

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol.19 No. 27

Dynamics and Fluctuations in Biomedical Photonics XV

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

28–29 January 2018
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 10493

Proceedings of SPIE 1605-7422, V. 10493

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 XV*, edited by Valery V. Tuchin, Kirill V. Larin, Martin J. Leahy, Ruikang K. Wang, Proceedings of SPIE Vol. 10493 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 1996-756X (electronic)

ISBN: 9781510614710

ISBN: 9781510614727 (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 © 2018, 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 0277-786X/18/\$18.00.

Printed in the United States of America Vm7 i ffUb '5gg: WJUH'g' bW'zi bXYf 'JW bgY 'Zca 'GD-9.

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

- vii *Authors*
- ix *Conference Committee*
- xiii *Introduction*

SPECKLE TECHNOLOGIES

- 10493 03 **Laser speckle imaging of brain blood flow through a transparent nanocrystalline yttria-stabilized-zirconia cranial implant** [10493-2]
- 10493 04 **Biodynamic imaging of therapeutic efficacy for canine B-cell lymphoma: preclinical trial results** [10493-3]
- 10493 05 **Poincaré descriptors of long and short-range correlations in the spatial and temporal fluctuations of coherently scattered light** [10493-4]

FUNCTIONAL IMAGING AND SPECTROSCOPY I

- 10493 0C **Functional optical coherence tomography for live dynamic analysis of mouse embryonic cardiogenesis (Invited Paper)** [10493-11]
- 10493 0D **Optical coherence tomography angiography and cutaneous wound healing** [10493-12]
- 10493 0G **Heart rate sensitive optical coherence angiography** [10493-70]

CEREBRAL HEMO- LYMPHO- AND GLYMPHATIC DYNAMICS

- 10493 0I **Long-term in vivo monitoring of injury induced brain regeneration of the adult zebrafish by using spectral domain optical coherence tomography** [10493-17]

CLINICAL IMAGING AND EVALUATION

- 10493 0O **Quantitative detection of breast ductal carcinoma tissues at different progression stages using Mueller matrix microscope** [10493-23]
- 10493 0P **In-vivo assessment of microvascular functional dynamics by combination of cmOCT and wavelet transform** [10493-24]

FUNCTIONAL IMAGING AND SPECTROSCOPY II

- 10493 0U **A cost function approach for the analysis of time-resolved functional near-infrared spectroscopy (TR fNIRS) signals** [10493-29]

OPTICAL CLEARING AND BIOMECHANICS

- 10493 0X **The microstructural variation during tissue optical clearing by Mueller matrix polarimetry** [10493-32]
- 10493 0Y **DAS: a simple, efficient, scalable and Dil-compatible optical clearing method for intact systems** [10493-33]

POSTER SESSION

- 10493 11 **Control of epileptic seizures in WAG/Rij rats by means of brain-computer interface** [10493-34]
- 10493 14 **Characterization of vascular dynamics based on experimental recordings with extreme data loss** [10493-37]
- 10493 15 **Detection of EEG-patterns associated with real and imaginary movements using detrended fluctuation analysis** [10493-38]
- 10493 17 **Nonlinear dynamics and coherent resonance in a network of coupled neural-like oscillators** [10493-40]
- 10493 19 **The study of human higher mental functions as they relate to neurophysiological processes and personal characteristics** [10493-42]
- 10493 1B **Brain-computer interface for alertness estimation and improving** [10493-48]
- 10493 1C **Nonlinear correlation method for the separation of couplings in EEG experiments with neural ensembles** [10493-49]
- 10493 1D **Effect of filtration of signals of brain activity on quality of recognition of brain activity patterns using artificial intelligence methods** [10493-50]
- 10493 1F **Multi-color backscattering Mueller matrix imaging on thick fresh tissues and on living nude mice skin** [10493-52]
- 10493 1G **Analysis of bistable perception based on MEG data** [10493-53]
- 10493 1H **Use of parallel computing for analyzing big data in EEG studies of ambiguous perception** [10493-54]
- 10493 1I **Study of the interactions in neural ensemble of the brain using wavelet analysis** [10493-55]

- 10493 1K **Effect of luminescence transport through adipose tissue on measurement of tissue temperature by using ZnCdS nanothermometers** [10493-57]
- 10493 1L **Fibre optic probe for fluorescence diagnostics with blood influence compensation** [10493-58]
- 10493 1O **Monitoring skin microvascular dysfunction of type 1 diabetic mice using in vivo skin optical clearing** [10493-61]
- 10493 1Q **Identification of the patterns of brain activity during the imagination of movements using an artificial neural network** [10493-63]
- 10493 1R **Development and validation of factor analysis for dynamic in-vivo imaging data sets** [10493-64]
- 10493 1S **High speed spatially resolved diffuse imaging for jet injection depth estimation** [10493-66]
- 10493 1T **Laser-assisted nanoceramics reinforced polymer scaffolds for tissue engineering: additional heating and stem cells behavior** [10493-68]