CONVENTION PROGRAM

Optical Technologies for Measurement and Production

LASER OPTICS BERLIN

International Trade Fair and Convention
for Optical & Laser Technologies

22–24 March 2010

INCL. SUPPORTING PROGRAM AND VISITOR INFORMATION

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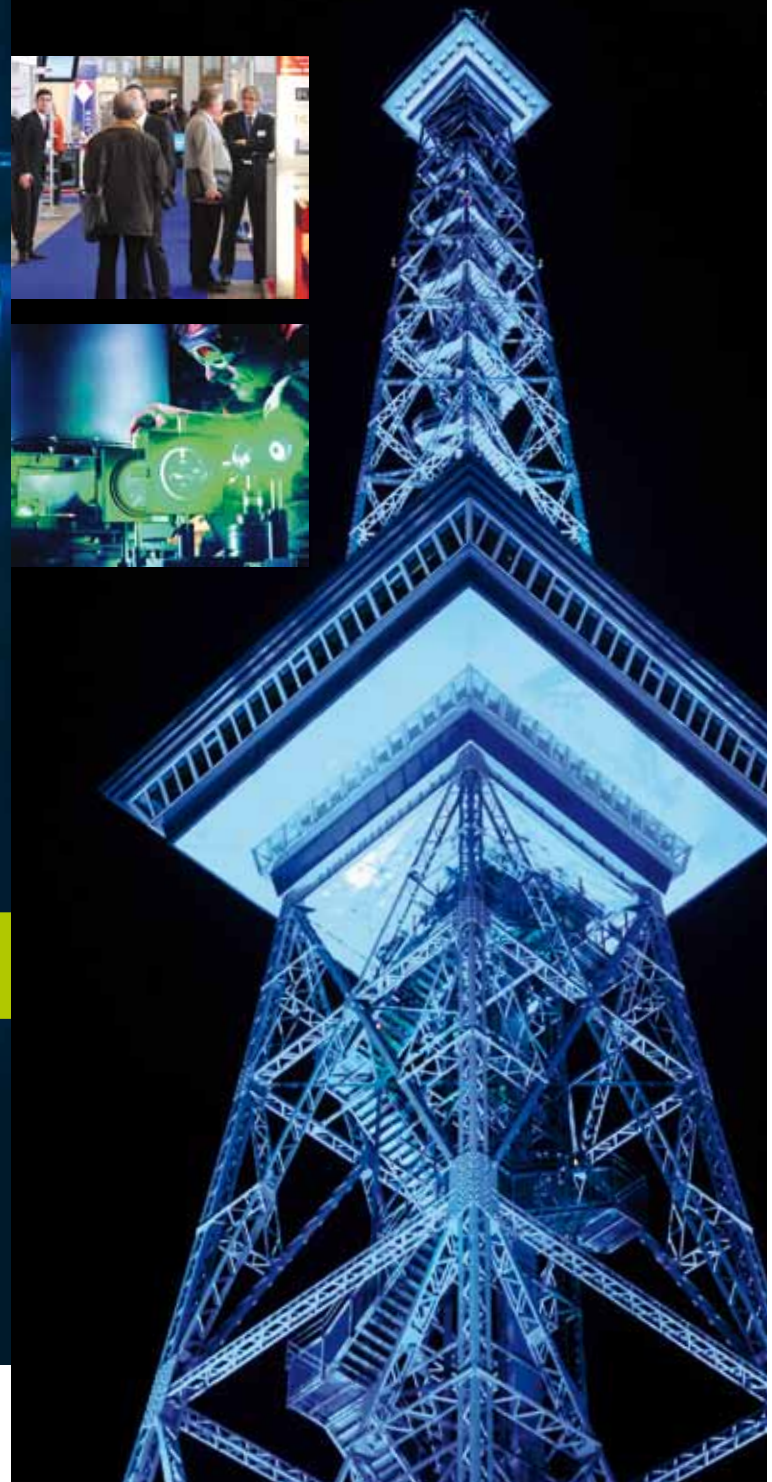
Messe Berlin



