PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10864

, "Front Matter: Volume 10864," Proc. SPIE 10864, Clinical and Translational Neurophotonics 2019, 1086401 (12 April 2019); doi: 10.1117/12.2531324

SPIE.

Event: SPIE BiOS, 2019, San Francisco, California, United States

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 20 No. 14

Clinical and Translational Neurophotonics 2019

Steen J. Madsen

Victor X. D. Yang

Nitish V. Thakor

Editors

2–3 February 2019

San Francisco, California, United States

Sponsored and Published by

SPIE

Volume 10864

Proceedings of SPIE, 1605-7422, V. 10864

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

Clinical and Translational Neurophotonics 2019, edited by Steen J. Madsen, Victor X. D. Yang, Nitish V. Thakor,
Proc. of SPIE Vol. 10864, 1086401 · © 2019 SPIE · CCC code: 1605-7422/19/\$18 · doi: 10.1117/12.2531324

Proc. of SPIE Vol. 10864 1086401-1

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 *Clinical and Translational Neurophotonics 2019*, edited by Steen J. Madsen, Victor X. D. Yang, Nitish V. Thakor, Proceedings of SPIE Vol. 10864 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510623705

ISBN: 9781510623712 (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**

SPIEDigitalLibrary.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>

OPERATIVE AND POST OPERATIVE THERAPY II

10864 06	Differentiation of healthy and malignant brain tissues using terahertz pulsed spectroscopy and optical coherence tomography [10864-5]
----------	--

OPTICAL SPECTROSCOPY: PRE-CLINICAL I

10864 0C	Functional and multimodal photoacoustic microscopy for brain mapping and surgery [10864-11]
----------	--

OPTICAL SPECTROSCOPY: CLINICAL

10864 0K	Intraoperative vascular detection and three-dimensional reconstruction using statistical variance and infrared optical tracking methods in high frequency ultrasound imaging [10864-19]
10864 0L	Correlation between PET-derived cerebral amyloid status and retinal image features using a hyperspectral fundus camera [10864-20]
10864 0O	Using fNIRS to identify the brain activation and networks associated with English versus Chinese simultaneous interpreting [10864-23]

OPTICAL SPECTROSCOPY: PRE-CLINICAL III

10864 0P	Design considerations for a miniature multicontrast neuroimager [10864-33]
10864 0R	Assessing mouse brain tissue refractive index in the NIR spectral range utilizing spatial frequency domain imaging technique combined with processing algorithms [10864-15]
10864 0S	Application of machine learning techniques in investigating the relationship between neuroimaging dataset measured by functional near infra-red spectroscopy and behavioral dataset in a moral judgment task [10864-32]

POSTER SESSION

- 10864 0U **Functional near-infrared spectroscopy as a window to cardiovascular health** [10864-28]
- 10864 0V **First principle modeling of simultaneous VASO and BOLD fMRI with two-photon microscopy for optimal quantification of CBV changes in humans** [10864-29]

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.

Abookasis, David, 0R	Tuchin, V. V., 06
Aleksandrova, P. V., 06	Tyler, Betty, 0P
Alexandrakis, George, 0U	Wang, Qihong, 0P
Baik, Jin woo, 0C	Wang, Xinlong, 0U
Beshplav, S.-I. T., 06	Yang, Victor X. D., 0K
Boas, David, 0V	Yee, Albert, 0K
Chen, Chaoliang, 0K	Yuan, Zhen, 0O
Cherin, Emmanuel, 0K	Zaytsev, K. I., 06
Chernomyrdin, N. V., 06	
Chevrefils, C., 0L	
Cui, Joy, 0S	
Dashtestani, Hadis, 0S	
Desjardins, Michèle, 0V	
Devor, Anna, 0V	
Dobashi, Yuta, 0K	
Dolganova, I. N., 06	
Fadel, Paul, 0U	
Foster, Stuart, 0K	
Gagnon, Louis, 0V	
Gandjbakhche, Amir, 0S	
Genois, Élie, 0V	
Guilbert, Jérémie, 0V	
Gupta, Shaurya, 0K	
Harrison, J. Douglas, Jr., 0S	
Kim, Chulhong, 0C	
Kim, Jin Young, 0C	
Kim, Jongbeom, 0C	
Komandin, G. A., 06	
Kosyr'kova, A. V., 06	
Lee, Donghyun, 0C	
Lesage, F., 0L	
Lin, Xiaohong, 0O	
Liu, Hanli, 0U	
Lyde, Elizabeth, 0U	
Malakhov, K. M., 06	
Meitav, Omri, 0R	
Musina, G. R., 06	
Nguyen, Kytai, 0U	
Nikitin, P. V., 06	
Pathak, Arvind, 0P	
Potapov, A. A., 06	
Ramjst, Joel, 0K	
Reshetov, I. V., 06	
Sakadzic, Sava, 0V	
Senarathna, Janaka, 0P	
Sharafi, Sayed Mehran, 0L	
Soucy, J. P., 0L	
Sylvestre, J. P., 0L	
Thakor, Nitish, 0P	

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 Medical School
(United States)

Symposium Co-chairs

Jennifer K. Barton, The University of Arizona (United States)
Wolfgang Drexler, Medical University of Vienna (Austria)

Program Track Chairs

David Boas, Boston University (United States)
Elizabeth Hillman, Columbia University (United States)

Conference Chairs

Steen J. Madsen, University of Nevada, Las Vegas (United States)
Victor X. D. Yang, Ryerson University (Canada)
Nitish V. Thakor, National University of Singapore (Singapore)

Conference Program Committee

David Abookasis, Ariel University (Israel)
Frederic Leblond, Ecole Polytechnique de Montréal (Canada)
Herbert Stepp, Ludwig-Maximilians-Univ. München (Germany)

Session Chairs

- 1 Operative and Post Operative Therapy I
Victor X. D. Yang, Ryerson University (Canada)
- 2 Operative and Post Operative Therapy II
Steen J. Madsen, University of Nevada, Las Vegas (United States)
- 3 Optical Spectroscopy: Pre-Clinical I
Nitish V. Thakor, National University of Singapore (Singapore)
- 4 Optical Spectroscopy: Pre-Clinical II
Steen J. Madsen, University of Nevada, Las Vegas (United States)

- 5 Optical Spectroscopy: Clinical
David Abookasis, Ariel University (Israel)
- 6 Optical Spectroscopy: Pre-Clinical III
Nitish V. Thakor, National University of Singapore (Singapore)