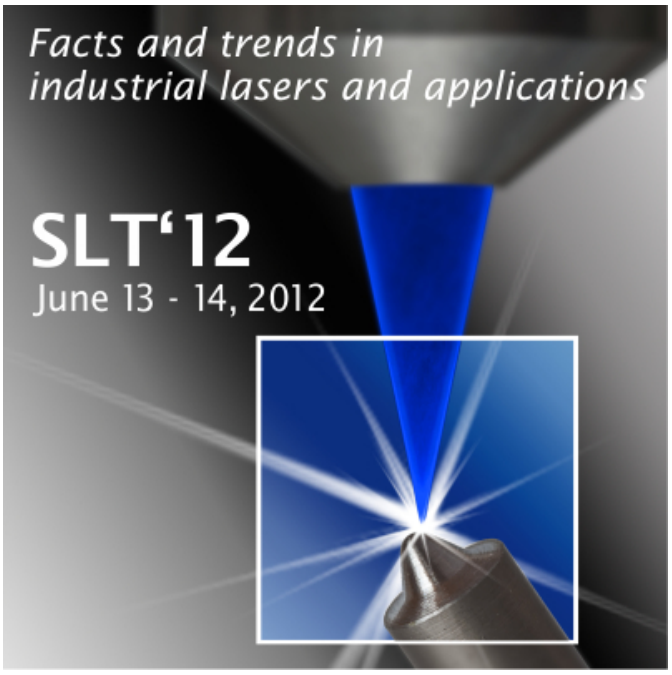

SLT Programmübersicht

Mi. 13. Juni 2012

Plenary Session	09:00	Plenary Session
Kaffeepause	10:30	Kaffeepause
Cutting	10:50	High Peak Power Lasers
Mittagessen	12:10	Mittagessen
Welding	14:00	High Peak Power Lasers
Kaffeepause	15:20	Kaffeepause
Diagnostics and Modeling	15:50	Beam Delivery
Abendempfang am IFSW	18:15	Abendempfang am IFSW

Do. 14. Juni 2012

Plenary Session	09:00	Plenary Session
Kaffeepause	10:30	Kaffeepause
CFRP Laser Processing	10:50	High Average Power Lasers
Mittagessen	12:10	Mittagessen
Micro Processing and PV Applications	14:00	High Average Power Lasers
Kaffeepause	15:20	Kaffeepause
Micro Drilling	15:50	Beam Delivery and Beam Shaping
SLT'12 closing note	17:10	SLT'12 closing note

SLT '12 Programm Mi. 13. Juni 2012

Plenary Session

Chair: Dr. R. Weber

Laser Technologies for Manufacturing of the Future
09:00 **Prof. Dr. T. Graf**
IFSW, Universität Stuttgart, Stuttgart, Germany

"A Voyage across the Nanometre Universe: Lithography, 3D Direct Laser Writing and Superresolution Microscopy"
09:30 **Dr. M. Weber**
Carl Zeiss AG, Oberkochen, Germany

Innovative Processes and Procedures for Future Light-Weight Car Bodies
10:00 **Dipl.-Ing. S. Müller**
Audi AG, Neckarsulm, Germany

Macro Laser Applications, Diagnostics and Modeling

Cutting
Chair: P. Berger

Cutting with 1 Micron Wavelength Lasers: An Intermediate Assessment of Speculations, Simulations, Diagnostics and Facts
Dr. D. Petring, Fraunhofer-Institut für Lasertechnik ILT, Aachen, Germany

Laser Cutting with Radial Polarized Laser Beam
V. Onuseit, IFSW, Universität Stuttgart, Stuttgart, Germany

Cutting of Metallic Hollow Sphere Structures
Prof. Dr. H. Riegel, FH Aalen, Aalen, Germany

Laser Safety Barriers
P. Stritt, GSaME/IFSW, Universität Stuttgart, Stuttgart, Germany

Welding
Chair: A. Heß

A Comparison of Laser Beam Welding in Vacuum with Electron Beam Welding
Dr. S. Olschok, RWTH, Aachen, Germany

Process Diagnostics when Laser Welding at Different Ambient Pressures
V. Rominger, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany

Criterion for Hot Crack Initiation During Laser Welding
P. Stritt, GSaME/IFSW, Universität Stuttgart, Stuttgart, Germany

Spatter Minimized Copper Welding through Active Process Guiding
A. Heider, IFSW, Universität Stuttgart, Stuttgart, Germany

Diagnostics and Modeling
Chair: A. Heider

A New View on the Phenomena Inside the Capillary in Laser Beam Welding
P. Berger, IFSW, Universität Stuttgart, Stuttgart, Germany

X-Ray Investigations of Thick-Plate Laser Welding
Mikko Vänskä, Lappeenranta University of Technology, Lappeenranta, Finland

Multiple Sensors for Laser Beam Welding
Dr. F. Dorsch, TRUMPF Werkzeugmaschinen GmbH + Co. KG, Ditzingen, Germany

X-Ray Videography for Investigation of Capillary and Melt Pool Dynamics
F. Abt, IFSW, Universität Stuttgart, Stuttgart, Germany

High Peak Power Laser Sources and Beam Delivery

High Peak Power Lasers
Chair: Dr. M. Abdou Ahmed

10:50 **Ultrafast Nonlinear Plasmonics**
Prof. Dr. H. Giessen, 4. Physikalisches Institut, Universität Stuttgart, Stuttgart, Germany

11:10 **Laser Microprocessing of Transparent Materials with Picosecond 532 and 1064nm Fiber Lasers**
Dr. T. Gerke, Fianium Inc., Eugene, USA

11:30 **Ultrashort Pulse Amplification in Fibers: Systems, Status and Potential**
Dr. J. Limpert, Active Fiber Systems GmbH, Jena, Germany

11:50 **Yb:CALGO for High-Power Femtosecond Laser Applications**
Dr. F. Druon, Laboratoire Charles Fabry (LCF), Institut d'Optique, Palaiseau, France

High Peak Power Lasers
Chair: B. Weichelt

14:00 **New Crystals for Ultrafast Thin-Disk Lasers**
K. Wentsch, IFSW, Universität Stuttgart, Stuttgart, Germany

14:20 **Powerful Ultrafast Disk Lasers**
Dr. O. Heckl, TRUMPF Laser GmbH + Co. KG, Ditzingen, Germany

14:40 **Sub-100 fs, Diode-Pumped Laser System Based on Yb:CALGO**
Dr. F. Kienle, High Q Laser GmbH, Rankweil, Austria

15:00 **Average Power Scaling of Ultrafast Lasers Based on the INNOSLAB Platform**
Dr. H. Hoffmann, ILT Aachen, Aachen, Germany

Beam Delivery
Chair: Dr. A. Voß

15:50 **$KTa_{1-x}Nb_xO_3$ (KTN) Crystals Revisited: "Giant" Electro-Optic Effect and Material Challenges**
Dr. D. Rytz, FEE GmbH, Idar-Oberstein, Germany

16:10 **High-Performance Laser Processing Using Fast Scanners**
Dr. C. Schiller, SCANLAB AG, Puchheim, Germany

16:30 **Diffractive Beam Shaping Optics for Efficient Micromachining**
Dr. C. Bischoff, TOPAG Lasertechnik GmbH, Darmstadt, Germany

16:50 **Sub-Wavelength Micro-Structured Planar Waveguides for Laser Beam Shaping**
Dr. M. Abdou-Ahmed, IFSW, Universität Stuttgart, Stuttgart, Germany

SLT '12 Programm Do. 14. Juni 2012

Plenary Session

Chair: Prof. Dr. T. Graf

Industrial Laser Trends – Did We Reach a Turning Point? 09:00
Dr. P. Leibinger
TRUMPF Werkzeugmaschinen GmbH + Co. KG, Ditzingen, Germany

Photovoltaics: Where is it Going? 09:30
Prof. Dr. J. Werner
IPV, Universität Stuttgart, Stuttgart, Germany

Laser Processing of CFRP 10:00
Dr. R. Weber
IFSW, Universität Stuttgart, Stuttgart, Germany

CFRP Processing and Micro Laser Applications

CFRP Laser Processing
Chair: Dr. R. Weber

Influence of Laser Processing on Carbon Fibres
T. Prieß, IFB, Universität Stuttgart, Stuttgart, Germany

