

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 23 No. 16

Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XX

**Caroline Boudoux
James W. Tunnell**
Editors

**23–24 January 2022
San Francisco, California, United States**

Sponsored and Published by
SPIE

Volume 11949

Proceedings of SPIE, 1605-7422, V. 11949

Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XX,
edited by Caroline Boudoux, James W. Tunnell, Proc. of SPIE Vol. 11949,
1194901 · © 2022 SPIE · 1605-7422 · doi: 10.1117/12.2635347

Proc. of SPIE Vol. 11949 1194901-1

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 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 *Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XX*, edited by Caroline Boudoux, James W. Tunnell, Proc. of SPIE 11949, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510647695
ISBN: 9781510647701 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2022 Society of Photo-Optical Instrumentation Engineers (SPIE).

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 fees. To obtain permission to use and share articles in this volume, visit Copyright Clearance Center 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.

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
SPIDigitalLibrary.org

Paper Numbering: A unique citation identifier (CID) number is assigned to each article in the Proceedings of SPIE 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 *Conference Committee*

FLUORESCENCE LIFETIME IMAGING

11949 02 **Custom lifetime phantoms for characterization and benchmarking of a new CAPS fluorescence-lifetime camera** [11949-1]

SPECTROSCOPY

11949 03 **Laser illumination platform for real-time analytics and improvement of treatment efficacy** [11949-17]

11949 04 **Temperature dependent hyperspectral terahertz imaging of human bone for disease diagnosis** [11949-46]

MICROSCOPY I

11949 05 **Laser micro biopsy with virtual H&E imaging for rapid minimally invasive diagnosis** [11949-27]

11949 06 **MEMS-based confocal laser scanning fluorescence microscopy for tumor demarcation in oncological surgery (Invited Paper)** [11949-28]

MICROSCOPY II

11949 07 **FreeView: a portable multiphoton imaging system for multimodal high-data-content label-free imaging** [11949-33]

OPTICAL COHERENCE TOMOGRAPHY I

11949 08 **Intestinal optical coherence tomography (angiography) imaging: a comparison between animal models and humans** [11949-20]

POSTER SESSION

11949 09 **LED-based light source for ultraviolet-visible absorption spectrophotometry** [11949-36]

- 11949 0B **Basic study on edema evaluation using viscoelastic parameters** [11949-41]
- 11949 0C **Panoramic imaging with depth information from miniaturized aspherical catadioptric endoscopes** [11949-42]
- 11949 0D **Towards real-time urinalysis with holographic lens-free imaging** [11949-43]
- 11949 0E **Sub-millimeter precision 3D measurement through a standard endoscope with time of flight** [11949-44]
- 11949 0F **Optically-enhanced wireless breast lesion localization device for use during lumpectomy** [11949-45]

Conference Committee

Symposium Chairs

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

Program Track Chairs

Tuan Vo-Dinh, Duke University (United States)
Anita Mahadevan-Jansen, Vanderbilt University (United States)

Conference Chairs

Caroline Boudoux, Polytechnique Montréal (Canada)
James W. Tunnell, The University of Texas at Austin (United States)

Conference Program Committee

Daniel X. Hammer, U.S. Food and Drug Administration (United States)
Dirk J. Faber, Amsterdam UMC (Netherlands)
Christine P. Hendon, Columbia University (United States)
Zhiwei Huang, National University of Singapore (Singapore)
Beop-Min Kim, Korea University (Korea, Republic of)
Muyinatu A. Lediju Bell, Johns Hopkins University (United States)
Hui Min Leung, Massachusetts General Hospital (United States)
Anita Mahadevan-Jansen, Vanderbilt University (United States)
Francisco E. Robles, Georgia Institute of Technology & Emory
University School of Medicine (United States)
Tuan Vo-Dinh, Fitzpatrick Institute For Photonics, Duke University
(United States)