50TH ANNIVERSARY OF THE LASER – PLENARY SESSION

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Optical Society of America

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formerly AT&T Bell Laboratories
and Technical University of Munich

D. RÖSS
formerly Siemens AG,
now Heraeus Foundation, Hanau

J. FAIST
ETH Zürich

F.X. KAERTNER
Massachusetts Institute
of Technology, USA

I. BLOCH
University of Mainz
and Max-Planck Insitute for
Quantum Optics, Munich

OPENING SESSION

9:30	Welcome and Opening of Laser Optics Berlin 2010

SESSION: LASERS AND NONLINEAR OPTICS

10:00	Nonlinear path to a multikilovolt x-ray amplifier – **plenary talk** C. K. Rhodes Dept. of Physics, University of Illinois, Chicago, USA
10:50	Extreme Light Infrastructure (ELI): Physics and lasers at the ultraintense frontier G. Korn, J.P. Chambaret, D. Charambilidis, J. Collier, K. Ertel, J. Hein, S. Karsch, G. Mourou, P. Nickles, K. Osvay, B. Rus, G. Tsakiris Max-Planck-Institut für Quantenoptik, Garching, Germany; Institute de Lumiére Extreme, ENSTA, CNRS, Palaiseau Cedex, France; Central Laser Facility, Ruherford Appleton Laboratory, Chilton, U.K.; IOQ, Friedrich-Schiller Universität, Jena, Germany; Max-Born-Institut, Berlin, Germany; PALS, Institute of Physics, Prague, Czech Republic; FORTH Institute of Electronic Structure and Laser, Crete, Greece
11:10	Table-top all-diode-pumped MOPA laser for generation of high-energy, high-frequency picosecond pulse trains A. Agnesi, F. Pirzio, G. Reali, G. Piccinno INFN and Dept. Electr. Engineering, University of Pavia; Bright Solutions Srl, Cura Carpignano, Italy
11:30	Ultrafast carbon nanotube saturable absorbers for broadband mode-locking of all-solid-state lasers A. Schmidt, G. Steinmeyer, V. Petrov, U. Griebner, W. B. Cho, J. H. Yim, S. Y. Choi, S. Lee, D.-I. Yeom, K. Kim, F. Rotermund Max-Born-Institut, Berlin, Germany; Div. Energy Systems Research, Ajou University, Suwon, Korea
11:50	Acousto-optical self-referencing of frequency combs S. Koke, C. Grebing, G. Steinmeyer Max-Born-Institut, Berlin, Germany
12:10	Exploring, tailoring, and traversing the solution landscapes of two nonlinear optical processes A. C. W. van Rhijn, P. van der Walle, H. L. Offerhaus, J. L. Herek, A. Jafarpour Optical Sciences Group, Institute for Nanotechnology, University of Twente, Enschede, The Netherlands
12:30	Break

MONDAY 22 MARCH 2010

SESSION: BIOMEDICAL OPTICS AND SPECTROSCOPY

14:30	Microsystem based light sources for shifted excitation Raman difference spectroscopy (SERDS) B. Sumpf, M. Maiwald, H. Schmidt, H. D. Kronfeldt, G. Erbert Ferdinand-Braun-Institut, Berlin; Inst. für Optik und Atomare Physik, Technische Universität Berlin, Germany
14:50	Quantitative Raman measuerments in biological tussue C. Reble, I. Gersonde, S. Andree, H. J. Eichler, J. Helfmann Laser- und Medizin-Technologie GmbH (LMTB), Berlin; Inst. für Optik und Atomare Physik, Technische Universität Berlin, Germany
15:10	MEMS-based confocal laser scanning microscope for in vivo imaging J. Helfmann, R. Schütz, I. Gersonde, G. Illing LMTB GmbH Berlin, Germany
15:30	Spatially resolved reflectance for the determination of absorption and reduced scattering coefficients S. Andree, C. Reble, J. Helfmann, I. Gersonde, G. Illing LMTB GmbH, Berlin; Inst. für Optik und Atomare Physik, Technische Universität Berlin, Germany
15:50	Frequency-doamin optical tomography for computer-aided classification of rheumatoid arthritis in finger joints U. Netz, H. K. Kim, C. D. Klose, S. Blaschke, P. A. Zwaka, G. A. Müller, G. Illing, J. Beuthan, A. H. Hielscher LMTB GmbH, Berlin; AG Med. Physik und Opt. Diagnostik, Charité, Berlin, Germany; Dept. Biomedical Engineering, Columbia University, New York, USA; Abt. Radiologie, Abt. Nephrologie und Rheumatologie, Universitätsmedizin Göttingen, Germany
16:10	Break

