

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 24 No. 37

Adaptive Optics and Wavefront Control for Biological Systems IX

Thomas G. Bifano

Na Ji

Lei Tian

Editors

29–30 January 2023

San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 12388

Proceedings of SPIE, 1605-7422, V. 12388

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 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 *Adaptive Optics and Wavefront Control for Biological Systems IX*, edited by Thomas G. Bifano, Na Ji, Lei Tian, Proc. of SPIE 12388, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1 605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510658813

ISBN: 9781510658820 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2023 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center 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.

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: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE 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 *Conference Committee*

ADVANCES IN ADAPTIVE SCATTERING COMPENSATION I

- 12388 02 **Performance metrics and active temperature control of spatial light modulators** [12388-1]
- 12388 03 **3D imaging in two photon microscopy using deformable lenses** [12388-2]
- 12388 04 **Light sheet fluorescence microscopy with sensor-based adaptive optics and a confocal guide star** [12388-3]
- 12388 05 **Large FoV correction using adaptive lenses and deconvolution** [12388-5]
- 12388 06 **Simultaneous control of 3D volume speckle field and 3D holography through biological tissue** [12388-7]

COMPUTATIONAL IMAGING IN SCATTERING MEDIA I

- 12388 08 **EDoF-Miniscopes: a computational miniscopes for extended depth-of-field neural imaging** [12388-13]
- 12388 09 **Enhancing speckle statistics for imaging inside scattering tissue** [12388-14]
- 12388 0A **Navigating stable light fields through moving complex scattering media** [12388-37]

IMAGING THROUGH FIBERS I

- 12388 0B **Imaging through specialty optical fibers** [12388-17]
- 12388 0C **Neural-network-based multimode fiber imaging and position sensing under thermal perturbations** [12388-18]
- 12388 0D **Beam shaping with multimode fibre based on real-valued intensity transmission matrix for endoscopic applications** [12388-19]

IMAGING THROUGH FIBERS II

12388 OE **New ways to look through multimode optical fibres (Invited Paper)** [12388-21]

COMPUTATIONAL IMAGING IN SCATTERING MEDIA II

12388 OF **Rapid fluorescent wavefront shaping using incoherent power iterations** [12388-27]

12388 OG **Acquiring the phase function of volumetric scattering materials using speckle correlation**
[12388-28]

POSTER SESSION

12388 OH **Deep self-supervised learning for computational adaptive optics in widefield microscopy**
[12388-34]