

Dynamics and Fluctuations in Biomedical Photonics XVI

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

2–3 February 2019
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 10877

Proceedings of SPIE, 1605-7422, V. 10877

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 *Dynamics and Fluctuations in Biomedical Photonics XVI*, edited by Valery V. Tuchin, Martin J. Leahy, Ruikang K. Wang, Proceedings of SPIE Vol. 10877 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

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

ISBN: 9781510623965
ISBN: 9781510623972 (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 © 2019, 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 \$18.00 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 1605-7422/19/\$18.00.

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.

SPIE. DIGITAL LIBRARY

SPIDigitalLibrary.org

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

v	<i>Authors</i>
vii	<i>Conference Committee</i>

KEYNOTE SESSION

10877 02	Near-infrared oligonucleotide duplex sensors for imaging rapidly activated transcription factors in vitro and in situ (Keynote Paper) [10877-17]
----------	---

SPECKLE TECHNOLOGIES I

10877 05	Ellipticity imaging for visualizing and quantifying long and short range correlations in laser speckle data II: phantom and animal studies [10877-3]
----------	---

SPECKLE TECHNOLOGIES II

10877 07	Computational speckle contrast optical tomography (Invited Paper) [10877-5]
10877 08	Novel wearable VCSEL-based sensors for multipoint measurements of blood perfusion [10877-6]

SPECKLE TECHNOLOGIES III

10877 0B	Monitor biological activities in seed germination by biospeckle optical coherence tomography [10877-9]
----------	---

TISSUE AND CELL DYNAMICS

10877 0F	Dynamic macroscopic in vivo FRET for the quantitative monitoring of targeted receptor engagement [10877-13]
10877 0H	A physiologically based framework for the simulation of skin tanning dynamics [10877-15]

FUNCTIONAL IMAGING AND SPECTROSCOPY I

- 10877 OJ **Medical diagnosis using NIR and THz tissue imaging and machine learning methods (Invited Paper)** [10877-18]
- 10877 OK **Optical fine-needle aspiration biopsy in a rat model** [10877-19]
- 10877 OL **Heart-rate modulation of non-vascularized epidermis optical attenuation coefficient** [10877-20]

FUNCTIONAL IMAGING AND SPECTROSCOPY II

- 10877 OP **Optimized 3DISCO for imaging of heme-rich tissues by decolorization** [10877-37]

CLINICAL IMAGING AND EVALUATION

- 10877 OR **Quantitative detection and comparison of liver tissues using label-free Mueller matrix microscope** [10877-26]
- 10877 OU **Obtaining anisotropy orientation information of turbid media using Mueller matrix derived parameters** [10877-29]

POSTER SESSION

- 10877 OX **Exogenous agent diffusivity in tissues as a biomarker of diabetes mellitus pathology** [10877-31]
- 10877 OY **Phototoxicity and luminescence of the upconversion nanoparticles embedded in the cells** [10877-32]
- 10877 OZ **Speckle-contrast imaging of pathological tissue microhemodynamics at optical clearing** [10877-33]
- 10877 10 **Recognizing human movements by processing EEG-signals using multiresolution analysis** [10877-34]
- 10877 11 **Entrainment between the dynamics of cerebral and peripheral blood flow characterized by wavelet coherence** [10877-35]
- 10877 17 **Near-infrared imaging of vasomotor response in hand for estimation of core temperature** [10877-42]