

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 26 No. 34

Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXXII

Thomas G. Brown

Tony Wilson

Laura Waller

Editors

29–30 January 2025

San Francisco, California, United States

Sponsored and Published by

SPIE

Volume 13325

Proceedings of SPIE 0277-786X, V. 13325

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 *Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XXXII*, edited by Thomas G. Brown, Tony Wilson, Laura Waller, Proc. of SPIE 13325, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510683983

ISBN: 9781510683990 (electronic)

Published by

SPIE

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

Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2025 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*

INSTRUMENTATION AND METHODS I

- 13325 02 **Spectral Fourier ptychography using a filter array** [13325-1]
- 13325 03 **Lock-in amplitude-phase correlations in coherent Raman microscopy: application to lithium ores** [13325-2]
- 13325 04 **Tomographic molecular imaging via deep ultraviolet (UV) microscopy** [13325-3]
- 13325 05 **Multipitch miniature GRIN lens for image relay** [13325-4]

EXTENDED DEPTH-OF-FOCUS AND LIGHT-SHEET MICROSCOPY

- 13325 06 **Extended depth of field in confocal microscopy using a tunable acoustic gradient-index lens** [13325-16]

INNOVATIONS IN MICROSCOPE DESIGN

- 13325 07 **Interference confocal reflectance microscopy for collagen fibril diameter measurement** [13325-20]
- 13325 08 **High-resolution fluorescence lifetime imaging microscopy at an affordable price** [13325-21]
- 13325 09 **Single-shot 3D optical microscope with nanometer longitudinal resolution based on a Linnik interferometer** [13325-23]

NEW COMPUTATIONAL MODELS

- 13325 0A **Combining machine learning and Fourier optics for fluorescence microscopy aberration correction** [13325-24]
- 13325 0B **Integration of the plug and play image reconstruction method with a novel tunable structured illumination microscope** [13325-25]

POSTER SESSION

13325 0C **Using a plain glass to produce a super resolution image for the microscopy photography**
[13325-9]