

PROCEEDINGS OF SPIE

Solid State Lasers XXI: Technology and Devices

W. Andrew Clarkson

Ramesh K. Shori

Editors

22–25 January 2012

San Francisco, California, United States

Sponsored and Published by

SPIE

Volume 8235

Proceedings of SPIE, 0277-786X, v. 8235

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

The papers included in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. The papers published in these proceedings reflect the work and thoughts of the authors and are published herein as submitted. The publisher is not responsible for the validity of the information or for any outcomes resulting from reliance thereon.

Please use the following format to cite material from this book:

Author(s), "Title of Paper," in *Solid State Lasers XXI: Technology and Devices*, edited by W. Andrew Clarkson, Ramesh K. Shori, Proceedings of SPIE Vol. 8235 (SPIE, Bellingham, WA, 2012)
Article CID Number.

ISSN 0277-786X
ISBN 9780819488787

Published by

SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445
SPIE.org

Copyright © 2012, Society of Photo-Optical Instrumentation Engineers

Copying of material in this book for internal or personal use, or for the internal or personal use of specific clients, beyond the fair use provisions granted by the U.S. Copyright Law is authorized by SPIE subject to payment of copying fees. The Transactional Reporting Service base fee for this volume is \$18.00 per article (or portion thereof), which should be paid directly to the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923. Payment may also be made electronically through CCC Online at copyright.com. Other copying for republication, resale, advertising or promotion, or any form of systematic or multiple reproduction of any material in this book is prohibited except with permission in writing from the publisher. The CCC fee code is 0277-786X/12/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.



SPIEDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon as they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four digits correspond to the SPIE volume number.
- The last two digits indicate publication order within the volume using a Base 36 numbering system employing both numerals and letters. These two-number sets start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B ... 0Z, followed by 10-1Z, 20-2Z, etc.

The CID number appears on each page of the manuscript. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID number.

Contents

xi Conference Committee

SESSION 1 MID-IR LASERS

- 8235 02 **High-efficiency diode-pumped Er:YLF laser with multi-wavelength generation** [8235-04]
M. Inochkin, L. Khloponin, V. Kramov, UNP Laser Ctr. ITMO (Russian Federation); G. Altshuler, A. Erofeev, S. Wilson, Palomar Medical Technologies, Inc. (United States); F. Feldchein, Dental Photonics, Inc. (United States)
- 8235 03 **Mid-IR laser oscillation via energy transfer in the Co:Fe:ZnS/Se co-doped crystals** [8235-06]
J. Peppers, N. Myoung, V. V. Fedorov, S. B. Mirov, The Univ. of Alabama at Birmingham (United States)
- 8235 04 **3.0- μ m wavelength-tunable compact light source with 805/1064-nm differential frequency generation using intracavity photon reuse and spectrum shaping techniques** [8235-07]
N. Yamamoto, K. Akahane, T. Kawanishi, National Institute of Information and Communications Technology (Japan); H. Sotobayashi, Aoyama Gakuin Univ. (Japan)
- 8235 05 **Fabrication and optical properties of single-crystal YAG fiber optics** [8235-05]
B. T. Laustsen, J. A. Harrington, Rutgers, The State Univ. of New Jersey (United States)

SESSION 2 CERAMICS LASER MATERIALS I

- 8235 08 **Ceramic materials for high power solid state lasers (Invited Paper)** [8235-75]
W. Kim, C. Baker, G. Villalobos, L. B. Shaw, Naval Research Lab. (United States); B. Sadowski, Sotera Defense Solutions (United States); J. Frantz, Naval Research Lab. (United States); I. D. Aggarwal, Univ. Research Foundation (United States); J. S. Sanghera, Naval Research Lab. (United States)

SESSION 3 CERAMICS LASER MATERIALS II

- 8235 0E **Refractive indices and thermo-optic coefficients of Erbium-doped Yttria** [8235-02]
N. D. Haynes, D. E. Zelmon, Air Force Research Lab. (United States); R. Shori, Naval Air Warfare Ctr. (United States)
- 8235 0F **Spectroscopic properties of Er-sesquioxides** [8235-03]
S. Sharma, Univ. of California, Los Angeles (United States); R. Shori, Univ. of California, Los Angeles (United States) and Naval Air Warfare Ctr. Weapons Div. (United States); J. K. Miller, Naval Air Warfare Ctr. Weapons Div. (United States)

