

Laser Symposium and ISAM 2021: Final Program\*

C.E.T	TUE, December 7, 2021	WED, December 8, 2021	THU, December 9, 2021
	<b>OPENING PLENARY</b> Chair: Christoph Leyens   Fraunhofer IWS	<b>JOINT PLENARY</b> Chair: Frank Brückner   Fraunhofer IWS	<b>JOINT PLENARY</b> Chair: Andrés Lasagni   TU Dresden
10:00	<b>Welcome and Opening</b> Christoph Leyens   Fraunhofer IWS	<b>Opening</b> Frank Brückner   Fraunhofer IWS	<b>Opening</b> Andrés Lasagni   Fraunhofer IWS
10:15	<b>Plenary: The laser – Enabler of innovations for more than 50 years</b> Andreas Tünnermann   Fraunhofer IOF	<b>Plenary: Laser Pro Fusion – High productivity polymer 3D printing</b> Marco Nock   EOS GmbH Electro Optical Systems	<b>Plenary: Laser Processing – Solutions for Industry</b> Christoph Leyens   Fraunhofer IWS
	<b>JOINT SESSION: NEW LASER CONCEPTS</b> Chair: Andreas Wetzig   Fraunhofer IWS	<b>JOINT SESSION: BEAM SHAPING</b> Chair: Andreas Wetzig   Fraunhofer IWS	<b>JOINT SESSION: PROCESS CONTROL &amp; QUALITY</b> Chair: Dirk Dittrich   Fraunhofer IWS
10:45	<b>Scalable High Brightness High Power Blue Laser</b> Jean-Michel Pelaprat   NUBURU	<b>How Piezo Components Improve Efficiency in Macro Laser Material Processing</b> Lukas Rau   Physik Instrumente (PI) GmbH & Co. KG	<b>Process monitoring and control of laser processes with thermal cameras</b> Marko Seifert   Fraunhofer IWS
11:05	<b>Thin-disk multipass amplifier for kilowatt ultrafast lasers with flexible pulse parameters</b> Dominik Bauer   TRUMPF	<b>The opportunities of high power CBC fiber laser</b> Eyal Shekel   Civan Advanced Technologies Ltd.	<b>Listening to Light: Harnessing Airborne Ultrasound Emissions for Quality Monitoring of Laser Processing</b> Wolfgang Rohringer   XARION Laser Acoustics GmbH
11:25	<b>From blue laser to high-power white light</b> Simon Britten   Laserline	<b>High power applications for Spatial Light Modulators (SLM)</b> Yu Takiguchi   Hamamatsu Photonics K.K	<b>High-speed scanning chromatic confocal microscopy for inline inspection of laser structured molds and molded seals</b> László Domján   Optimal Optik Kft
	<b>Exhibitor Pitch</b>	<b>Exhibitor Pitch</b>	<b>Exhibitor Pitches</b>
11:45	<b>FemtoLux 30: improving industrial laser reliability through the innovative waterless laser cooling approach</b> Aldas Juronis   EKSPLA	<b>Diode lasers – a versatile tool</b> Markus Rütering   Laserline GmbH <b>Wire based Laser Metal Deposition</b> Sebastian Thieme   coaxworks GmbH	<b>Advanced product surfaces using laser-based biomimetics</b> Tim Kunze   Fusion Bionic GmbH
12:00	Lunch Break	Lunch Break	Lunch Break
12:30	<b>Poster Session</b>	<b>Poster Session</b>	<b>Poster Session</b>
	<b>LASER WELDING</b> Chair: Axel Jahn   Fraunhofer IWS	<b>HEAT TREATMENT</b> Chair: Marko Seifert   Fraunhofer IWS	<b>HIGH SPEED PROCESSING</b> Chair: Peter Rauscher   Fraunhofer IWS
	<b>ADVANCED PROCESSES AND APPLICATIONS FOR AM</b> Chair: Elena Lopez   Fraunhofer IWS	<b>AM PROCESS CHAIN</b> Chair: Frank Brückner   Fraunhofer IWS	<b>DESIGN AND BIOMIMETIC FOR AM</b> Chair: Lukas Stepien   Fraunhofer IWS
13:00	<b>Enabling E-mobility with Lasers – Mass Production Requirements and Solutions</b> Markus Kogel-Hollacher   Precitec GmbH & Co. KG	<b>ERLASER® HARD+CLAD – Laser System Technology for the additive manufacturing and advanced tooling</b> Roland Dierken   ERLAS, Erlanger Lasertechnik GmbH	<b>Ambitious into the future of additive manufacturing - Where the powder bed ends, the powder nozzle begins</b> Christoph Hauck   toolcraft AG
13:20	<b>Laser- A powerful tool for manufacturing of power electronics?!</b> Markus Lasch   Siemens AG	<b>Laser hardening of components subject to wear in series</b> Peter Leipe   SITEC Industrietechnologie GmbH	<b>AM for rail: variety is the spice of manufacturing!</b> Stefanie Brickwede   Mobility goes Additive e.V.
