PROGRESS IN BIOMEDICAL OPTICS AND IMAGING
Vol. 21 No. 16

Neural Imaging and Sensing 2020

Qingming Luo
Jun Ding
Ling Fu
Editors

3–5 February 2020
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 11226

Proceedings of SPIE, 1605-7422, V. 11226

Neural Imaging and Sensing 2020, edited by Qingming Luo, Jun Ding, Ling Fu, Proc. of SPIE
Vol. 11226, 1122601 · © 2020 SPIE · CCC code: 1605-7422/20/$21 · doi: 10.1117/12.2569815

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 2020*, edited by Qingming Luo, Jun Ding, Ling Fu, Proceedings of SPIE Vol. 11226 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

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

ISBN: 9781510632158
ISBN: 9781510632165 (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

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

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.

Conference Committee

Symposium Chairs

Jennifer K. Barton, The University of Arizona (United States)
Wolfgang Drexler, Medizinische Universität Wien (Austria)

Program Track Chairs

David A. Boas, Boston University (United States)
Elizabeth M. C. Hillman, Columbia University (United States)

Conference Chairs

Qingming Luo, Hainan University (China)
Jun Ding, Stanford University Medical Center (United States)
Ling Fu, Huazhong University of Science and Technology (China)

Conference Program Committee

David A. Boas, Boston University (United States)
Shih-Chi Chen, The Chinese University of Hong Kong (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)
Na Ji, University of California, Berkeley (United States)
Beop-Min Kim, Korea University (Korea, Republic of)
Pengcheng Li, HUST-Suzhou Institute for Brainsmatics (China)
Byungkook Lim, University of California, San Diego (United States)
Francesco Saverio Pavone, European Laboratory for Non-linear Spectroscopy (Italy)
Darcy S. Peterka, Columbia University (United States)
Kambiz Pourrezaei, Drexel University (United States)
Claus-Peter Richter, Northwestern University (United States)
Anna W. Roe, Zhejiang University (China)
Oxana V. Semyachkina-Glushkovskaya, Saratov State University (Russian Federation)
Shy Shoham, Technion-Israel Institute of Technology (Israel)
Shaoqun Zeng, Huazhong University of Science and Technology (China)

Session Chairs

1 Microscopy I
Leilei Peng, University of Arizona (United States)

2 Diffused Optical Imaging
Eduardo Hirata Miyasaki, University of California, Santa Cruz (United States)

3 Human Brain
Shy Shoham, NYU Langone Health (United States)

4 Awake Animals
Beop-Min Kim, Korea University (Korea, Republic of)

5 Microscopy II
Sergio Fantini, Tufts University (United States)

6 OCT
Dongli Xu, Stanford University (United States)

7 Brain Activities I
Francesco Saverio Pavone, LENS - Laboratorio Europeo di Spettroscopie Non-Lineari (Italy)

8 Novel Techniques I
Shih-Chi Chen, The Chinese University of Hong Kong (Hong Kong, China)

9 Brain Activities II
Dongli Xu, Stanford University (United States)

10 Novel Techniques II
Jun Ding, Stanford University School of Medicine (United States)

11 Diseases
Ian A. Oldenburg, University of California, Berkeley (United States)