

SLT Program: Tuesday, 05 June 2018

→ ROOM C1.2.2: Plenary Session

09:00	SLT 2018 OPENING AND INFORMATION	Heidi-Maria Götz, IFSW, University of Stuttgart, Germany
09:10	WELCOME TO THE SLT 2018	Thomas Graf, IFSW, University of Stuttgart, Germany
09:20	WELCOME ADDRESS	Ulrich Steinbach, Ministerialdirektor / Amtschef Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg, Stuttgart, Germany
09:30	THE FUTURE OF INDUSTRIAL LASER APPLICATIONS	Berthold Schmidt TRUMPF Lasertechnik GmbH, Ditzingen, Germany
10:00	GRAVITATIONAL WAVE ASTRONOMY: WE CAN HEAR THE UNIVERSE!	Karsten Danzmann MPI für Gravitationsphysik, Hannover, Germany

10:30 COFFEE BREAK

→ ROOM C1.2.1, SLT Topic 1:
FUNDAMENTALS AND APPLICATIONS
OF CW LASER PROCESSING

	1.1 ADVANCED PROCESS CONTROL Chair R. Weber
11:15	OCT Process Control for Laser Welding T. Hesse, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany
11:40	Active Grain Structure Modulation during Laser Beam Welding C. Hagenlocher, IFSW, University of Stuttgart, Germany
12:05	OCT Quo Vadis? M. Kogel-Hollacher, Precitec GmbH & Co. KG, Gaggenau, Germany

→ ROOM C1.2.2, SLT Topic 2:
ULTRAFAST LASER SOURCES AND OPTICS

	2.1 HIGH POWER AND HIGH ENERGY ULTRAFAST LASERS Chair M. Abdou Ahmed
	Next-Generation 100W Femtosecond Laser System for Industrial Applications, J. Aus der Au, Spectra-Physics, Rankweil, Austria
	Progress in Sub-Picosecond Laser Development and High Power Frequency Conversion at Hilase Centre M. Smrž, HiLASE Centrum, Dolní Břežany, Czech Republic
	Scaling Industrial Applications by High-Power and High-Energy Ultrashort-Pulsed Lasers F. Kanal, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany

12:30 LUNCH AND LASYS VISIT

	1.2 HIGH AVERAGE POWER LASER PROCESSES Chair J. Trbola	2.2 ULTRAFAST SCANNERS Chair B. Dannecker
14:15	Welding of High Thickness Steel Plates using Different Methods S. Olschok, RWTH Aachen University, Germany	New Generation of High-Speed, Polygon-Driven 2D-Deflection Units and Controller for High-Power and High-Repetition Rate Applications E. Wagner, RAYLASE GmbH, Weßling, Germany
14:40	High Power Laser Beam Welding of Thick Materials using EM Melt Pool Control A. Gumenyuk, BAM, Berlin, Germany	Polarization-Based Laser Pulse Modulation Scheme for High-Power Ultrafast Lasers with High Repetition Rates A. Loescher, IFSW, University of Stuttgart, Germany
15:05	Benefits of High-Speed Welding with High-Average Power Lasers F. Fetzer, IFSW, University of Stuttgart, Germany	Fast Laser Beam Scanning with Polygons for Engraving and Direct Printing G. Hennig, Daetwyler Graphics AG, Bleienbach, Switzerland

15:30 COFFEE BREAK

	1.3 ADDITIVE MANUFACTURING Chair P. Berger	2.3 BEAM DELIVERY FOR HIGH POWER ULTRAFAST LASERS, Chair M. Abdou Ahmed
16:10	Next Steps of Laser Beam Melting – Multi-Material-Processing and Sensor Integration M. Illgner, Fraunhofer IGCV, Augsburg, Germany	Ultrafast Laser Fiber Beam Delivery Systems – Status Quo and Future Challenges B. Wedel, Photonic Tools GmbH, Berlin, Germany
16:35	Direct Metal Laser Melting (DMLM) for Gas Turbine Applications M. Hoebel, GE Power, Birr, Switzerland	Polarization Maintaining Behavior of Hollow-Core Fibers C. Röhrer, IFSW, University of Stuttgart, Germany
17:00	Additive Manufacturing on the Way to Industrialization F. Nachtigall, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany	Photonic Crystal Fiber-Based Components for High Power Industrial fs Laser Applications J. Bouillet, ALPHANOV, Talence, France

18:00 INDIVIDUAL TRANSFER TO THE IFSW

18:30	SLT 2018 EVENING WELCOME	Thomas Graf, Director of the IFSW
18:45	LASER APPLICATION BASICS LIVE	Staff of the IFSW
19:30	NETWORKING AND DINNER IN THE INNER COURTYARD	Swabian Evening at the IFSW

