PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10504

, "Front Matter: Volume 10504," Proc. SPIE 10504, Biophysics, Biology and Biophotonics III: the Crossroads, 1050401 (11 May 2018); doi: 10.1117/12.2323051

Event: SPIE BiOS, 2018, San Francisco, California, United States

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 19 No. 38

Biophysics, Biology and Biophotonics III: the Crossroads

**Adam Wax
Vadim Backman**
Editors

**28 January 2018
San Francisco, California, United States**

Sponsored and Published by
SPIE

Volume 10504

Proceedings of SPIE, 1605-7422, V. 10504

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

Biophysics, Biology and Biophotonics III: the Crossroads, edited by Adam Wax, Vadim Backman,
Proc. of SPIE Vol. 10504, 1050401 · © 2018 SPIE · CCC code:
1605-7422/18/\$18 · doi: 10.1117/12.2323051

Proc. of SPIE Vol. 10504 1050401-1

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 *Biophysics, Biology and Biophotonics III: the Crossroads*, edited by Adam Wax, Vadim Backman, Proceedings of SPIE Vol. 10504 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510614932

ISBN: 9781510614949 (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.

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. 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>

SUPERRESOLUTION AND THE IMAGING OF THE GENOME

10504 09	Detection and identification of amino acids in Ficoll solutions with femtosecond laser-induced breakdown spectroscopy [10504-8]
----------	--

NEW TECHNOLOGIES IN MEDICAL DIAGNOSTICS

10504 0D	Label-free in vitro prostate cancer cell detection via photonic-crystal biosensor [10504-12]
----------	---

IMAGING CELLULAR AND MOLECULAR DYNAMICS AND BIOMECHANICS

10504 0G	Label-free Fourier filtered dark-field imaging to quantify subcellular dynamics [10504-15]
10504 0H	Diffusion of fluorescent poly(vinyl-alcohol) linear chains in semi-dilute poly(vinyl-alcohol) polymeric solutions [10504-16]
10504 0J	Dual scale biomechanics of extracellular matrix proteins probed by Brillouin scattering and quasistatic tensile testing [10504-18]

POSTER SESSION

10504 0L	Machine learning based analysis of human prostate cancer cell lines at different metastatic ability using native fluorescence spectroscopy with selective excitation wavelength [10504-20]
10504 0M	Time-zoomable FRET spectroscopy with a 512 x16 SPAD line sensor [10504-21]

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.

Beavil, Andrew, 0M
Beavil, Rebecca, 0M
Boukari, Hacène, 09, 0H
Boustany, Nada N., 0G
Bustamante, Gilbert, 0D
DeLuna, Frank, 0D
Ding, XiaoFei, 0D
Edginton, Ryan S., 0J
Erdogan, Ahmet T., 0M
Finlayson, Neil, 0M
Fioretto, Daniele, 0J
Gao, Xin, 0L
Green, Ellen M., 0J
Henderson, Robert K., 0M
Krstajic, Nikola, 0M
Markushin, Y., 09
Melikechi, N., 09
Naser, Mohammad, 0G
Nossal, Ralph, 0H
Palombo, Francesca, 0J
Pu, Yang, 0L
Sackett, Dan, 0H
Sagredo, Ismael, 0D
Schloss, Rene S., 0G
Sivakumar, P., 09
Smith, Jason, 0L
Sun, Lu-Zhe, 0D
Usai, Andrea, 0M
Williams, Gareth O. S., 0M
Winlove, C. Peter, 0J
Wu, Binlin, 0L
Xue, Jiangpeng, 0L
Ye, Jing Yong, 0D

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)

Program Track Chairs

Ammasi Periasamy, University of Virginia (United States)

Daniel L. Farkas, University of Southern California (United States) and
SMI (United States)

Conference Chairs

Adam Wax, Duke University (United States)

Vadim Backman, Northwestern University (United States)

Conference Program Committee

Nada N. Boustany, Rutgers, The State University of New Jersey
(United States)

Kishan Dholakia, University of St. Andrews (United Kingdom)

Jochen R. Guck, Technische Universität Dresden (Germany)

Elizabeth M. Hillman, Columbia University (United States)

Roger D. Kamm, Massachusetts Institute of Technology (United States)

Miles J. Padgett, University of Glasgow (United Kingdom)

Igal Szleifer, Northwestern University (United States)

Bruce J. Tromberg, Beckman Laser Institute and Medical Clinic
(United States)

David A. Weitz, Harvard University (United States)

Session Chairs

- 1 New Technologies in Biology and Biophysics

Adam Wax, Duke University (United States)

- 2 Superresolution and the Imaging of the Genome

Mark A. Anastasio, Washington University in St. Louis (United States)

- 3 New Technologies in Medical Diagnostics
Vadim Backman, Northwestern University (United States)
- 4 Imaging Cellular and Molecular Dynamics and Biomechanics
Jeremy D. Rogers, University of Wisconsin-Madison (United States)