F. Vollertsen</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>			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 Phillippe Feve, Matthew Silva Sa, 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), Y. Okamoto</i>		<i>SLM-Metal (We_A31_4), B. Graf</i>		<i>Micro-Joining (Welding and Brazing) (We_A32_4), C. Arnold</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	Complete manufacturing of microfluidics chip with only one ultra-short pulsed laser <i>Marc Décultot Anne Henrottin, Jérôme Patars, José Antonio Ramos-de-Campos Losea</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	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>	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	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>	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 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 Insitute for Laser Technology ILT</i>	
17:00 - 17:15	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>	Quality improvement of laser welds on thick duplex plates by laser cladmed buttering <i>Anne StraÙe 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		Alternative solutions to crack issues considering laser metal deposition in hybrid-additive manufacturing of press tools <i>Stefan Beltz Tobias Tadz, 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 Mahseni Maximilian Schmoeller Technical University of Munich</i>	
17:30 - 17:45		Buildup stability and height prediction for direct metal deposition <i>Daniel Eisenbarth Fabian Soffel, Konrad Wegener inspire AG, ETH Zürich</i>			

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<i>Processing of Transparent Materials (Th_A2_1), J. Heberle</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	Francisco José Gontad Fariña Tamara Delgado, Sara M. Vidal, Nerea Otero-Ramudo, Pablo M. Romero-Romero AIMEN	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	Francisco Cordovilla Piera Álvarez, Ángel García-Beltrán, M. Ángeles Montealegre, José L. Ocaña UPM Laser Centre. ETSI Industriales. Universidad Politécnica de Madrid	Prediction of Cutting Interruptions for Laser Cutting Using Logistic Regression	Leonie Felica Tatzel Karlsruhe Institute of Technology / TRUMPF Werkzeugmaschinen GmbH + Co. KG		
08:45 - 09:00	Recording of volume Bragg gratings in quartz glass by ultrashort laser pulses	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.	Measurement of thermal cycle at multi-pass layer build-up with different travel path strategies during DLMD process	Andrey Gumenyuk Stanislav Leonidovich Stankevich, Anne Strasse, Michael Rethmeier St.Peterburg Polytechnical University	Effects of beam power and power density distribution on process and quality issues during fiber laser cutting of stainless steel sheet metal	Dirk Petring Dennis Arntz, Stoyan Stoyanov, Frank Schneider Fraunhofer ILT		
09:00 - 09:15	Glass processing with different techniques	Paulius Gečys Juozas Dudutis, Jokūbas Pipiras Center for physical sciences and technology	Additive Manufacturing by Wire based Laser Metal Deposition	Mathieu VALENTIN Rainer KLING, Christophe ARNAUD ALPHANOV	Cutting of composite materials: a quality and processing time optimized scan strategy for GFRP and CFRP	Frank Schneider Dirk Petring, Norbert Wolf Fraunhofer Institute for Laser Technology ILT		
09:15 - 09:30	Femtosecond laser micromachining applied to the manufacturing of glass-based devices	Audrey Champion Anne Henrottin, David Bruneel, Jose Antonio Ramos-de-Campos, Axel Kupisiewicz LASEA	Thermal monitoring of Direct Laser Metal Deposition of a Nickel-based superalloy	Marco Mazzarisi Sabina Luisa Campanelli, Andrea Angelastro, Michele Dassisi, Matteo Duraccio, Fania Palano, Antonella Rizzo Politecnico di Bari	Tip-Tilt piezo platform scanner qualifies dynamic beam shaping for high laser power in cutting applications	Cindy Goppold Patrick Herwig, Mathias Bach Fraunhofer-Institut für Werkstoff- und Strahltechnik IWS		
09:30 - 09:45	Tempering of color printed glass using laser	Lokman Altan Prof. Dr.-Ing. Günther Waibel Hochschule Offenburg	High-Speed Imaging Investigation of Laser Metal Deposition with Various Beam Profiles	Himani Siva Prasad Frank Brueckner, Alexander. F. H Kaplan Luleå University of Technology	Laser Drilling of Thermal Barrier Coated Nickel Alloy	Sundar Marimuthu Phillip Hayward, Bethan Smith The Manufacturing Technology Centre		