SESSION 4 PULSED LASERS I

- 8235 0G **1kHz repetition rate, mode-controlled, passively Q-switched Nd:YLF laser operating at 1053 nm** [8235-09]
A. M. Deana, Univ. Nove de Julho (Brazil) and Instituto de Pesquisas Energéticas e Nucleares (Brazil); E. C. Sousa, I. M. Ranieri, S. L. Baldochi, N. U. Wetter, Instituto de Pesquisas Energéticas e Nucleares (Brazil)
- 8235 0I **1.34 μm Nd:YVO₄ laser mode-locked by a single-walled carbon nanotube saturable absorber** [8235-12]
H. Iliev, I. Buchvarov, Sofia Univ. (Bulgaria); S. Y. Choi, K. Kim, F. Rotermund, Ajou Univ. (Korea, Republic of); V. Petrov, Max-Born-Institute for Nonlinear Optics and Ultrafast Spectroscopy (Germany)
- 8235 0J **Performance of a 100J cryogenically cooled multi-slab amplifier with respect to the pump beam parameters and geometry** [8235-13]
M. Divoky, M. Sawicka, A. Lucianetti, J. Novak, T. Mocek, B. Rus, Institute of Physics of the ASCR, v.v.i. (Czech Republic)
- 8235 0K **Comparative design study of 100 J cryogenically cooled Yb:YAG multi-slab amplifiers operating at 10 Hz** [8235-14]
P. Sikocinski, M. Divoky, M. Sawicka, A. Lucianetti, J. Novak, B. Rus, T. Mocek, Institute of Physics of the ASCR, v.v.i. (Czech Republic)

SESSION 5 PULSED LASERS II

- 8235 0M **High power VCSEL array pumped Q-switched Nd:YAG lasers** [8235-16]
Y. Xiong, R. Van Leeuwen, L. S. Watkins, J.-F. Seurin, G. Xu, A. Miglo, Q. Wang, C. Ghosh, Princeton Optronics, Inc. (United States)
- 8235 0O **Compact VCSEL pumped Q-switched Nd:YAG lasers** [8235-18]
B. Cole, A. Hays, C. McIntosh, J. Nettleton, L. Goldberg, U.S. Army Communications-Electronics, Development and Engineering Ctr. (United States)

SESSION 6 DISK LASERS

- 8235 0Q **Yb:CaGdAlO₄ thin-disk** [8235-20]
S. Ricaud, Lab. Charles Fabry, CNRS, Univ. Paris Sud 11 (France) and Amplitude Systèmes (France); A. Jaffres, P. Loiseau, B. Viana, Lab. de Chimie de la Matière Condensée de Paris, CNRS, Univ. Pierre et Marie Curie (France); B. Weichelt, M. Abdou-Ahmed, A. Voss, T. Graf, Univ. Stuttgart (Germany); D. Rytz, FEE GmbH (Germany); M. Delaigue, E. Mottay, Amplitude Systèmes (France); P. Georges, F. Druon, Lab. Charles Fabry, CNRS, Univ. Paris Sud 11 (France)
- 8235 0R **Design and modeling of kW-class thin-disk lasers** [8235-21]
M. Smrz, P. Severova, T. Mocek, Institute of Physics of the ASCR, v.v.i. (Czech Republic)

- 8235 OS **Yb:YAG thin-disk laser performance at room and cryogenic temperatures** [8235-77]
N. Vretenar, Univ. of New Mexico (United States); T. Carson, T. C. Newell, Air Force Research Lab. (United States); T. Lucas, Boeing LTS Inc. (United States); W. P. Latham, Air Force Research Lab. (United States); P. Peterson, Boeing LTS Inc. (United States)
- 8235 OT **Initial testing of edge-pumped Yb:YAG disk laser with multi-passed extraction** [8235-23]
J. Vetrovec, D. A. Copeland, A. S. Litt, Aqwest, LLC (United States); D. Du, General Atomics Aeronautical Systems, Inc. (United States)
- 8235 OU **Gain tailoring model and improved optical extraction in CW edge-pumped disk amplifiers** [8235-24]
D. A. Copeland, J. Vetrovec, Aqwest, LLC (United States)

