PROGRESS IN BIOMEDICAL OPTICS AND IMAGING Vol. 24 No. 27

# Dynamics and Fluctuations in Biomedical Photonics XX

Valery V. Tuchin Martin J. Leahy Ruikang K. Wang Zeev Zalevsky Editors

29–30 January 2023 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 12378

Proceedings of SPIE, 1605-7422, V. 12378

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 *Dynamics and Fluctuations in Biomedical Photonics XX*, edited by Valery V. Tuchin, Martin J. Leahy, Ruikang K. Wang, Zeev Zalevsky, Proc. of SPIE 12378, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422 ISSN: 2410-9045 (electronic)

ISBN: 9781510658615 ISBN: 9781510658622 (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.



**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

#### **OPTICAL COHERENCE TOMOGRAPHY**

12378 02 In vivo dynamic quantitative imaging of cilia metachronal wave in mouse fallopian tube with optical coherence tomography [12378-4]

#### LASER SPECKLE TECHNIQUES

- 12378 03 Impact of logarithmic and linear spaced camera exposure durations for multi-exposure speckle imaging (Invited Paper) [12378-6]
- 12378 04 Modelling movement artefacts in handheld laser speckle contrast imaging (Invited Paper) [12378-8]

#### SPECTROSCOPY AND APPLICATIONS

12378 05 **Dynamics of human cerebral fluids measured by near-infrared spectroscopy (Invited Paper)** [12378-9]

#### **OPTICAL CLEARING**

- 12378 06 Clinical MRI contrast agent improves fluorescent imaging of red fluorescent protein expression in-vivo due to the effect of tissue optical clearing (Invited Paper) [12378-13]
- 12378 07 Characterization of human skin optical clearing based on confocal optical coherence tomography imaging and optical clearing agents for clinical use (Invited Paper) [12378-15]

#### FUNCTIONAL IMAGING AND EVALUATIONS I

12378 08 Optical coherence angiography to assess the dose-effect relationship of prenatal alcohol exposure on fetal brain vasculature (Invited Paper) [12378-18]

#### FUNCTIONAL IMAGING AND EVALUATIONS II

- 12378 09 Quantitative OCT angiography toward 4D blood flow analysis in embryonic cardiovascular system (Invited Paper) [12378-21]
- 12378 0A An experimental study of the photoplethysmography waveform analysis on different vessel wall thickness [12378-24]
- 12378 OB Functional imaging of olfactory bulb and somatosensory cortex in mice using small-animal blood flow imaging platform [12378-35]

### POSTER SESSION

12378 0C Evaluating the efficacy of different data processing methods in diagnosing precancerous skin conditions in a preclinical in-vivo model using bimodal spectroscopy [12378-26]