PROGRESS IN BIOMEDICAL OPTICS AND IMAGING Vol. 19 No. 15

Neural Imaging and Sensing 2018

Qingming Luo Jun Ding Editors

29–30 January 2018 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 10481

Proceedings of SPIE 1605-7422, V. 10481

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 *Neural Imaging and Sensing 2018*, edited by Qingming Luo, Jun Ding, Proceedings of SPIE Vol. 10481 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 1605-7422 ISSN: 1996-756X (electronic)

ISBN: 9781510614475 ISBN: 9781510614482 (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 1605-7422/18/\$18.00.

Printed in the United States of America Vm7 i ffUb 5 ggc WJUhY gž & Wži bXYf "JWY bgY Zfca GD-9.

Publication of record for individual papers is online in the SPIE Digital Library.



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 Authors
- vii Conference Committee

IN VIVO MOUSE BRAIN IMAGING I

10481 0A Deep brain two-photon NIR fluorescence imaging for study of Alzheimer's disease [10481-4]

BRAIN-WIDE IMAGING I

10481 01 Imaging whole mouse brains with a dual resolution serial swept-source optical coherence tomography scanner [10481-12]

NOVEL TECHNOLOGIES I

10481 0S Nanomedicine photoluminescence crystal-inspired brain sensing approach [10481-24]

NOVEL TECHNOLOGIES II

10481 0W **UbasM: a simple, rapid, efficient balanced optical clearing method for brain imaging** [10481-29]

HUMAN BRAIN IMAGING

10481 0Y Low-frequency oscillation amplitude elevation of prefrontal cerebral hemodynamics with driving duration during prolonged driving test [10481-31]

OPTICAL SENSING AND IMAGING FOR BRAIN DISEASES

10481 13 Long term imaging of living brain cancer cells [10481-36]

POSTER SESSION

10481 1C Change in cognitive process during dance video game play with different appendages for motor output [10481-45]

- 10481 1G Voluntary exercise confers protection against age-related deficits in brain oxygenation in awake mice model of Alzheimer's disease [10481-50]
- 10481 1H Hemodynamic monitoring in different cortical layers with a single fiber optical system [10481-51]
- 10481 11 Comparison of seven optical clearing methods for mouse brain [10481-52]
- 10481 1N Measurement of shear-induced diffusion of red blood cells using dynamic light scatteringoptical coherence tomography [10481-57]
- 10481 1T Automatic tissue image segmentation based on image processing and deep learning [10481-63]
- 10481 1X High-throughput isotropic mapping of whole mouse brain using multi-view light-sheet microscopy [10481-67]