SESSION 7 HIGH-POWER FIBER AND DISK LASERS: JOINT SESSION WITH CONFERENCE 8237

- 8235 OV **High-power disk and fiber lasers: a performance comparison (Invited Paper)** [8235-25]
S. Ruppik, F. Becker, F.-P. Grundmann, W. Rath, U. Hefter, ROFIN-SINAR Laser GmbH (Germany)
- 8235 OW **High-power disk lasers: advances and applications** [8235-26]
D. Havrilla, T. Ryba, TRUMPF Inc. (United States); M. Holzer, TRUMPF Laser und Systemtechnik GmbH (Germany)
- 8235 OX **Ultrafast disk lasers and amplifiers** [8235-27]
D. H. Sutter, J. Kleinbauer, D. Bauer, M. Wolf, C. Tan, R. Gebs, A. Budnicki, P. Wagenblast, TRUMPF Laser GmbH + Co. KG (Germany); S. Weiler, TRUMPF Inc. (United States)

SESSION 8 ULTRAFAST LASERS

- 8235 OY **A multi-wavelength, variable-pulse-width, diode-pumped laser system** [8235-28]
A. V. Okishev, C. Dorner, Univ. of Rochester (United States); Y. Fisher, M. Pavia, Sydor Instruments, LLC (United States)
- 8235 OZ **SESAMs for high-power femtosecond modelocking: power scaling of an Yb:LuScO₃ thin disk laser to 23 W and 235 fs** [8235-29]
C. J. Saraceno, O. H. Heckl, C. R. E. Baer, M. Golling, ETH Zurich (Switzerland); K. Beil, Univ. Hamburg (Germany); C. Kränkel, ETH Zurich (Switzerland) and Univ. Hamburg (Germany); K. Petermann, Univ. Hamburg (Germany); T. Südmeyer, ETH Zurich (Switzerland); G. Huber, Univ. Hamburg (Germany); U. Keller, ETH Zurich (Switzerland)
- 8235 10 **Regenerative amplifier with pulse-on-demand** [8235-30]
C. Holtz, J. Meier, J. Aus der Au, High Q Laser Innovation GmbH (Austria); M. Lederer, European XFEL GmbH (Germany)
- 8235 11 **Sub-100 fs pulses with 12.5-W from Yb:CALGO based oscillators** [8235-31]
A. Greborio, Univ. degli Studi di Pavia (Italy); A. Guandalini, J. Aus der Au, High Q Laser GmbH (Austria)
- 8235 12 **Cryo-Yb:YAG lasers for next-generation photoinjector applications** [8235-32]
K. F. Wall, Q-Peak, Inc. (United States); D. E. Miller, T. Y. Fan, MIT Lincoln Lab. (United States)

- 8235 13 **High-energy 1 Hz titanium sapphire amplifier for PetaWatt class lasers** [8235-33]
F. Lureau, S. Laux, O. Casagrande, C. Radier, O. Chalus, F. Caradec, C. Simon-Boisson,
Thales Optronique S.A. (France)

SESSION 9 EYE SAFE LASERS

- 8235 14 **Er-doped Tellurite glasses for planar waveguide power amplifier with extended gain bandwidth** [8235-34]
J. I. Mackenzie, G. S. Murugan, Univ. of Southampton (United Kingdom); T. Suzuki, Y. Ohishi,
Toyota Technological Institute (Japan); A. W. Yu, J. B. Abshire, NASA Goddard Space Flight
Ctr. (United States)
- 8235 15 **Optimized heat extraction geometry for resonantly diode pumped Er³⁺:YAG lasers** [8235-35]
L. Galecki, Institut Franco-Allemand de Recherches de Saint-Louis (France); W. Zendzian,
Institute of Optoelectronics (Poland); M. Eichhorn, Institut Franco-Allemand de Recherches
de Saint-Louis (France)
- 8235 16 **Resonant diode-pumping of Er:YAG single crystal fiber operating at 1617 nm** [8235-36]
A. Aubourg, I. Martial, Lab. Charles Fabry de l'Institut d'Optique, CNRS, Univ. Paris-Sud 11
(France) and Fibercryst SAS (France); J. Didierjean, Fibercryst SAS (France); F. Balembois,
P. Georges, Lab. Charles Fabry de l'Institut d'Optique, CNRS, Univ. Paris-Sud 11 (France)
- 8235 17 **Ho:KRE(WO₄)₂, RE=(Y, Gd, Lu), CW laser performance near 2.1 micron under resonant pumping by a Tm:KL_u(WO₄)₂ laser** [8235-37]
V. Jambunathan, Univ. Rovira i Virgili (Spain); X. Mateos, Univ. Rovira i Virgili (Spain) and
Max-Born-Institute for Nonlinear Optics and Ultrafast Spectroscopy (Germany); M. C. Pujol,
J. J. Carvajal, F. Díaz, M. Aguiló, Univ. Rovira i Virgili (Spain); U. Griebner, V. Petrov,
Max-Born-Institute for Nonlinear Optics and Ultrafast Spectroscopy (Germany)
- 8235 18 **Crystalline fiber Ho³⁺:YAG laser resonantly pumped by high-spectral-brightness laser diodes** [8235-38]
A. Berrou, T. Ibach, M. Schellhorn, Institut Franco-Allemand de Recherches de Saint-Louis
(France); W. Hu, R. Lammert, L. Vaissié, J. Ungar, Laser Operations LLC / QPC Lasers Division
(United States); M. Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis
(France)
- 8235 19 **A coherent laser Doppler wind profiler for the active control of wind turbines** [8235-39]
L. Shinohara, S. Bogatscher, N. Heussner, H. Umesh-Babu, Karlsruhe Institute of Technology
(Germany); M. Brunet, McGill Univ. (Canada); W. Stork, Karlsruhe Institute of Technology
(Germany)