09:45 - 10:00	Correlation between Joint Strength and Process Temperature in Quasi-Simultaneous Laser Transmission Welding of Polyamide 6	Anton Schmailz Benjamin Quandt, Stefan Hierl, Michael Schmidt Ostbayerische Technische Hochschule Regensburg			Influence of reinforcement materials in laser perforation of polymers	Martin Griebel Jean Pierre Bergmann TU Ilmenau		
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	Hao Wang Evgeny Gurevich, Andreas Ostendorf Ruhr-Universität Bochum	Computer simulation of hydrodynamic and thermal processes in DMD technology	Gleb Andreevich Turichin Ekaterina Alexandrovna Valdaytseva, Stanislav Leonidovich Stankevich, Ilya Nikolaevich Udin St. Petersburg State Marine Technical University	Determination of the 3D-Geometry of Cutting Fronts with High Temporal Resolution	Michael Sawanna Peter Berger, Michael Jarwitz, Rudolf Weber, Thomas Graf University of Stuttgart		
10:45 - 11:00	Direct laser-writing of holographic markings for protecting luxury products against counterfeiting	Krystian L. Włodarczyk Marcus Ardron, Simone Mazzucato, Luca Valisari, Federico Iacovella, Nicholas J. Weston, Duncan P. Hand Heriot-Watt University	Integrated Numerical and Machine Learning Model for Deposition Path Planning in Multi-layer Laser Aided Additive Manufacturing	Youxiang Chew Kai Ren, Guijun Bi, Zhang Yun Feng, Jerry Ying Hsi SIMTech	High-speed X-Ray Imaging of the Cutting Process during Laser Beam Cutting of Aluminum.	Jannik Lind David Blazquez-Sanchez, Jens Weidensdoerfer, Rudolf Weber, Thomas Graf Institut für Strahlwerkzeuge (IFSW) / Precitec GmbH & Co. KG		
11:00 - 11:15	Laser-induced periodic surface structures on stainless steel moulds for thermoplastic composite materials manufacturing	Matthias Feinaeugle Marek Mezera, Gert-willem Römer University of Twente	Laser deposition of fused silica coreless fibers to generate functional waveguides	K. Rettschlag F. Kranert, A. Hahnholz, A. Wienke, O. Suttmann, J. Neumann, D. Kracht, R. Lachmayer Leibniz Universität Hannover	Silica glass cutting with dual-beam laser	Hao Liu Kai Han, Minsun Chen, Wenda Cui, Guomin Zhao National University of Defense Technology		
11:15 - 11:30	Tailored femtosecond fabrication of reflective waveplates	Alejandra San Blas Noemi Casquero, Miguel Martínez-Calderón, Jerónimo Buencuerpo, Luis Miguel Sánchez-Brea, Jesús del Hoyo, Santiago Miguel Olaizola, Ainaro Rodríguez, Mikel Gómez-Aranzadi	Laser deposition welding with centric material feed and circular direct diode modules	Michael Guepner Jens Bliedtner, Stefan Ulrich, Michael Schnick, Nils Brocke Ernst-Abbe-University of Applied Sciences Jena	Establishing optimal parameters for laser cutting of thin semi-transparent organic material	K.T. Voisey W. Syam, E. Britchford, D.T. Branson III The University of Nottingham		
11:30 - 11:45	Challenges and Opportunities for Laser-based Additive Manufacturing of Strain Sensors	Matthias Rehberger Christian Vedder, Johannes Henrich Schleifenbaum Fraunhofer Institute for Laser Technology ILT	Microstructure and Mechanical Characterization of Laser Aided Additive Manufactured Fe50Mn30Co10Cr10 High Entropy Alloy	Youxiang Chew Guijun Bi, Zhiguang Zhu, Fern Lan Ng, Bing Yang Lee SIMTech	Cut Edge Structures and Gas Boundary Layer Characteristics in Laser Beam Fusion Cutting	Madlen Borkmann Achim Mahrie, Eckhard Beyer Technische Universität Dresden		
11:45 - 12:00	Antibacterial surfaces produced by high-average power USP laser	Laura Gemini Marc Faucon, Adrian H.A. Lutey, Luca Romoli, Rainer Kling ALPHANOV			Improving component cleanliness during laser remote ablation processes with high-power lasers by optimized emission blower and suction strategies	Tom Schiefer Martin Sauer, Annett Klotzbach, Elke Schade, Michelle Wöllner, Gerrit Mäder, Beate Leupolt, Jens Standfuß, Stefan Kaskel Fraunhofer Institut für Werkstoff- und Strahltechnik (IWS)		
