SLT 2024 Advance Program, Tuesday, 04.06.2024

08:00 - 09:00	Registration and Coffee

Room 3: Plenary Session

Plenary Session - Quantum Technology			Chair T. Graf
09:00 - 09:15	H. Götz	SLT Opening and Information	SLT Organization, IFSW, Universität Stuttgart, Germany
09:15 - 09:30	T. Graf & A. Michalowski	Welcome to the SLT 2024	University of Stuttgart, IFSW, Germany
09:30 - 10:15	J. Anders	Miniaturization and industrialization of quantum sensors	University of Stuttgart - Institute of Smart Sensors, Stuttgart, Germany
10:15 - 11:00	M. Förtsch	Quantum technology supported by photonics	Q.ANT GmbH, Ulm, Germany
11:00 - 11:30		Coffee and Cookies	

Room 3:

Laser Processing for e-Mobility			Chair C. Hagenlocher
11:30 - 12:00	O. Bocksrocker	Unlocking Opportunities for EV Industry with Beam Shaping of High-Power Laser	TRUMPF, Ditzingen, Germany
12:00 - 12:15	G. Pallier	Advancing Electric Vehicle Manufacturing: High-Precision Laser Welding Solutions with MPLC Technology	CaiLabs, Rennes, France
12:15 - 12:30	P. Herwig	Laser goes Hydrogen	Fraunhofer IWS, Dresden, Germany
12:30 - 13:00	A. Demir	Laser hairpin welding across different wavelength and beam shaping capabilities	Politecnico di Milano, Milano, Italy
13:00 - 14:30		Lunch and Exhibition	

Dynamic Laser Beam Shaping and its Application I			Chair C. Hagenlocher
14:30 - 15:00	E. Shekel	Dynamic beam shaping with Coherent beam combining	Civan, Jerusalem, Israel
15:00 - 15:30	P. Franciosa	Is laser beam shaping a game changer to improve weld quality of e-mobility parts?	University of Warwick, Laser Beam Welding Group , Warwick, United Kingdom
15:30 - 16:00	D. Bartels	Dynamic beam shaping with Coherent beam combining during additive manufacturing	University of Erlangen, Erlangen, Germany
16:00 - 16:30		Coffee and Cookies	

Dynamic Laser Beam Shaping and its Application II			Chair M. Sawannia
16:30 - 17:00	D. Dittrich	Coherent Beam Combining - novel process solutions for laser welding	Fraunhofer IWS, Dresden, Germany
17:00 - 17:30	S. Olschok	Dynamic Beam Shaping “Foil” Welding	RWTH Aachen University, Aachen, Germany
17:30 - 18:00	J. Wagner	Laser welding with adjustable beam profiles	Robert Bosch, Renningen, Germany

18:00 - 19:00		Gottlieb-Daimler Memorial (optional)	
19:00 - 22:00		Conference Dinner at "Kleiner Kursaal"	

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Room 1:

Spectral, temporal and spatial shaping of laser beams			Chair M. Abdou Ahmed
11:30 - 12:00	O. Pronin	Making ultrashort pulses shorter with multipass cells	Helmut Schmidt University of the Federal Armed Forces Hamburg, Hamburg, Germany
12:00 - 12:15	D. Dung	Innovative All-Reflective Laser Beam Shaping for Material Processing based on Microstructured Mirrors	Midel Photonics, Bonn, Germany
12:15 - 12:30	A. Boubekraoui	Spectral beam shaping for dual-wavelength lasers	University of Stuttgart, IFSW, Stuttgart, Germany
12:30 - 13:00	C. Schmittner	versatile laser platform - from ultrafast to cw	University of Stuttgart, IFSW, Stuttgart, Germany
13:00 - 14:30		Lunch and Exhibition	

Laser Processing for Quantum Technologies			Chair T. Menold
14:30 - 15:00	R. Osellame	Femtosecond laser micromachining: an enabling tool for quantum technologies	Istituto di Fotonica e Nanotecnologie (IFN) - CNR, Milano, Italy
15:00 - 15:30	S. Nolte	Laser Processing for Quantum Technologies	Friedrich-Schiller-Universität Jena, Jena, Germany
15:30 - 16:00	M. Gräfe	Quantum walks in laser-written photonic structures	TU Darmstadt, Institute for Applied Physics, Darmstadt, Germany
16:00 - 16:30		Coffee and Cookies	