SESSION 10 VISIBLE AND UV LASERS I

- 8235 1A **Potential of the Eu:LYB crystal as a laser material for DPSS lasers emitting at 613 nm [8235-40]**
R. Cattoor, I. Manek-Hönniger, J.-C. Delagnes, B. Bousquet, Lab. Ondes et Matière d'Aquitaine, CNRS, Univ. Bordeaux 1 (France); Y. Petit, Lab. Ondes et Matière d'Aquitaine, CNRS, Univ. Bordeaux 1 (France) and Institut de Chimie de la Matière Condensée de Bordeaux, CNRS, Univ. Bordeaux 1 (France); V. Jubera, A. Fargues, P. Veber, M. Velazquez, A. Garcia, Institut de Chimie de la Matière Condensée de Bordeaux, CNRS, Univ. Bordeaux 1 (France); P. Mounaix, L. Canioni, Lab. Ondes et Matière d'Aquitaine, CNRS, Univ. Bordeaux 1 (France)
- 8235 1C **High average power sub-picosecond pulse generation at 515 nm by extracavity frequency doubling of a mode-locked Innoslab MOPA [8235-42]**
B. Gronloh, P. Russbueldt, Fraunhofer-Institut für Lasertechnik (Germany); W. Schneider, Max-Planck-Institut für Quantenoptik (Germany); B. Jungbluth, H.-D. Hoffmann, Fraunhofer-Institut für Lasertechnik (Germany)
- 8235 1D **Development and optimization of single-mode green solid state microchip laser [8235-43]**
J. Z. Sotor, G. Dudzik, A. J. Antończak, K. M. Abramski, Wroclaw Univ. of Technology (Poland)
- 8235 1E **Stability-enhanced, high-average power green lasers for precision semiconductor processing [8235-44]**
N. Hay, I. Baker, Y. Guo, S. Bashford, Y. Kwon, Powerlase Photonics Ltd. (United Kingdom)

SESSION 11 VISIBLE AND UV LASERS II: JOINT SESSION WITH CONFERENCE 8240

- 8235 1F **Frequency-doubled diode laser for direct pumping of Ti:sapphire lasers [8235-45]**
A. Müller, O. B. Jensen, Technical Univ. of Denmark (Denmark); A. Unterhuber, T. Le, A. Stingl, Femtolasers Produktions GmbH (Austria); K.-H. Hasler, B. Sumpf, G. Erbert, Ferdinand-Braun-Institut (Germany); P. E. Andersen, P. M. Petersen, Technical Univ. of Denmark (Denmark)
- 8235 1G **Mode hop free tunable blue laser [8235-46]**
K. Li, Univ. of Glamorgan (United Kingdom); H. Wang, Xi'an Univ. of Arts and Science (China); J. Huang, R. Chaney, N. J. Copner, Univ. of Glamorgan (United Kingdom)

SESSION 12 NOVEL CONCEPTS FOR SSL

- 8235 1I **Passive alignment and soldering technique for optical components [8235-48]**
H. Faidel, B. Gronloh, M. Winzen, E. Liermann, D. Esser, V. Morasch, J. Luttmann, M. Leers, D. Hoffmann, Fraunhofer-Institut für Lasertechnik (Germany)
- 8235 1M **Generating multiple wavelengths, simultaneously, in a Ti:sapphire ring laser with a ramp-hold-fire seeding technique [8235-52]**
T. Z. Moore, F. S. Anderson, Southwest Research Institute (United States)

