

PROCEEDINGS OF SPIE

Solid State Lasers XXX: Technology and Devices

W. Andrew Clarkson

Ramesh K. Shori

Editors

6–11 March 2021

Online Only, United States

Sponsored and Published by
SPIE

Volume 11664

Proceedings of SPIE 0277-786X, V. 11664

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

Solid State Lasers XXX: Technology and Devices, edited by W. Andrew Clarkson,
Ramesh K. Shori, Proc. of SPIE Vol. 11664, 1166401 · © 2021 SPIE
CCC code: 0277-786X/21/\$21 · doi: 10.1117/12.2596777

Proc. of SPIE Vol. 11664 1166401-1

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 SPIDigitalLibrary.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 *Solid State Lasers XXX: Technology and Devices*, edited by W. Andrew Clarkson, Ramesh K. Shori, Proceedings of SPIE Vol. 11664 (SPIE, Bellingham, WA, 2021) Seven-digit Article CID Number.

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

ISBN: 9781510641631
ISBN: 9781510641648 (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 © 2021, 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 \$21.00 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/21/\$21.00.

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.

**SPIE. DIGITAL
LIBRARY**

SPIDigitalLibrary.org

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

EYE-SAFE AND MID-IR LASERS

- 11664 06 **Eye-safe laser illuminators for long-reach Lidar and gated imaging in harsh weather conditions** [11664-1]
- 11664 07 **2 μm Tm:YAG laser with pulse-on-demand operation** [11664-2]
- 11664 0A **Coupled cavity 13mJ mid-IR pulsed source using a passively Q-switched Nd:YAG laser and KTA OPO followed by a CSP OPA** [11664-5]
- 11664 0B **Passively Q-switched Tm:YLF laser generating 15 mJ, 500 kW peak power pulses** [11664-6]
- 11664 0F **State-of-the-art single crystal sapphire and YAG fibers for passive mid-IR delivery systems (Invited Paper)** [11664-10]

UV-VISIBLE LASERS

- 11664 0I **Progress in green disk laser development for industrial high power applications** [11664-13]
- 11664 0J **50W 343nm frequency-tripled operation of a high-repetition-rate, novel architecture, femtosecond thin slab amplifier** [11664-14]

PULSED AND ULTRAFAST LASERS

- 11664 0L **Life-time evaluation of monolithic >MW peak power Nd:YAG/Cr:YAG ceramic microchip lasers** [11664-16]
- 11664 0M **High-power high-brightness disk lasers for advanced applications (Invited Paper)** [11664-17]
- 11664 0N **VIS-to-NIR multiple output sub-TW class modular laser based on OPCPA and TSRCPA** [11664-18]
- 11664 0T **Multi-TW, sub 33-fs fiber laser seeded Ti:Sa amplifier** [11664-24]

NOVEL LASER CONCEPTS

- 11664 0Y **1.064 μm CW stable single frequency emission and noise reduction based on a monolithic cavity** [11664-29]

POSTER SESSION

- 11664 10 **Low temperature gain-switched operation of non-cubic Cr²⁺, Fe²⁺:Zn_{1-x}Mg_xSe (x ≈ 0.2 and x ≈ 0.3) single crystals in mid-infrared under different excitation wavelengths [11664-31]**
- 11664 11 **GALACTIC: high performance alexandrite crystals and coatings for high power space applications [11664-32]**
- 11664 13 **Holmium doping concentration influence on Ho:YAG crystal spectroscopic properties [11664-34]**
- 11664 14 **Tm:YAP microchip laser under 1700 nm and 790 nm diode pumping [11664-35]**
- 11664 15 **Modeling of thermal lensing in a microchip Nd:YAG laser for high power operation [11664-36]**
- 11664 16 **Efficient multi-watt CW Yb:CaF₂ laser [11664-37]**
- 11664 17 **A simple approach to estimate thermal lensing in Nd-ion doped vanadate laser crystals [11664-38]**
- 11664 19 **Conical refraction Nd:CALGO laser with dual-wavelength output [11664-40]**
- 11664 1A **Diode-pumped Yb:YAP laser with dual-wavelength output [11664-41]**
- 11664 1B **Dual-wavelength Nd:YVO laser with two-crystal geometry [11664-42]**