Novel Laser crystals and optics			Chair A. Loescher
16:30 - 17:00	F. Balembois	LED-pumped alexandrite multipass amplifiers	Laboratoire Charles Fabry (LCF), Institut d'Optique, Palaiseau, France
17:00 - 17:30	D. Didychenko	Grating waveguide structures for the generation of radially polarized beams in ceramic Yb:Lu2O3 thin-disk laser	University of Stuttgart, IFSW, Stuttgart, Germany
17:30 - 18:00	S. Esser	First thin-disk laser operation of Alexandrite crystal	University of Stuttgart, IFSW, Stuttgart, Germany

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Dipl.-Ing. Volkher Onuseit
IFSW, Universität Stuttgart

SLT 2024 Advance Program, Wednesday, 05.06.2024

08:00 - 09:00 Registration and Coffee

Room 3: Plenary Session

Plenary Session - Laser Sources			*Chair T. Graf*
08:30 - 08:45			
08:45 - 09:00	**H. Götz**	*SLT Opening and Information*	SLT Organization, IFSW, Universität Stuttgart, Germany
09:00 - 09:45	**B. Willke**	*Highly stabilized lasers for the search for gravitational waves and dark matter*	Leibniz University of Hannover and MPI for Gravitational Physics, Hannover, Germany
09:45 - 10:30	**E. Mottay**	*KiloWatt class femtosecond lasers for large area processing*	Amplitude Systemes, Pessac, France
10:30 - 11:00		***Coffee and Cookies***	

Room 3:

Additive Manufacturing of Metals			*Chair M. Henn*
11:00 - 11:30	**T. Schopphoven**	*Unlocking the full potential of Laser Material Deposition for coating, repair and additive manufacturing*	Fraunhofer ILT, Aachen, Germany
11:30 - 11:45	**M. Hofele**	*Increased productivity in laser based post processing of AM parts using combined laser processes*	Hochschule Aalen, Aalen, Germany
11:45 - 12:00	**T. Molitor**	*New paths for industrial plain bearing manufacturing*	Laserline GmbH, Mülheim-Kärlich, Germany
12:00 - 12:30	**F. Zanger**	*Additive Manufacturing PBF-LB/M*	Karlsruhe Institute of Technology - Institute of Production Science, Karlsruhe, Germany
12:30 - 14:00		***Lunch and Exhibition***	

Additive Micro- and Nanoprocessing			*Chair T. Menold*
14:00 - 14:30	**H. Giessen**	*Femtosecond 3D printing of complex micro-optics*	University of Stuttgart, 4. PI, Stuttgart, Germany
14:30 - 14:45	**L. Kroth**	*Highly efficient welding of additively manufactured thermoplastic components*	Evosys Laser GmbH, Erlangen, Germany
14:45 - 15:15	**J. Zimmer**	*Two-Photon Polymerization (2PP) for Micro and Nano Additive Manufacturing*	Nanoscribe, Karlsruhe, Germany
15:15 - 15:45		***Coffee and Cookies***	

Laser Beam Shaping for Micromachining			*Chair D. Holder*
15:45 - 16:15	**D. Flamm**	*Photonic Shaping Tools for Micro machining at Large Scales*	TRUMPF, Schramberg, Germany
16:15 - 16:30	**G. Pallier**	*Enhancing Ultra-Short Pulse Laser Machining with MPLC Technology: A Leap in Micro-Processing Efficiency*	CaiLabs, Rennes, France
16:30 - 17:00	**A. Peter**	*Upscaling of Direct Laser Interference Patterning*	University of Stuttgart, IFSW, Stuttgart, Germany
17:00 - 17:15		***Apéro***	

Stuttgart Laser Technology Forum			*Chair T. Graf*
17:15 - 18:00	**R. Weber**	*Stuttgart Laser Technology - From Process Development to Fundamental Research*	University of Stuttgart, IFSW, Stuttgart, Germany
18:00 - 19:00		*Individual transfer to IFSW*	
19:00 - 21:00		*Lab tour @ IFSW*	

Room 1:

10:30 - 11:00		***Coffee and Cookies***	

Visible and Ultraviolet lasers			*Chair S. Esser*
11:00 - 11:30	**G. Mennerat**	*high-performance nonlinear frequency conversion*	CEA - French Atomic Energy and Alternative Energies Commission, Gif-sur-Yvette, France
11:30 - 11:45	**D. Horain**	*High-throughput high-quality processing of CFRP by high power nanosecond UV pulses*	BLOOM LASERS, Pessac, France
11:45 - 12:00	**P. Bliškevičius**	*Ultrashort pulse processing with atypical wavelengths*	LightConversion, Vilnius, Lithuania
12:00 - 12:30	**C. Stolzenburg**	*High power UV nanosecond lasers*	TRUMPF Laser GmbH + Co. KG, Schramberg, Germany
12:30 - 14:00		***Lunch and Exhibition***	

Fibre-Optic Beam Delivery			*Chair M. Abdou Ahmed*
14:00 - 14:30	**V. Zuba**	*Application of hollow-core fibres for laser delivery and microparticle guidance*	University of Southampton, Southampton, UK
14:30 - 14:45	**T. Kühltau**	*Development of hollow-core fibers at the IFSW*	University of Stuttgart, IFSW, Stuttgart, Germany
14:45 - 15:15	**B. Chen**	*Dual-wavelength fibers for USP lasers*	University of Stuttgart, IFSW, Stuttgart, Germany
15:15 - 15:45		***Coffee and Cookies***	

Laser Process Monitoring			*Chair M. Sawannia*
15:45 - 16:15	**M. Kogel-Hollacher**	*Successful determination of the physical properties of a weld seam - how much information is buried in the sensor signals of a laser welding process?*	Precitec GmbH & Co. KG, Gaggenau, Germany
16:15 - 16:30	**J. Stollhof**	*Laser processes with process monitoring for small batch sizes – Requirements for process sensors from the perspective of a contract manufacturer*	BLS Lasertechnology GmbH, Grafenau, Germany
16:30 - 16:45	**M. Palalic**	*Vision-based Process Monitoring in Additive Manufacturing*	University of Stuttgart, Institute for Machine Tools, Stuttgart, Germany
16:45 - 17:00	**C. Franz**	*Advanced fault classification by using a multi-spectral sensor*	4D GmbH, Isernhagen, Germany

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Dipl.-Ing. Volkher Onuseit
IFSW, Universität Stuttgart

SLT 2024 Advance Program, Thursday, 06.06.2024

08:15 - 09:00 Registration and Coffee

Room 3: Plenary Session

Plenary Session - Artificial Intelligence in Production			Chair A. Michalowski
08:30 - 08:45			
08:45 - 09:00	**H. Götz**	*SLT Opening and Information*	SLT Organization, IFSW, Universität Stuttgart, Germany
09:00 - 09:45	**B. Mills**	*Intelligent Light: The Fusion of AI and Lasers*	Optoelectronics Research Centre University of Southampton , Southampton, United Kingdom
09:45 - 10:30	**C. Daniel**	*Generative AI at Bosch*	Robert Bosch GmbH , Renningen, Germany

10:30 - 11:00 *Coffee and Cookies*

Room 3:

Machine Learning in Manufacturing			Chair A. Michalowski
11:00 - 11:30	**V. Rominger**	*Artificial Intelligence in Laser Processing*	TRUMPF, Ditzingen, Germany
11:30 - 11:45	**T. Weiss**	*Modelling of the ablation behavior in the laser structuring of 1.4310 stainless steel using multiple artificial neural networks*	Institute for Machine Tools and Industrial Management (iwb), Munich, Germany
11:45 - 12:00	**N. Bär**	*AI-Driven Optimization of Laser Cutting Parameters: Automating Experimentation for Enhanced Precision*	University of Stuttgart, IFSW, Stuttgart, Germany
12:00 - 12:30	**D. Förster**	*Application of machine learning in ultrafast laser processing*	LightPulse LASER PRECISION, Weil der Stadt, Germany