MONDAY 22 MARCH 2010

WORKSHOP ON TERAHERTZ RESEARCH AND TECHNOLOGY Organizer OpTecBB

10:00	Engineering surface emission in THz quantum cascade lasers – **invited paper** A. Tredicucci CNFR-NEST, Pisa, Italy
10:50	Cryogen-free heterodyne receiver with quantum cascade laser and hot electron bolometric mixer operating at 2.5 THz H. Richter, S. G. Pavlov, A. D. Semenov, L. Mahler, A. Tredicucci, H. E. Beere, D. A. Ritchie, K. I'lin, M. Siegel, H.-W. Hübers DLR, Institut für Planetenforschung, Berlin, Germany; NEST CNR-INFM Pisa, Italy; Cavendish Laboratory, University of Cambridge, UK; Institut für Mikro- und Nanoelektronische Systeme, Universität Karlsruhe; Institut für Optik und Atomare Physik, Technische Universität Berlin, Germany
11:10	Development of low-threshold THz quantum-cascade lasers with high output power M. Wienold, L. Schrottke, M. Giehler, R. Hey, H. T. Grahn Paul-Drude-Institut, Berlin, Germany
11:30	Diode laser based THz homodyne system for cw and quasi time domain spectroscopy C. Brenner, M. R. Hofmann, M. Scheller, M. K. Shakfa, M. Koch, A. Klehr, G. Erbert Ruhr Universität Bochum; TU Braunschweig; Ferdinand-Braun-Institut, Berlin, Germany
11:50	Fibre coupled cw THz systems with photodiode based emitters and photoconductove coherent receivers B. Sartorius, D. Stanze, M. Schlak, H. G. Bach, D. Schmidt, H. Roehle, M. Schell Fraunhofer Heinrich-Hertz-Institut, Berlin, Germany
12:10	Synthetic aperture THz imaging systems V. Krozer, T. Löffler Goethe Universität Frankfurt/M.; Synview GmbH, Frankfurt
12:30	Break

14:00	THz Time domain spectroscopy and its applications – **invited paper** X.C. Zhang Rensselaer Polytechnical Institute, USA
14:50	Rapid-scanning time-domain THz spectroscopy with a femtosecond semiconductor disk laser P. Klopp, U. Griebner, R. Gebs, G. Klatt, T. Dekorsy, A. Bartels Max-Born-Institut, Berlin; Dept. Physics, University of Konstanz, Germany
15:10	Traceable THz radiometry at PTB A. Steiger, B. Gutschwager, C. Monte, R. Müller, J. Hollandt Physikalisch-Technische Bundesanstalt, Berlin, Germany
15:30	Terahertz spectroscopy of chemicals and biochemicals in the liquid phase E. Bründermann Physikalische Chemie II, Ruhr-Universität Bochum, Germany
15:50	THz time domain spectroscopy -perspectives for stand off inspection of liquids L. S. von Chrzanowski, J. Beckmann, U. Ewert, U. Schade Bundesanstalt für Materialforschung und -prüfung, Berlin; Helmholtz Zentrum für Materialien und Energie, Berlin. Germany
16:10	Two-color two-dimensional terahertz spectroscopy on double quantum wells W. Kuehn, K. Reimann, M. Woerner, T. Elsaesser, R. Hey Max-Born-Institut, Berlin; Paul-Drude-Institut, Berlin
16:30	THz spectroscopy of shift currents: a new tool for symmetry investigations of semiconductor quantum wells S. Priyadarshi, K. Pierz, A. M. Racu, U. Siegner, M. Bieler Physikalisch-Technische Bundesanstalt, Braunschweig, Germany

