PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10051

, "Front Matter: Volume 10051," Proc. SPIE 10051, Neural Imaging and Sensing, 1005101 (16 February 2017); doi: 10.1117/12.2270045

SPIE.

Event: SPIE BiOS, 2017, San Francisco, California, United States

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 18 No. 15

Neural Imaging and Sensing

Qingming Luo

Jun Ding

Editors

30–31 January 2017

San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 10051

Proceedings of SPIE, 1605-7422, V. 10051

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Neural Imaging and Sensing, edited by Qingming Luo, Jun Ding, Proc. of SPIE Vol. 10051,
1005101 · © 2017 SPIE · CCC code: 1605-7422/17/\$18 · doi: 10.1117/12.2270045

Proc. of SPIE Vol. 10051 1005101-1

The papers included 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. The papers published in these proceedings 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 *Neural Imaging and Sensing*, edited by Qingming Luo, Jun Ding, Proceedings of SPIE Vol. 10051 (SPIE, Bellingham, WA, 2017) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510605435

ISBN: 9781510605442 (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 © 2017, 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 7422/17/\$18.00.

Printed in the United States of America.

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, with papers published first online and then in print. Papers are published as they are submitted and meet publication criteria. A unique citation identifier (CID) number is assigned to each article at the time of the first 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, print, and electronic versions of the publication. SPIE uses a seven-digit CID article numbering system in which:

- 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. The complete citation is used on the first page, and an abbreviated version on subsequent pages.

Contents

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

OCT I

10051 03	Visible light spectral domain optical coherence microscopy system for ex vivo imaging [10051-2]

NOVEL BIOMARKER OR MODEL

10051 0G	Sub-micron opto-chemical probes for studying living neurons [10051-15]
10051 0H	A novel reactive resin for embedding biological tissue [10051-16]
10051 0I	Stress plays provoking role in hypertension-related stroke: injuries of blood-brain barrier function [10051-17]

FLUORESCENCE IMAGING I

10051 0M	Through-skull vasculature assessment using fluorescence brain imaging on murine models at around 800 nm [10051-21]
10051 0O	Simultaneous two-photon imaging of cerebral oxygenation and capillary blood flow in atherosclerotic mice [10051-23]

FLUORESCENCE IMAGING II

10051 0R	A three-photon microscope with adaptive optics for deep-tissue in vivo structural and functional brain imaging [10051-26]
10051 0T	Rapid imaging of mammalian brain slices with a compact light sheet fluorescent microscope [10051-28]

PHOTOACOUSTIC IMAGING

10051 0W	Real-time imaging for cerebral ischemia in rats using the multi-wavelength handheld photoacoustic system [10051-31]
10051 0X	Feasibility of using RH795 dye for photoacoustic imaging of neuro-electrical activity [10051-32]

INTRINSIC SIGNAL IMAGING

- 10051 10   **Development of a multi-exposure speckle imaging for mice brain imaging** [10051-35]

