

Laser Symposium and ISAM 2021: Preliminary Program*

C.E.T

TUE, December 7, 2021

WED, December 8, 2021

THU, December 9, 2021

| OPENING PLENARY | | JOINT PLENARY | | JOINT PLENARY | |
|-----------------------------------|--|--|---|---|--|
| 10:00 | Welcome and Opening Christoph Leyens Fraunhofer IWS | Opening Frank Brückner Fraunhofer IWS | | Opening Andrés Lasagni Fraunhofer IWS | |
| 10:15 | Plenary: The laser – Enabler of innovations for more than 50 years Andreas Tünnermann Fraunhofer IOF | Plenary: Laser Pro Fusion – High productivity polymer 3D printing Marco Nock EOS GmbH Electro Optical Systems | | Plenary: Laser Processing – Solutions for Industry Christoph Leyens Fraunhofer IWS | |
| JOINT SESSION: NEW LASER CONCEPTS | | JOINT SESSION: BEAM SHAPING | | JOINT SESSION: PROCESS CONTROL & QUALITY | |
| 10:45 | Scalable High Brightness High Power Blue Laser Jean-Michel Pelaprat NUBURU | How Piezo Components Improve Efficiency in Macro Laser Material Processing Lukas Rau Physik Instrumente (PI) GmbH & Co. KG | | Process monitoring and control of laser processes with thermal cameras Marko Seifert Fraunhofer IWS | |
| 11:05 | Thin-disk multipass amplifier for kilowatt ultrafast lasers with flexible pulse parameters Dominik Bauer TRUMPF | The opportunities of high power CBC fiber laser Eyal Shekel Civan Advanced Technologies Ltd. | | Listening to Light: Harnessing Airborne Ultrasound Emissions for Quality Monitoring of Laser Processing Wolfgang Rohringer XARION Laser Acoustics GmbH | |
| 11:25 | From blue laser to high-power white light Simon Britten Laserline | High power applications for Spatial Light Modulators (SLM) Yu Takiguchi Hamamatsu Photonics K.K | | How can insitu process monitoring systems assist data driven approaches for the development of new laser processes? Thomas Grünberger plasmio Industrietechnik GmbH | |
| Exhibitor Pitches | | Exhibitor Pitches | | Exhibitor Pitches | |
| Lunch Break | | Lunch Break | | Lunch Break | |
| Poster Session | | Poster Session | | Poster Session | |
| LASER WELDING | ADVANCED PROCESSES AND APPLICATIONS FOR AM | HEAT TREATMENT | AM PROCESS CHAIN | HIGH SPEED PROCESSING | DESIGN AND BIOMIMETIC FOR AM |
| 13:00 | Enabling E-mobility with Lasers – Mass Production Requirements and Solutions Markus Kogel-Hollacher Precitec GmbH & Co. KG | ERLASER® HARD+CLAD – Laser System Technology for the additive manufacturing and advanced tooling Roland Dierken ERLAS, Erlanger Lasertechnik GmbH | Ambitious into the future of additive manufacturing - Where the powder bed ends, the powder nozzle begins Christoph Hauck toolcraft AG | High throughput laser processing using Polygon scanners Udo Löschner Universität Mittweida | Biomimetic and lattice design in additive manufacturing Anton Du Plessis Stellenbosch University |
| 13:20 | Laser- A powerful tool for manufacturing of power electronics?! Markus Lasch Siemens AG | Laser hardening of components subject to wear in series Peter Leipe SITEC Industrietechnologie GmbH | AM for rail: variety is the spice of manufacturing! Stefanie Brickwede Mobility goes Additive e.V. | Laser-on-the-fly converting for industrial adhesive tapes Peter Harendt Lohmann GmbH & Co. KG | Development, additive manufacturing, and qualification of an athermal mirror for space applications Sebastian Eberle Kampf Telescope Optics GmbH |