MONDAY 22 MARCH 2010

POSTER SESSION

16:30-18:30 POSTER SESSION CONVENTION

P1	Laser machining utilizing new concepts in trepanning optics D. Ashkenasi, N. Mueller, T. Kaszmeikat, G. Illing LMTB GmbH, Berlin, Germany
P2	Universal optical space sensor-radiator M. Abele, L. Osipova, A. Treijs, J. Vjaters University of Latvia, HEE Photonic Labs Ltd. Latvia
P3	The scaling problem for EUV - experimental nanolithographer O. B. Danilov Institute for Laser Physics, Vavilov State Optical Institute, St. Petersburg, Russia
P4	Laser hardening of metals A. F. Kornev, V. A. Serebryakov Institute for Laser Physics, Vavilov State Optical Institute, St. Petersburg, Russia
P5	InP transistors in transferred substrate technology with f_t and f_{max} over 400 GHz T. Kraemer, V. Krozer, O. Krüger, G. Traenkle Ferdinand-Braun-Institut, Berlin, Germany
P6	Ultrafast laser pulse compressor with two dispersive prisms B. Müller Helmut-Schmidt-University, Hamburg, Germany
P7	3D-monitoring of fluid concentrations after micro mixing with pulsed laser Raman spectroscopy G. Rinke, K. Roetmann, V. Beushausen Institute for Micro Process Engineering (IMVT), Karlsruhe Institute of Technology, Laser Laboratorium, Göttingen, Germany
P8	Compact narrow linewidth laser sources for coherent optical communication S. Spießberger, M. Schiemangk, A. Wicht, G. Erbert Ferdinand-Braun-Institut, Berlin, Germany
P9	EUV optical system for experimental nanolithographer A. P. Zhevlakov Institute for Laser Physics, Vavilov State Optical Institute, St. Petersburg, Russia

MONDAY 22 MARCH 2010

17:00-18:30 POSTER SESSION TERAHERTZ WORKSHOP

T1	THz radiation at the metrology light source A. Hoehl, R. Klein, R. Müller, A. Serdyukov, G. Ulm, J. Feikes, M. von Hartrott, G. Wüstefeld Physikalisch-Technische Bundesanstalt, Berlin; Helmholtz-Zentrum Berlin, Germany
T2	THz spectral imaging techniques in non-destructive testing: topography and computed tomography B. Ewers, A. Kupsch, A. Lange, M. P. Hentschel Bundesanstalt für Materialforschung und -prüfung, Berlin, Germany
T3	Channel measurements for THz communications S. Priebe, C. Jastrow, T. Kleine-Ostmann, T. Schrader Physikalisch-Technische Bundesanstalt, Braunschweig, Germany
T4	A compact, continuous-wave THz source based on a quantum-cascade laser H. Richter, M. Greiner-Bär, S. G. Pavlov, A. D. Semenov, M. Wienold, L. Schrottke, M. Giehler, R. Hey, H. T. Grahn, H.-W. Hübers DLR, Institut für Planetenforschung, Berlin; Paul-Drude-Institut, Berlin; Institut für Optik und Atomare Physik; Technische Universität Berlin, Germany
T5	Coherent THz radiation from electron storage rings G. Wüstefeld Helmholtz Zentrum Berlin, Germany

PLENARY SESSION: THE 50TH ANNIVERSARY OF THE LASER

9:00 Welcome
T. Elsaesser
Max-Born-Institut, Berlin, Germany

9:05 The laser and the rebirth of optical science and technology
C. Dainty, President Elect of the Optical Society of America
University of Galway, Ireland

9:25 The start of the laser in 1960
W. Kaiser
Physik Department E11, Technische Universität München, Germany

