PROCEEDINGS OF SPIE

Short-pulse High-energy Lasers and Ultrafast Optical Technologies

Pavel Bakule Constantin L. Haefner Editors

1–3 April 2019 Prague, Czech Republic

Sponsored by SPIE

Cooperating Organisations ELI Beamlines (Czech Republic) Laserlab Europe European Optical Society HiLASE (Czech Republic)

Published by SPIE

Volume 11034

Proceedings of SPIE 0277-786X, V. 11034

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

The papers 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. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

The papers 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 these proceedings:

Author(s), "Title of Paper," in Short-pulse High-energy Lasers and Ultrafast Optical Technologies, edited by Pavel Bakule, Constantin L. Haefner, Proceedings of SPIE Vol. 11034 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

ISSN: 0277-786X ISSN: 1996-756X (electronic)

ISBN: 9781510627345 ISBN: 9781510627352 (electronic)

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 © 2019, 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/19/\$18.00.

Printed in the United States of America by Curran Associates, Inc., under license from SPIE.

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



Paper Numbering: Proceedings of SPIE follow an e-First publication model. A unique citation identifier (CID) number is assigned to each article at the time of 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 and print versions of the publication. SPIE uses a seven-digit CID article numbering system structured as follows:

• The first five 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.

Contents

- v Authors
- vii Conference Committee

LARGE-SCALE PW LASERS

11034 07 Laser technology development for high peak power lasers achieving kilowatt average power and beyond (Invited Paper) [11034-5]

DISPERSION MANAGEMENT IN SHORT PULSE LASERS

11034 0C Spectral shaping of a 5 Hz, multi-joule OPCPA frontend for a 10 PW laser system [11034-10]

TEMPORAL CONTRAST IN HIGH-INTENSITY LASERS

- 11034 0D Spatiotemporal analysis of plasma mirrors for high-contrast ultra-intense laser pulses [11034-11]
- 11034 OF Temporal pre-pulse generation in high-intensity CPA lasers from imperfect domain orientation in anisotropic crystals [11034-13]
- 11034 0G **Passive laser pulse intensity stabilization through a balance of self-phase modulation and dispersion** [11034-14]
- 11034 0H On target contrast ratio study for petawatt level femtosecond laser system [11034-15]

OPCPA-BASED SHORT PULSE LASER SYSTEMS

- 11034 01 High-repetition rate optical parametric chirped pulse amplification system for attosecond science experiments (Invited Paper) [11034-16]
- 11034 0M The construction of Allegra kilohertz femtosecond laser system at ELI-Beamlines [11034-20]

TECHNOLOGY AND MATERIALS FOR PW LASERS

11034 0N High-power ultrafast industrial thin-disk lasers (Invited Paper) [11034-21]

11034 OP The beam dump materials and their LIDT measurements for PW/multi-PW laser systems [11034-24]

POSTER SESSION

11034 OQ	Peak power measurement of nanoscale short-pulse laser [11034-25]
11034 OT	Single-shot surface ablation and transient reflectivity changes of optical glasses induced by 34 fs laser pulses [11034-29]
11034 OU	High order harmonics in modulated slab waveguide [11034-30]