| 13:40 | Latest results of beam shaping effects in Copper and Aluminum laser welding by in-situ observation with x-ray Stephan Börner Fraunhofer IWS | Temperature field control in laser hardening of complex geometries Achim Mahrle Fraunhofer IWS | Qualification in AM – Ensuring the industrial adoption of Additive Manufacturing via standardised qualification Christoph Blanc LINK3D | High speed ultrafast laser micro drilling & micro drilling close to the Sub-µm regime using new optical system solutions Stephan Eiffel Pulsar Photonics GmbH | Hybridization in laser-based AM Elena Lopez Fraunhofer IWS |
| LASER CUTTING | MICRO AND NANO STRUCTURING | LASER CLADDING | LARGE AREA PROCESSING | MATERIALS AND TESTING | NEW APPLICATIONS & BUSINESS OPPORTUNITIES |
| 14:00 | Agile high power femtosecond systems for efficient laser machining Clemens Hönninger Amplitude system | Planetary gearboxes revolutionized through laser cladde planet pins Max Draschner ADMOS Gleitlager GmbH | Functionalisation of large area surfaces due to direct laser texturing Rainer Kling Alphanov Technology Center | Neutron diffraction characterization for metal additive manufacturing Sandra Cabeza Institute Laue Langevin (ILL) | Optimized Advanced Manufacturing for Space Products – Status and Outlook Christian Melzer RUAG Space Germany GmbH |
| 14:20 | Predictive modelling of laser-induced functional surface textures through machine learning Tobias Steege Fraunhofer IWS | Materials and technology trends in Laser Surface Engineering – from high-speed Arkadi Zikin Oerlikon Metco AG | Direct Laser Interference Patterning: a tool for large area functionalisation of surfaces Andrés Lasagni Technische Universität Dresden | Mechanical properties of laser-processed sheet metals Martina Zimmermann Fraunhofer IWS | Laser production of nanofibers Juan Pou University of Vigo |
| 14:40 | Next Generation 3D Battery – Concepts, Process Development and Up-Scaling Wilhelm Pflöging KIT - Karlsruhe Institute of Technology | New frontiers in high-power laser cladding Holger Hillig Fraunhofer IWS | High throughput laser processing, illustrated by permanent domain refinement of silicon steel Jan Hauptmann Fraunhofer IWS, Coherent, Maschinenfabrik Arnold GmbH | Advanced in-situ plasma diagnostics during high-speed laser processing Tobias Baselt Fraunhofer AZOM | Not everyday applications for laser cutting Patrick Herwig Fraunhofer IWS |
| Short Break | | Short Break | | Short Break | |
| BUSINESS FORUM | | NETWORKING SESSION Parallel Activities | | CLOSING PLENARY | |
| 15:10 | Laser-based Microstructuring for Large-Scale Roll-to-Roll Production of Light-Weight Organic Photovoltaic Films Niels Friedrich-Schilling Heliatek GmbH | Workshop by "Women in 3D Printing" Topic: Unordinary AM applications | | Best Poster Award | |
| 15:20 | High-productivity laser power-bed fusion tools enabled by AFX fiber lasers with programmable beam quality Dahv Kliner nLIGHT | World Café: Thematic Discussion Rooms 1. Lasers in Production: Expectations and Requirements 2. Lasers in Processing Chains: Interfaces and Obstacles 3. Production of the Future: All Laser vs. No Laser Production | | | |
| 15:30 | Applications of artificial intelligence and machine learning in laser materials processing Killian Wasmer Empa | Speed Dating for attendees | | Plenary: Laser 3D printing of copper/diamond composite materials Yongfeng Lu Univ. of Nebraska-Lincoln | |
| 15:40 | High speed laser processing with polygon mirror scanners combining ultra-high speed beam deflection with high average power lasers Florian Rößler MOEWE Optical Solutions GmbH | | | | |
| 15:50 | Panel Discussion "Challenges. Opportunities. Business. – How to monetize new developments in laser based processing" | | | Concluding Remarks Christoph Leyens Fraunhofer IWS | |
| 16:20 | | | | | |

Accompanying industrial exhibition

*as of 18.10.2021 | subject to changes