9:55 Forschungsklima aus Sicht eines Industriephysikers
D. Röss
Wilhelm und Else Heraeus Stiftung, Bad Honnef, Germany

10:20 Terahertz quantum cascade lasers antennas and circuits
J. Faist
Institute for Quantum Electronics, ETH Zurich, Switzerland

11:05 Break

11:30 Attosecond Photonics
F. X. Kaertner
Dept. Electrical Engineering & Computer Science, Massachusetts Institute of Technology, Cambridge, MA, USA

12:15 Exploring Quantum Matter with the Coldest Objects in the Universe
I. Bloch
Max-Planck-Institut für Quantenoptik, Garching, Germany

13:00 Break

PLENARY SESSION: THE 50TH ANNIVERSARY OF THE LASER
Limited number of free student tickets available!
Please contact baysal@messe-berlin.de

SESSION: SEMICONDUCTOR LASERS

14:15 Compact Watt class visible laser modules
C. Fiebig, G. Blume, A. Sahm, M. Uebernickel, K. Paschke, G. Erbert
Ferdinand-Braun-Institut, Berlin, Germany

14:35 Green picosecond pulses generated in a MgO:$LiNbO_3$ ridge waveguide crystal by frequency doubling of a Q-switched DBR tapered diode laser
D. Jedrzejczyk, K. Paschke, A. Klehr, K. H. Hasler, R. Güther, G. Erbert
Ferdinand-Braun-Institut, Berlin, Germany

14:55 Defect imaging in laser diodes by mapping their near-infrared emission
J. W. Tomm, M. Ziegler
Max-Born-Institut, Berlin, Germany

15:15 Catastrophic optical mirror damage in high power diode lasers – **invited paper**
M. Ziegler, J. W. Tomm
Max-Born-Institut, Berlin, Germany

15:45 Break

SESSION: MATERIALS PROCESSING

16:00 Fabrication of DOEs and their application for parallel laser processing of functional surfaces
J. Bekesi, J. Kaakkunen, J. Ihlemann, P. Simon
Laser Laboratorium Göttingen, Germany; Dept Physics and Mathematics, University of Joensuu, Finland

16:20 Femtosecond laser-induced nanostructures in fused silica fibers
S. K. Das, M. Tischer, U. Neumann, R. Grunwald
Max-Born-Institut, Berlin; U. Neumann Fibers&Technology GmbH, Berlin, Germany

16:40 Using cellular neural network cameras to control highly dynamics laser processes
P. Strohm, A. Blug, D. Carl, H. Höfler
Fraunhofer Institut für Physikalische Meßtechnik (IPM), Freiburg, Germany

17:00 **Get together "THE 50TH ANNIVERSARY OF THE LASER"**
supported by Wista Management GmbH
(exhibitors, speakers and delegates only)

SYMPOSIUM: ULTRASHORT PULSE PROPAGATION

9:30 Welcome
R. Grunwald, F. Wyrowski
Max-Born-Institut, Berlin; University of Jena, Germany

9:35 Ultrashort pulse delivery with engineered photonic crystal fibers – **invited paper**
R. Iliew
Institute of Condensed Matter Theory and Solid State Optics, University of Jena, Germany

10:05 Propagation of ultrashort pulses through linear optical systems
F. Wyrowski, C. Hellmann, H. Schweitzer
University of Jena; LightTrans GmbH, Jena, Germany

10:25 Focusing ultrashort laser pulses into dielectric media
U. Fuchs, U. D. Zeitner, A. Tünnermann
Fraunhofer Institut für Angewandte Optik und Feinmechanik, Jena, Germany

10:45 Plasma induced pulse break-up in filamentary self-compression
A. Demircan, C. Brée, G. Steinmeyer
Weierstraß-Institut and Max-Born-Institut, Berlin, Germany

11:05 Break

11:30 Simulation of pulsed Bessel-like beams
S. Huferath-von Luepke, V. Kebbel, M. Bock, R. Grunwald
Bremen Institute of Applied Beam Technology, bwm GmbH, Bremen; Max-Born-Institut, Berlin, Germany