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<i>Surface Functionalization (Th_A2_3), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_3), S. Gook</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 Kaierle Clausthaler Zentrum für Materialtechnik	Time-resolved pump-probe analysis of metal ablation using single and double ultrashort laser pulses	Maximilian Spellauge Jan Winter, Cormac McDonnell, Stephan Rapp, Michael Schmidt, Heinz P. Huber Lasercenter Munich University of Applied Sciences
14:15 - 14:30	TruMicro 2000: Next generation flexible ultrashort pulse fiber lasers for scientific and industrial applications Florian Kanal TRUMPF Laser- und Systemtechnik	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 Spellauge, 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 Alexander Peter Adrian H.A. Lutey, Sebastian Faas, Luca Romali, Volkher Onuseit, Thomas Graf University of Stuttgart	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 Romualdas Trusovas Mantas Valiuševičius, Justina Gaidukevič, Jurgis Barkauskas, Gediminas Niaura Center for Physical Sciences and Technology	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 Crasato, 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 Stephan Bruening Keming Du, Manfred Jarczynski, Arnold Gillner Schepers GmbH & Co KG	Distinct changes in microstructure due to heat input during laser metal deposition of H13 tool steel	Annika Bohlen Hannes Freijße, 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 Sabri Alamri Frederic Schell, Tobias Steege, Andrés Fabián Lasagni, Tim Kunze Fraunhofer IWS	LASER CLADDING WITH CONICAL BEAMS	Yuri Chivel MerPhotonics	Experimental results and modeling of element loss in continuous wave laser beam welding of aluminum alloys	Eric Punzel Florian Hugger, Michael Schmidt BBW Lasertechnik GmbH
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<i>Surface Functionalization (Th_A2_4), M. Schmidt</i>		<i>Laser Metal Deposition (Th_A31_4), S. Gook</i>		<i>Fundamentals and Process Simulation (Th_A32_4), M. Schmöllner</i>	
16:00 - 16:15	Innovative method to enhance the control over the fabrication of LIPSS on metallic surfaces Mikel Gómez-Aranzadi Noemi Casquero, Miguel Martínez-Calderón, Alejandro San Blas, Santiago Miguel Olaizola, Ainara Rodriguez CEIT	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, Christian Stadter, Michael F. Zaeh Technical University of Munich
16:15 - 16:30	Laser material processing and functionalization with tailored focal intensity distributions Ulrike Fuchs Anna Möhl, Stephan Gräf, Frank A. Müller asphericon GmbH	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 Bruegmann Martin Muralt, Beat Neuenschwander, Stefan Wittwer, Thomas Feurer University of Bern
16:30 - 16:45	Laser polishing of Aluminum and Polyamide for dissimilar laser welded assemblies Mahdi Amne Elahi Marcus Koch, Peter Plapper University of Luxembourg	3D thermal mapping during AM by LMD towards better part quality	Camilo Prieto Jorge Arias, Sara Carracelas, Baltasar Lodeiro, Carlos Gonzalez AIMEN	Laser Transmission Welding of Thermoplastics – Analytical Model and its Experimental Evaluation	Marcus Scholl Debra 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 Wojciech S. Gora Juan Pedro Goday Vilar, Jonathan D. Shephard, Duncan P. Hand Heriot-Watt University	Additive manufacturing of 3d polymer structures by laser polymer deposition	Magnus Thiele Yunus Kutlu, Henrik Döbelstein, Marcus Petermann, Cemal Esen, Andreas Ostendorf Ruhr-Universität Bochum	Optimization of reactive gas laser cutting parameters based on a combination of semi-analytical modelling and adaptive neuro-fuzzy inference systems	Michael Heinrich Bruegmann Martin Muralt, 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 Paul William Butler-Smith The MTC	Layer geometry depending on number of tracks during Selective Laser Melting	Joerg Volpp Luleå University of Technology	Temperature-dependent reflectivity of unpolished rolled copper for near infrared lasers	Manuel Mattern Andreas Ostendorf Ruhr-University Bochum
17:15 - 17:30	Picosecond Laser Based Surface Texturing of Silicon for Anti-Reflective Properties Deepak Marla Anup Sharma, Suhas Joshi IIT Bombay	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	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					