- 8235 1N **Voltage tunable polymer laser device** [8235-53]
S. Döring, Fraunhofer Institute for Applied Polymer Research (Germany); M. Kollosche, Univ. Potsdam (Germany); T. Rabe, Technical Univ. Braunschweig (Germany); G. Kofod, Univ. Potsdam (Germany); J. Stumpe, Fraunhofer Institute for Applied Polymer Research (Germany)

POSTER SESSION

- 8235 1O **Temperature effects on the operation and input/output wavelengths of a high-power fiber-coupled diode end pumped Nd:YVO₄ laser** [8235-54]
A. F. El-Sherif, Military Technical College (Egypt)
- 8235 1P **Comparison between two active media Nd: YAG and Nd: YVO₄ rods inside a cavity for producing a high-power 808nm diode end-pumping laser system** [8235-55]
A. F. El-Sherif, K. Hussein, M. F. Hassan, Military Technical College (Egypt); M. M. Talat, Military Technical Research Ctr. (Egypt)
- 8235 1Q **Amplified spontaneous emission in thin-disk lasers** [8235-56]
H. Su, X.-J. Wang, Institute of Applied Physics and Computational Mathematics (China)
- 8235 1R **Influence of Ce³⁺-ions in Pr,Ce:YAlO₃ crystal on spectroscopic and laser characteristics** [8235-57]
M. Fibrich, H. Jelíneková, J. Šulc, Czech Technical Univ. in Prague (Czech Republic); K. Nejezchleb, V. Škoda, Crytur Ltd. (Czech Republic)
- 8235 1T **10 km dynamic laser oscillation with a coupled cavity assisted by four wave mixing** [8235-59]
F. F. Wu, MetroLaser, Inc. (United States)
- 8235 1U **Passive Q-switching of a diode-pumped (Tm,Yb):KLu(WO₄)₂ laser near 2-μm with a Cr²⁺:ZnS saturable absorber** [8235-60]
M. Segura, X. Mateos, Univ. Rovira i Virgili (Spain); A. Tyazhev, Max-Born-Institute for Nonlinear Optics and Ultrafast Spectroscopy (Germany); M. C. Pujol, J. J. Carvajal, M. Aguiló, F. Diaz, Univ. Rovira i Virgili (Spain); U. Griebner, V. Petrov, Max-Born-Institute for Nonlinear Optics and Ultrafast Spectroscopy (Germany)
- 8235 1W **High-energy, picosecond regenerative thin-disk amplifier at 1 kHz** [8235-62]
M. Chyla, M. Smrz, T. Mocek, Institute of Physics of the ASCR, v.v.i. (Czech Republic)
- 8235 1X **Tuning possibility of dysprosium-doped lead thiogallate laser** [8235-63]
M. E. Doroshenko, General Physics Institute (Russian Federation); H. Jelíneková, J. Šulc, M. Jelínek, Czech Technical Univ. in Prague (Czech Republic); T. T. Basiev, General Physics Institute (Russian Federation); V. V. Badikov, D. V. Badikov, Kuban State Univ. (Russian Federation)
- 8235 1Y **Compact pulsed high-energy Er:glass laser** [8235-64]
P. Wan, J. Liu, PolarOnyx, Inc. (United States)