11:50 Programmable supercollimated ultrashort pulses
M. Bock, S. K. Das, A. Richter, J. T. Preusse, R. Grunwald
Max-Born-Institut, Berlin, Germany

12:10 Ultrafast micro-Bessel beams for laser processing
F. Courvoisier, M. Jacquot, M. K. Bhuyan, P.-A. Lacourt, J. M. Dudley
FEMTO-ST Institute, Dept. Optics, Université de Franche-Comté, Besancon, France

12:30 A few-cycle multi-10 TW OPCPA system and its applications – **invited paper**
L. Veisz, A. Buck, K. Schmid, C. Sears, J. Mikhailova, D. Herrmann, R. Tautz, F. Krausz
Max-Planck-Institut für Quantenoptik, Garching; Dept. Physik, LMU München, Germany

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LASER OPTICS BERLIN – THE TRADE FAIR AT THE HEART OF A GROWING MARKET

As a platform for the introduction of forward-looking ideas, technical trends and world-wide innovation, the event offers trade visitors from R&D and production a comprehensive insight into the innovative strength of optical technologies. Due to the tight interaction of scientific institutes and production, as well as first-class conditions for production and research, the Berlin/Brandenburg region possesses an excellent international net-work, making Laser Optics Berlin an essential meeting place for international experts.

SUBJECTS
Laser, Optics, Optoelectronics, Optical Sensors & Detectors, Optical Transmission Technology, Manufacturing Technology, Optical technologies for Photovoltaics, Micro System Technology,

SPECIAL APPLICATIONS
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SUPPORTING PROGRAM 2010

MONDAY 22 MARCH

Focus Workshop: "Micro System Technology", Organizer ZEMI Berlin

Educational Forum – "School Day"

TUESDAY 23 MARCH

Workshop: "Laser Technology in the production Industry", Organizer Photon Laser Engineering (extra charge)

Workshop: "Semiconductor Industry", Organizer Spectaris

Educational Forum – "Students Day"

WEDNESDAY 24 MARCH

ITG Workshop: "Photonische Aufbau- und Verbindungstechnik"

OpTecBB Networking Day

Educational Forum – "Experts Day"

Career Workshop,
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Convention (3 days)	180,00 EUR
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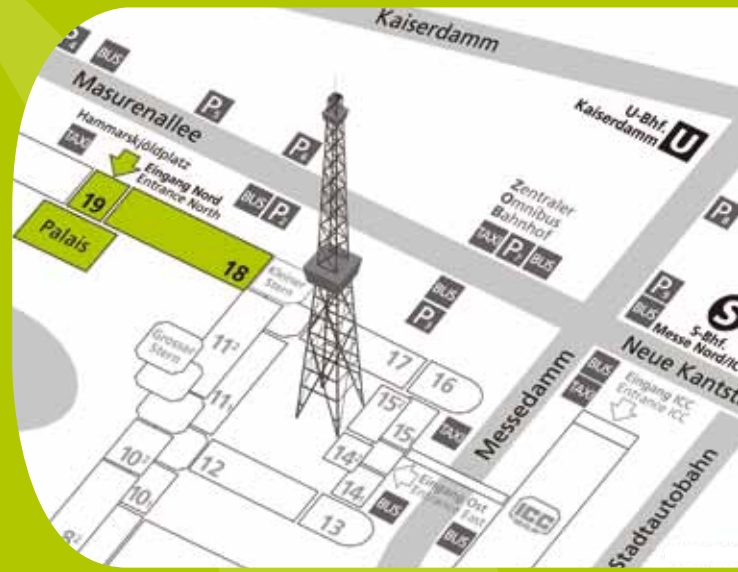

DATE
Trade Fair and Convention:
22-24 March 2010, 10–17 hrs

VENUE
Berlin Exhibition Grounds
Trade Fair: Hall 18
Convention:
Palais am Funkturm

ENTRANCE NORTH
Hall 19, Masurenallee

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