12:30 - 14:00 *Lunch and Exhibition*

Laser Materials Processing of Semiconductors and Transparent Materials			Chair T. Menold
14:00 - 14:30	**M. Ametowobla**	*Silicon Processing*	Robert Bosch GmbH, Reutlingen, Germany
14:30 - 14:45	**B. Stepak**	*The edge quality of ultra-thin glass and polymers cleaved by ultrafast laser*	Fluence, Warsaw, Poland
14:45 - 15:00	**T. Schmidt**	*Energy-efficient process strategies for the production of glass components using CO2-laser technology*	Günter-Köhler-Institut für Fügetechnik und Werkstoffprüfung GmbH, Jena, Germany
15:00 - 15:30	**M. Saliba**	*Laser Processing of Perovskite a Game Changer in Solar Cell Fabrication*	University of Stuttgart, Institute for Photovoltaics, Stuttgart, Germany

15:30 - 16:00 *Coffee and Cookies*

Laser Processing with Short and Ultrashort Pulsed Lasers			Chair C. Hagenlocher
16:00 - 16:30	**A. Otto**	*Shedding light on ultra-fast processes: Multiphysical simulation of laser micro-processing*	TU Wien, Research Unit of Photonic Technologies, Wien, Austria
16:30 - 16:45	**L. Pabst**	*High rate laser polishing using a polygon scanner*	Hochschule Mittweida, Mittweida , Germany
16:45 - 17:00	**K. Cirakoglu**	*Simultaneous micromachining with beam splitting of ultrashort laser pulses at high average power for the productive fabrication of microchannels*	University of Stuttgart, IFSW, Stuttgart, Germany
17:00 - 17:30	**A. Fehrenbacher**	*High-speed cutting of thin foil materials using pulsed lasers*	TRUMPF, Schramberg, Germany
17:30 - 17:45	.	*SLT 2024 Closing Note*	University of Stuttgart, IFSW, Stuttgart, Germany

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10:30 - 11:00 *Coffee and Cookies*

Room 1:

Laser Processing with High Average Power			Chair F. Zaiß
11:00 - 11:30	**M. Rethmeier**	*Laser and Hybrid Welding with Ultra High Power Lasers*	BAM Federal Institute for Materials Research and Testing, Berlin, Germany
11:30 - 11:45	**A. Laskin**	*Crystal quartz – ideal material for multi-kW optics*	AdlOptica Optical Systems GmbH, Berlin, Germany
11:45 - 12:00	**A. Rudolf**	*Close-to-zero focus shift via closed-loop stabilization enabled by head-integrated metrology for high power laser material processing*	PRIMES GmbH, Pfungstadt, Germany
12:00 - 12:30	**S. Reich**	*Effects of a 120 kW cw laser with focus on metal perforation and steel hardening*	Fraunhofer EMI, Freiburg, Germany

12:30 - 14:00 *Lunch and Exhibition*

X-Ray Imaging of Laser Processes			Chair M. Haas
14:00 - 14:30	**K. Schricker**	*Observing keyhole behavior by means of high-speed X-ray imaging*	TU Ilmenau, Ilmenau, Germany
14:30 - 14:45	**M. Henn**	*High Speed X-Ray Imaging of Laser Percussion Drilling with Ultrashort Laser Pulses*	University of Stuttgart, IFSW, Stuttgart, Germany
14:45 - 15:00	**G. Karras**	*Pump-probe experiments in Diamond Light Source using PORTO laser system.*	Diamond Light Source, Didcot, United Kingdom
15:00 - 15:30	**C. Leung**	*Seeing inside additive manufacturing with the extremely brilliant source*	University College London, London, Great Britain

15:30 - 16:00 *Coffee and Cookies*

Novel Laser Concepts			Chair M. Abdou Ahmed
16:00 - 16:30	**J. Speiser**	*Wedged Thin-Disk Laser – a versatile concept for amplification of (ps)-laser pulses*	Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart, Germany
16:30 - 16:45	**D. Philippovskiy**	*Recent Advancements in High Power Single-Oscillator Thulium-Doped Fiber Laser Emitting in 2 µm Region*	Directed Energy Research Center, Abu-Dhabi, United Arab Emirates
16:45 - 17:00	**H. Fathi**	*450 W picoseconds compact laser system based on a Yb-doped Panda tapered double-clad fiber*	Tampere University, Tampere, Finland
17:00 - 17:30	**A. Loescher**	*kW-Flexiburst - high power versatile ultrafast laser*	University of Stuttgart, IFSW, Stuttgart, Germany
17:30 - 17:45	.	*SLT 2024 Closing Note*	University of Stuttgart, IFSW, Stuttgart, Germany

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