- 8235 17 **Influence of undoped YAG cap on diode-pumped composite YAG/Er:Yb:glass laser** [8235-65]
J. Šulc, H. Jelínková, Czech Technical Univ. in Prague (Czech Republic); K. Nejezchleb, V. Škoda, Crytur, Ltd. (Czech Republic)
- 8235 20 **Spectroscopic characterization of Ti³⁺:AgGaS₂ and Fe²⁺:MgAl₂O₄ crystals for mid-IR laser applications** [8235-66]
R. K. Sackovich, The Univ. of Alabama at Birmingham (United States) and Univ. of Kansas (United States); J. M. Peppers, The Univ. of Alabama at Birmingham (United States); N. Myoung, Samsung SMD (Korea, Republic of); V. V. Badikov, Kuban State Univ. (Russian Federation); V. V. Fedorov, S. B. Mirov, The Univ. of Alabama at Birmingham (United States)
- 8235 21 **Mid-IR volumetric Bragg grating based on LiF color center crystals** [8235-67]
A. Arumugam, A. V. Fedorov, D. V. Martyshkin, V. V. Fedorov, D. J. Hilton, S. B. Mirov, The Univ. of Alabama at Birmingham (United States)
- 8235 22 **Yb:YAG/Cr:YAG composite crystal with external and microchip resonator** [8235-68]
J. Šulc, T. Koutný, H. Jelínková, Czech Technical Univ. in Prague (Czech Republic); K. Nejezchleb, V. Škoda, Crytur, Ltd. (Czech Republic)
- 8235 23 **A highly efficient DPSS mode-locked Nd:YLF single-mode laser** [8235-69]
F. F. Wu, MetroLaser, Inc. (United States)
- 8235 24 **DPSS laser beam quality optimization through pump current tuning** [8235-70]
R. Omohundro, Newport Spectra-Physics (United States); A. Callen, SLAC National Accelerator Lab. (United States); S. Sukuta, San Jose City College (United States)
- 8235 25 **Observation of laser formation inside a laser cavity containing a phase conjugate mirror** [8235-71]
F. F. Wu, MetroLaser, Inc. (United States)

Author Index

Conference Committee

Symposium Chairs

Friedhelm Dorsch, TRUMPF Werkzeugmaschinen GmbH + Co. KG
(Germany)
Alberto Piqué, Naval Research Laboratory (United States)

Symposium Cochairs

Bo Gu, IPG Photonics Corporation (China)
Andreas Tünnermann, Friedrich-Schiller-Universität Jena (Germany)

Program Track Chair

Gregory J. Quarles, BE Meyers & Company Inc. (United States)

Conference Chairs

W. Andrew Clarkson, University of Southampton (United Kingdom)
Ramesh K. Shori, Naval Air Warfare Center Weapons Division (United States)

Program Committee

Santanu Basu, Sparkle Optics Corporation (United States)
Marc Eichhorn, Institut Franco-Allemand de Recherches de Saint-Louis (France)
Adolf Giesen, Deutsches Zentrum für Luft- und Raumfahrt e.V.
(Germany)
Norman Hodgson, Coherent, Inc. (United States)
Hans-Dieter Hoffmann, Fraunhofer-Institut für Lasertechnik (Germany)
Helena Jelinková, Czech Technical University in Prague (Czech Republic)
Ursula Keller, ETH Zurich (Switzerland)
Jacob I. Mackenzie, University of Southampton (United Kingdom)
Narasimha S. Prasad, NASA Langley Research Center (United States)
Martin C. Richardson, CREOL, The College of Optics and Photonics,
University of Central Florida (United States)
Wolf R. Seelert, Coherent Lubeck GmbH (Germany)
Akira Shirakawa, The University of Electro-Communications (Japan)
David E. Spence, Spectra-Physics®, a Newport Corporation Brand
(United States)
David H. Titterton, Defence Science and Technology Laboratory
(United Kingdom)

Session Chairs

- 1 Mid-IR Lasers
Ramesh Shori, Naval Air Warfare Center Weapons Division (United States)
- 2 Ceramics Laser Materials I
Ramesh Shori, Naval Air Warfare Center Weapons Division (United States)
- 3 Ceramics Laser Materials II
Narasimha S. Prasad, NASA Langley Research Center (United States)
- 4 Pulsed Lasers I
Helena Jelinková, Czech Technical University in Prague (Czech Republic)
- 5 Pulsed Lasers II
Helena Jelinková, Czech Technical University in Prague (Czech Republic)
- 6 Disk Lasers
Santanu Basu, Sparkle Optics Corporation (United States)
- 7 High-Power Fiber and Disk Lasers: Joint Session with Conference 8237
Norman Hodgson, Coherent, Inc. (United States)
Dahv A. Kliner, JDSU (United States)
- 8 Ultrafast Lasers
Martin C. Richardson, CREOL, The College of Optics and Photonics, University of Central Florida (United States)
- 9 Eye Safe Lasers
Jacob I. Mackenzie, University of Southampton (United Kingdom)
- 10 Visible and UV Lasers I
W. Andrew Clarkson, University of Southampton (United Kingdom)
- 11 Visible and UV Lasers II: Joint Session with Conference 8240
W. Andrew Clarkson, University of Southampton (United Kingdom)
Andrei V. Shchegrov, KLA-Tencor Corporation (United States)
- 12 Novel Concepts for SSL
David H. Titterton, Defence Science and Technology Laboratory (United Kingdom)