Measurement of Emissions Caused by Laser Cutting of CFRP
C. Collmer, Daimler AG, Sindelfingen, Germany

Modeling of Laser Ablation of CFRP – Influence of Beam Profile
M. Hafner, IFSW, Universität Stuttgart, Stuttgart, Germany

Innovative Non-Destructive Testing Methods for Fibre-Plastic Composites
P. Menner, IKT, Universität Stuttgart, Stuttgart, Germany

Micro Processing and PV Applications
Chair: K. Löffler

In-situ Characterization of Ultrashort Pulse Laser Deep Drilling
Prof. Dr. S. Nolte, Universität Jena, Jena, Germany

Investigations of Influencing Factors on the Laser Doping Process for Solar Cells
M. Diez, Robert Bosch GmbH, Stuttgart, Germany

Scribing CIGS Solar Cells with Ultrafast Pulsed Lasers – a Comparison of Different Approaches
Dr. T. Wahl, Manz Automation AG, Reutlingen, Germany

Cutting of Transparent Hard and Brittle Materials with Picosecond Laser
Dr. B. Faißt, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany

Micro Drilling
Chair: V. Onuseit

Factors Controlling the Ablation Efficiency for Ultra-Short Pulses between 250fs and 50ps
Prof. Dr. B. Neuenschwander, Berner Fachhochschule, Burgdorf, Switzerland

Trepaning Optics for Laser Micro Machining
A. Pauli, GFH, Deggendorf, Germany

Ablation of Thin Aluminum Layers on Silicon
R. Gauch, Robert Bosch GmbH, Stuttgart, Germany

Fabrication of 25 µm Microholes in Metal by Helical Drilling with Ultrashort Pulsed Laser Radiation
A. Feuer, IFSW, Universität Stuttgart, Stuttgart, Germany

High Average Power Laser Sources and Beam Delivery

High Average Power Lasers
Chair: Dr. M. Abdou Ahmed

Diode Lasers Scaling to Near 10kW 10:50
Dr. B. Acklin, Coherent Inc., San Jose, USA

Design and Performance of kW-class OEM Fibre Lasers for Manufacturing Applications 11:10
Dr. S. Norman, SPI Lasers, Southampton, UK

Diode Laser with Fiber Laser based Beam Quality Converter 11:30
Dr. V. Krause, Laserline GmbH, Mülheim-Kärlich, Germany

Fibers for Flexible High-Power Beam Delivery 11:50
Dr. A. Voß, IFSW, Universität Stuttgart, Stuttgart, Germany

High Average Power Lasers
Chair: S. Piehler

From IR to EUV 14:00
Dr. M. von Borstel, TRUMPF Laser- und Systemtechnik GmbH, Ditzingen, Germany

Recent Progress on "kW-Class" Narrow Linewidth Fiber Lasers and Amplifiers 14:20
Dr. I. Majid, Nufern, East Granby Ct, USA

Fundamental-Mode Thin-Disk Lasers 14:40
B. Weichelt, IFSW, Universität Stuttgart, Stuttgart, Germany

Beam Shaping: Key for High-Quality Processing 15:00
Dr. P. Harten, LIMO Lissotschenko Mikrooptik GmbH, Dortmund, Germany

Beam Delivery and Beam Shaping
Chair: B. Weichelt

Thermally Optimized Optics for High-Brightness Solid-State Lasers 15:50
S. Piehler, IFSW, Universität Stuttgart, Stuttgart, Germany

Optical Systems and Elements for High-Power Lasers 16:10
Dr. P. Triebel, JENOPTIK Laser, Optik, Systeme GmbH, Jena, Germany

Independent Focus Position and Focus Diameter Control – An Optimized Laser Cutting Head for High Brightness Solid State Lasers 16:30
Dr. B. Wedel, HIGHYAG Lasertechnologie GmbH, Stahnsdorf, Germany

Delivery of 800 W of Fundamental-Mode Laser Radiation Through a 100 m Long Step-Index Multi-Mode Fiber 16:50
J. Negel, IFSW, Universität Stuttgart, Stuttgart, Germany