

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 24 No. 38

Quantitative Phase Imaging IX

Yang Liu
YongKeun Park
Editors

28–30 January 2023
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 12389

Proceedings of SPIE, 1605-7422, V. 12389

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 *Quantitative Phase Imaging IX*, edited by Yang Liu, YongKeun Park, Proc. of SPIE 12389, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1 605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510658837

ISBN: 9781510658844 (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

vii *Conference Committee*

MEMORIAL SESSION FOR GABI POPESCU

12389 02 **Toward the specificity in QPI 3D tomographic cell flow cytometry holography: recent achievements and perspectives in biomedical sciences** [12389-72]

QPI ALGORITHM I

12389 03 **Deep learning-based neuron segmentation in quantitative phase images trained on procedurally generated data** [12389-9]

QPI ALGORITHM II

12389 04 **Image quality enhancement for ultra-thin lensless multi-core fiber phase endoscopes** [12389-12]

QPI ALGORITHM III

12389 05 **Pixel super-resolution phase retrieval algorithms for digital holography (Invited Paper)** [12389-13]

QPI METHODOLOGIES I

12389 06 **Single capture quantitative phase imaging with tomographic sectioning** [12389-20]

12389 07 **Quantitative phase imaging supported by Raman micro-spectroscopy for identifying and quantifying changes in myeloid cells treated with proteasome inhibitor** [12389-22]

QPI METHODOLOGIES II

12389 08 **Multiscale and multipurpose phantoms for 2D/3D quantitative phase imaging** [12389-24]

12389 09 **Quantitative oblique back-illumination microscopy with enhanced nuclear phase contrast using acetic acid** [12389-25]

QPI ALGORITHM IV

- 12389 0A **Concurrent execution of phase compensation and automatic focusing procedures for telecentric off-axis digital holographic microscopy** [12389-29]
- 12389 0B **Overview of the automatic reconstruction method for quantitative phase imaging using a digital holographic microscope operating in non-telecentric regime** [12389-30]

QPI METHODOLOGIES III

- 12389 0C **High-throughput quantitative phase imaging via compressive phase retrieval** [12389-34]

QPI OF CELLS AND TISSUES I

- 12389 0D **Label-free perioperative monitoring of monocytes and lymphocytes utilizing quantitative phase imaging with digital holographic microscopy** [12389-39]
- 12389 0E **Holographic molecular binding assays (Invited Paper)** [12389-73]
- 12389 0F **Digital holographic microscopy for label-free in vitro cytotoxicity testing of polymeric nanocarriers: an interlaboratory comparison** [12389-40]

QPI OF CELLS AND TISSUES II

- 12389 0G **Quantitative phase imaging of sickle cell disease effects on mouse brain vasculature using quantitative oblique back-illumination microscopy** [12389-43]

POSTER SESSION

- 12389 0H **High-resolution label-free cell imaging with angular information encoded dynamic speckle illumination** [12389-44]
- 12389 0I **Orthogonality of Zernike modes in phase profiles estimated using Zonal wavefront sensor and transport of intensity phase retrieval method** [12389-45]
- 12389 0J **Study on pre-filtering requirements of Hilbert transform method for optical phase retrieval** [12389-57]
- 12389 0K **Defining phase spatial resolution in quantitative phase imaging** [12389-58]

- 12389 0L **Effect of partial spatial coherence of light on quantitative phase microscopy of biological samples: improved spatial phase sensitivity, space-bandwidth product, and high accuracy in phase measurement** [12389-63]
- 12389 0M **Spatial resolution and QPI performance of digital lensless holographic microscopy with holographic optical elements** [12389-66]
- 12389 0N **Understanding vascular and cellular activity during cerebral stroke in zebrafish model using swept-source optical coherence tomography/angiography (SSOCT/A)** [12389-68]