SLT Program: Wednesday, 06 June 2018

→ ROOM C1.2.2: Plenary Session

09:00	SLT 2018 OPENING AND INFORMATION	Heidi-Maria Götz, SLT Organization, IFSW, University of Stuttgart, Germany
09:10	LASER: THE IDEAL UNIVERSAL TOOL FOR INDUSTRY 4.0	Thomas Graf, Director of the IFSW IFSW, University of Stuttgart, Germany
09:30	THE EUROPEAN XFEL – LASING FROM FREE ELECTRONS AT ANY WAVELENGTH	Thomas Tschentscher European XFEL, Schenefeld, Germany
10:00	QUANTUM TECHNOLOGY FOR THE REAL WORLD	Jörg Wrachtrup 3 rd Institute of Physics, University of Stuttgart, Germany

10:30 COFFEE BREAK

→ ROOM C1.2.1, SLT Topic 3:
FUNDAMENTALS AND APPLICATIONS
OF ULTRAFAST LASER PROCESSING

	3.1 SURFACE FUNCTIONALIZATION Chair S. Faas
11:15	Surface Functionalization by Laser-Induced Periodic Surface Structures (LIPSS) J. Bonse, BAM, Berlin, Germany
11:40	Surface Functionalization by USP Laser Texturing L. Gemini, ALPhANOV, Talence, France
12:05	Unlimited Surface Functionalities using Direct Laser Interference Patterning – From Basic Principles to Industrial Applications, T. Kunze, Fraunhofer IWS, Dresden, Germany

→ ROOM C1.2.2, SLT Topic 4:
HIGH AVERAGE POWER CW LASER SOURCES
AND OPTICS

	4.1 SYSTEM TECHNOLOGY FOR HIGH AVERAGE POWER CW LASER APPLICATIONS, Chair V. Onuseit
	Scanner Technology for Laser Beam Welding – Past, Present, Future R. Dierken, ERLAS Erlanger Lasertechnik GmbH, Erlangen, Germany
	New Concepts for Laser Beam Analysis O. Märten, PRIMES GmbH, Pfungstadt, Germany
	Laser Safety Considerations and Experiments at Average Laser Powers up to 16 kW V. Onuseit, IFSW, University of Stuttgart, Germany

12:30 LUNCH AND LASYS VISIT

	3.2 SYSTEM TECHNOLOGY FOR ULTRAFAST LASER APPLICATIONS, Chair V. Onuseit	4.2 MID-IR AND VISIBLE LASER SOURCES Chair T. Dietrich
14:15	System Technology for Processing with High Power Ultrafast Lasers B. Neuenschwander, Berner FH, Burgdorf, Switzerland	Visible High Power Fiber Coupled Diode Lasers B. Köhler, COHERENT DILAS, Mainz, Germany
14:40	Optical Systems for Massive Parallel Processing: Design and Simulation O. Pütsch, RWTH Aachen University, Aachen, Germany	Power Scaling Strategies for Two-Micron Fibre Lasers W. A. Clarkson, ORC, University of Southampton, Southampton, UK
15:05	Ultrafast Lasers and Optics – Commodity Tools for Machine Integration? K. Stolberg, JENOPTIK Healthcare & Industry, Jena, Germany	Recent Work on Ho:YAG Thin Disk Lasers in the Multiple 10 W Range G. Renz, German Aerospace Center, Stuttgart, Germany

15:30 COFFEE BREAK

	3.3 SCALING ULTRAFAST LASER APPLICATIONS Chair C. Freitag	4.3 SPATIAL AND SPECTRAL TAILORING OF HIGH POWER LASER BEAMS, Chair M. Abdou Ahmed
16:00	Controlling Exhaust of Ultra-Short Pulsed Laser Processes B. Frühauf, ULT AG, Löbau, Germany	GHz Repetition Rate Sub ps Pulse Generation from a Non-Modelocked Source E. Cormier, Université Bordeaux, Talence, France
16:25	Ablative Laser Material Processing of Steel and Silicon A. Michalowski, Robert Bosch GmbH, Stuttgart, Germany	Development of Sub-Wavelength Grating Mirrors for High-Power Lasers M. Rumpel, MarTec Photonics, Stuttgart, Germany
16:50	X-ray Emission during Ultra-Short Pulsed Laser Processing R. Weber, IFSW, University of Stuttgart, Germany	Optimized Laser Processing Based on MPLC Beam Shaping L. Garcia, CALabs SAS, Rennes, France

17:15 SLT 2018 CLOSING NOTE

17:15	R. Weber, IFSW, University of Stuttgart, Germany	M. Abdou Ahmed, IFSW, University of Stuttgart, Germany
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