PROCEEDINGS OF SPIE

Laser Beam Shaping XX

Angela Dudley Alexander V. Laskin Editors

24 August – 4 September 2020 Online Only, United States

Sponsored and Published by SPIE

Volume 11486

Proceedings of SPIE 0277-786X, V. 11486

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 Laser Beam Shaping XX, edited by Angela Dudley, Alexander V. Laskin, Proceedings of SPIE Vol. 11486 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510637788

ISBN: 9781510637795 (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 © 2020, 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/20/\$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.



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

VORTEX, VECTOR & NON-DIFFRACTING BEAMS 11486 02 Efficient generation of vector beams (Invited Paper) [11486-1] 11486 03 Partially coherent non-canonical vortex beams [11486-2] 11486 04 Generating variable Bessel beam profiles with a transmission grating [11486-3] 11486 05 Reflective spiral phase plate for generating ultrashort optical vortices [11486-4] BEAM-SHAPING TECHNIQUES, MEASUREMENTS & APPLICATIONS II 11486 08 Efficient beam multiplexing and improving efficiency of a spatial light modulator using an iterative algorithm [11486-7] Polarization reconstruction with a digital micro-mirror device [11486-8] 11486 09 11486 0A String of data comparison through Laguerre-Gaussian modes [11486-9] 11486 OB Acousto-optic spatial light modulator (SLM) based on KYW crystal [11486-10] 11486 0C Two-axis electrowetting liquid lens for beam steering [11486-11] HIGH-POWER & MATERIALS PROCESSING I 11486 0D A novel design for beamforming the Breakthrough Starshot laser array (Invited Paper) [11486-12] **POSTER SESSION** 11486 OJ A novel method for generating axial cosine structured light using spatial light modulator [11486-18] 11486 OK Beam transformation device using total internal reflection [11486-19] 11486 OL Inner product of arbitrary scalar optical fields [11486-20]