POSTER SESSION

- 10051 15   **Wearable ear EEG for brain interfacing** [10051-40]
- 10051 17   **Functional near infrared spectroscopy for awake monkey to accelerate neurorehabilitation study** [10051-42]
- 10051 18   **Method for leveling the signal-to-noise ratio in multichannel functional near-infrared spectroscopy** [10051-43]
- 10051 19   **A pH-sensitive red fluorescent protein compatible with hydrophobic resin embedding** [10051-44]
- 10051 11   **Resonance Raman spectroscopy of human brain metastasis of lung cancer analyzed by blind source separation** [10051-54]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Abakumov, M., 0I	Lv, Xiaohua, 0H
Abdurashitov, A., 0I	Matsuda, Keiji, 17
Alfano, Robert R., 1I	Mehta, Kalpesh, 0W
Augustin, Marco, 03	Moeini, Mohammad, 0O
Baumann, Bernhard, 03	Navolokin, N., 0I
Bergles, Dwight E., 0M	Pain, Frédéric, 10
Chan, Kim Chuan, 0W	Pavlov, A., 0I
Cheng, Gangge, 1I	Pu, Yang, 1I
Chitnis, Parag V., 0X	Rahmim, Arman, 0M
Cressman, John R., 0X	Rasheed, Nashaat, 0X
Danko, Amanda S., 15	Razubaeva, V., 0I
Delgado, J., 0G	Rodríguez, Ramiro, 0R
Dholakia, Kishan, 0T	Saranceva, E., 0I
Emptage, Nigel, 0T	Schroeder, Eric D., 15
Eugui, Pablo, 03	Schweizer, F., 0G
Fedorova, V., 0I	Scott, Suzanne, 0T
Fialová, Stanislava, 03	Semyachkina-Glushkovskaya, O., 0I
Gang, Yadong, 0H, 19	Shirokov, A., 0I
Gau, Yung-Tian A., 0M	Soleimanzad, Haleh, 10
Gekalyuk, A., 0I	Tao, Xiaodong, 0R
Guo, Wenyan, 19	Thakor, Nifish, 0W
Gurden, Hirc, 10	Tuchin, V., 0I
Harper, Danielle J., 03	Ulanova, M., 0I
Haslehurst, Peter, 0T	Umeyama, Shinji, 18
Higo, Noriyuki, 17	Walker, Nicholas, 15
Hitzenberger, Christoph K., 03	Woehrer, Adelheid, 03
Hossein-Zadeh, M., 0G	Wong, Dean F., 0M
Huang, Q., 0I	Xu, Yu, 0W
Kamoshida, Atsushi, 18	Yamada, Toru, 17, 18
Kang, Jin U., 0M	Yang, Zhengyi, 0T
Kato, Junpei, 17	Yu, Xinguang, 1I
Kawaguchi, Hiroshi, 17	Zeng, Shaoqun, 0H, 19
Kubby, Joel, 0R	Zhou, Hongfu, 0H
Kurths, J., 0I	Zhou, Hongfu, 19
Lam, Tuwin, 0R	Zhou, Lixin, 1I
Le, Hanh N. D., 0M	Zhou, Yan, 1I
Lesage, Frédéric, 0O	Zhu, D., 0I
Li, Baoqiang, 0O	Zhu, Ke, 1I
Li, P., 0I	Zuo, Yi, 0R
Liao, Lun-De, 0W	
Lichtenegger, Antonia, 03	
Lieberman, R., 0G	
Lin, Dongmei, 1I	
Liu, Cheng-Hui, 1I	
Liu, Xiuli, 0H, 19	
Liu, Yu-Hang, 0W	
Lu, Ju, 0R	
Lu, Xuecong, 0O	
Luo, Q., 0I	

Conference Committee

Symposium Chairs

James G. Fujimoto, Massachusetts Institute of Technology
(United States)

R. Rox Anderson, Wellman Center for Photomedicine,
Massachusetts General Hospital (United States) and Harvard School
of Medicine (United States)

Program Track Chairs:

Rafael Yuste, Columbia University (United States)

David Boas, Massachusetts General Hospital, Harvard Medical School
(United States)

Conference Chairs

Qingming Luo, Huazhong University of Science and Technology
(China)

Jun Ding, Stanford School of Medicine (United States)

Conference Program Committee

Robert R. Alfano, The City College of New York (United States)

David A. Boas, Massachusetts General Hospital (United States)

Shin-Chi Chen, The Chinese University of Hong Kong (China)

Yu Chen, University of Maryland, College Park (United States)

Javier DeFelipe, Universidad Politécnica de Madrid (Spain)

Hongwei Dong, University of California, Los Angeles (United States)

Congwu Du, Stony Brook University (United States)

Beop-Min Kim, Korea University (Korea, Republic of)

Byungkook Lim, University of California, San Diego (United States)

Francesco Saverio Pavone, Laboratorio Europeo per la Spettroscopia
Non-lineare (Italy)

Darcy S. Peterka, Columbia University (United States)

Kambiz Pourrezaei, Drexel University (United States)

Claus-Peter Richter, Northwestern University (United States)

Anna W. Roe, Vanderbilt University (United States)

Shy Shoham, Technion-Israel Institute of Technology (Israel)

Shaoqun Zeng, Britton Chance Center for Biomedical Photonics
(China)

Session Chairs

- 1 OCT I
Qingming Luo, Huazhong University of Science and Technology (China)
- 2 OCT II
Ruikang K. Wang, University of Washington (United States)
- 3 Whole Brain Imaging
Francesco Saverio Pavone, Laboratorio Europeo per la Spettroscopia Non-lineare (Italy)
- 4 Novel Biomarker or Model
Dan Zhu, Huazhong University of Science and Technology (China)
- 5 Fluorescence Imaging I
Shaoqun Zeng, Britton Chance Center for Biomedical Photonics (China)
- 6 Fluorescence Imaging II
Jun Ding, Stanford School of Medicine (United States)
- 7 Photoacoustic Imaging
Beop-Min Kim, Korea University (Korea, Republic of)
- 8 Intrinsic Signal Imaging
Yu Chen, University of Maryland, College Park (United States)
- 9 NIR Imaging
David A. Boas, Massachusetts General Hospital (United States)