13:40	<b>Latest Results of Beam Modulation Effects in Copper and Aluminum Laser Welding by In-situ Observation with X-ray</b> Stephan Börner   Fraunhofer IWS	<b>Scan Systems for high throughput multi laser AM Machines</b> Daniel Reitemeyer   SCANLAB GmbH	<b>When to leverage on software to achieve standardised quality?</b> Christophe Blanc   LINK3D
	<b>LASER CUTTING</b> Chair: Jan Hauptmann   Fraunhofer IWS	<b>Temperature field control in laser hardening of complex geometries</b> Achim Mahrle   Fraunhofer IWS	<b>Laser-on-the-fly converting for industrial adhesive tapes</b> Peter Harendt   Lohmann GmbH & Co. KG
	<b>MICRO AND NANO STRUCTURING</b> Chair: Andrés Lasagni   TU Dresden	<b>LASER CLADDING</b> Chair: Maria Barbosa   Fraunhofer IWS	<b>High speed ultrafast laser micro drilling &amp; micro drilling close to the Sub-µm regime using new optical system solutions</b> Stephan Eifel   Pulsar Photonics GmbH
14:00	<b>Technology Transition in Sheet Metal Cutting - CO<sub>2</sub> to Fiber-Laser</b> Eckard Deichsel   Bystronic Group	<b>Planetary gearboxes revolutionized through laser clad planet pins</b> Max Draschner   ADMOS Gleitlager GmbH	<b>Hybridization in laser-based AM</b> Elena Lopez   Fraunhofer IWS
14:20	<b>A fast view onto the laser cutting front: the influence of fast beam shaping</b> Rudolf Weber   Institut für Strahlwerkzeuge (IFSW)	<b>Materials and technology trends in laser surface engineering – from high-speed processes to additive manufacturing by directed energy deposition (DED)</b> Arkadi Zikin   Oerlikon Metco AG	<b>Large Area Processing</b> Chair: Christoph Zwahr   Fraunhofer IWS
14:40	<b>Advanced Pulsed Fiber Laser Cutting</b> Michael Lee   IPG Laser GmbH	<b>New frontiers in high-power laser cladding</b> Holger Hillig   Fraunhofer IWS	<b>Functionalisation of large area surfaces due to direct laser texturing</b> Rainer Kling   Alphanov Technology Center
	<b>Recent progress in the development of next generation 3D battery – concepts, process development, and up-scaling (NextGen3DBat)</b> Wilhelm Pflöging   KIT - Karlsruhe Institute of Technology		<b>Direct Laser Interference Patterning: a tool for large area functionalisation of surfaces</b> Andrés Lasagni   Technische Universität Dresden
15:00	Short Break	Short Break	Short Break
	<b>BUSINESS FORUM</b> Chair: Jens Standfuß   Fraunhofer IWS	<b>NETWORKING SESSION   Parallel Activities</b>	<b>CLOSING PLENARY</b> Chair: Christoph Leyens   Fraunhofer IWS
15:10	<b>Laser-based Microstructuring for Large-Scale Roll-to-Roll Production of Light-Weight Organic Photovoltaic Films</b> Niels Friedrich-Schilling   Heliatek GmbH	<b>Workshop by "Women in 3D Printing"   Topic: Unordinary AM applications</b> Moderation: Elena Lopez, Fraunhofer IWS Panelists: Anne Debauge, L'Oréal Group   Sandra Cabeza, ILL   Mandanà Moshiri, LEGO   Valeria Tirelli, aidro Special Guest: Thomas Rohr, esa	<b>Best Poster Award</b>
15:20	<b>High-productivity laser power-bed fusion tools enabled by AFX fiber lasers with programmable beam quality</b> Dahv Kliner   nLIGHT		
15:30	<b>Applications of artificial intelligence and machine learning in laser materials processing</b> Killian Wasmer   Empa	<b>World Café: Thematic Discussion Rooms</b> 1. Lasers in Production: Expectations and Requirements   Moderation: Frank Brückner & Axel Jahn 2. Lasers in Processing Chains: Interfaces and Obstacles   Moderation: Jens Standfuß & Andrés Lasagni 3. Production of the Future: All Laser vs. No Laser Production   Moderation: Andreas Wetzig & Marko Seifert	<b>Plenary: Laser 3D printing of copper/diamond composite materials</b> Yongfeng Lu   Univ. of Nebraska-Lincoln
15:40	<b>High speed laser processing with polygon mirror scanners combining ultra-high speed beam deflection with high average power lasers</b> André Streek   MOEWE Optical Solutions GmbH		
15:50	<b>Panel Discussion</b> "Challenges. Opportunities. Business. – How to monetarize new developments in laser based processing"	<b>Speed Dating for attendees</b>	<b>Concluding Remarks</b> Christoph Leyens   Fraunhofer IWS
16:20	<b>Accompanying industrial exhibition</b>		