PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 10728

, "Front Matter: Volume 10728," Proc. SPIE 10728, Biosensing and Nanomedicine XI, 1072801 (3 October 2018); doi: 10.1117/12.2515623

Event: SPIE Nanoscience + Engineering, 2018, San Diego, California, United States

PROCEEDINGS OF SPIE

Biosensing and Nanomedicine XI

Hooman Mohseni
Massoud H. Agahi
Manijeh Razeghi
Editors

19–20 August 2018
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 10728

Proceedings of SPIE 0277-786X, V. 10728

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

Biosensing and Nanomedicine XI, edited by Hooman Mohseni, Massoud H. Agahi,
Manijeh Razeghi, Proc. of SPIE Vol. 10728, 1072801 · © 2018 SPIE
CCC code: 0277-786X/18/\$18 · doi: 10.1117/12.2515623

Proc. of SPIE Vol. 10728 1072801-1

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 *Biosensing and Nanomedicine XI*, edited by Hooman Mohseni, Massoud H. Agahi, Manijeh Razeghi, Proceedings of SPIE Vol. 10728 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 0277-786X
ISSN: 1996-756X (electronic)

ISBN: 9781510620278
ISBN: 9781510620285 (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 0277-786X/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**

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>

LAB-ON-CHIP BIOSENSORS I

10728 03	Fabrication and characterization of boron-doped ultrananocrystalline diamond microelectrodes modified with multi-walled carbon nanotubes and nafion [10728-2]
10728 04	Antifouling technology of metamaterial structure using biomimetic technology [10728-3]
10728 06	Lab-on-a-chip photonic biosensor for detection of antigens [10728-5]

LAB-ON-CHIP BIOSENSORS II

10728 08	Ultracompact high-sensitivity biosensing based on regenerable laminated bio-conjugation in integrated photonic circuits [10728-7]
----------	--

PHOTONIC AND PLASMONIC BIOSENSORS I

10728 0B	3D printed micro-scale fiber-optic probe for intravascular pressure sensing [10728-10]
10728 0E	Enhanced molecular beacon based DNA detection using plasmonic open-ring nanoarrays [10728-14]

PHOTONIC AND PLASMONIC BIOSENSORS II

10728 0F	Biosensing using long-range surface plasmon structures [10728-15]
10728 0G	Artificial neural network to predict the refractive index of a liquid infiltrating a chiral sculptured thin film [10728-16]

POSTER SESSION

10728 0L	Study of the anti-fouling polymer sheet which used biomimetics technique [10728-21]
----------	--

- 10728 OM **Noninvasive detection of collagen regeneration after an isotretinoin treatment and ablative laser surgery in patients with acne scars by Raman spectroscopy [10728-22]**
- 10728 ON **High-performance bimetallic SPR sensor for ciprofloxacin based on molecularly imprinted polymer [10728-23]**
- 10728 OO **Correlation structure of Stokes parametric images of polycrystalline films of human biological fluids [10728-24]**
- 10728 OP **Clinical applications of the Mueller-matrix reconstruction of the polycrystalline structure of multiple-scattering biological tissues [10728-25]**
- 10728 OQ **Diffuse tomography of optical anisotropy of tumors and necrotic conditions of biological tissues [10728-26]**
- 10728 OR **System of 3D Mueller-matrix reconstruction of fibrillar networks of biological tissues of various morphological structures and physiological states [10728-27]**
- 10728 OS **Digital polarization-holographic 3D reconstruction of the polycrystalline structure of blood films in the diagnosis of breast cancer [10728-28]**

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.

Aksnes, Astrid, 06	Poduval, Radhika K., 0B
Arumugam, Prabhu, 03	Prydiy, O., 0P
Bakun, O., 0R, 0S	Ramírez-Elías, M. G., 0M
Besaga, R., 0R, 0S	Sakhnovskiy, M. Yu., 0O
Björk Arnfinnsdottir, Nina, 06	Sekiguchi, Atsushi, 04, 0L
Bodnar, G. B., 0O, 0P	Sidor, M. I., 0P, 0Q
Bukkapatnam, Satish T. S., 0G	Sokolnuik, S. O., 0R
Cabrera-Alonso, R., 0M	Sokolnyk, S. O., 0P
Castillo-Martínez, C., 0M	Soltys, I. V., 0Q
Chang, An-Yi, 03	Sun, Yi, 0N
Chen, Y. Y., 08	Syvokorovskaya, A.-V., 0O, 0R, 0S
Cheng, L.-J., 0E	Tanigawa, Hiroshi, 04, 0L
Chiwo, F. S., 0M	Tokumaru, Kazuki, 0L
Coote, Joanna, 0B	Tomka, Yu. Ya., 0R, 0S
Desjardins, Adrien E., 0B	Torres-Cisneros, Miguel, 0F
Dubolazov, A. V., 0O, 0P	Truc, N. K., 08
Escobar, Marco A., 0F	Tsumori, Fujio, 0L
Finlay, Malcolm C., 0B	Tsyhykalo, O., 0O
Garazduyk, M. S., 0O	Ushenko, A. G., 0Q
Golub, S., 0R, 0S	Ushenko, V. A., 0O
González, F. J., 0M	Ushenko, Yu. A., 0P, 0R, 0S
Gorsky, M. P., 0R, 0S	Wang, Xiaoping, 0N
Guevara, E., 0M	Wu, B., 0E
Guzman-Cabrera, Rafael, 0F	Wulchulyak, O. Ya., 0Q
Guzman-Sepulveda, J. R., 0F	Xiong, Q. H., 08
Høvik, Jens, 06	Xiong, S., 08
Kannegulla, A., 0E	Yadav, Mukesh, 06
Kushnerik, L. Yu., 0R, 0S	Zhang, Bing, 0N
Kvasnuyk, D., 0S	Zhytaryuk, V. G., 0Q
Lakhtakia, Akhlesh, 0G	
Li, Z. Y., 08	
Liu, A. Q., 08	
Liu, Y., 0E	
Martínez-Arias, Carlos G., 0F	
Matsumoto, Yoko, 0L	
McAtee, Patrick D., 0G	
Minami, Hiroko, 0L	
Mosse, Charles A., 0B	
Motrich, A. V., 0Q	
Nishino, Tomoki, 04, 0L	
Olar, O. I., 0O	
Olar, O. V., 0P	
Osornio-Martínez, C. E., 0M	
Pang, Kai, 0N	
Papakonstantinou, Ioannis, 0B	
Pavliukovich, N., 0Q	
Pavliukovich, O. V., 0Q	
Pérez-Atamoros, F., 0M	
Pidkamin, L., 0P	

Conference Committee

Symposium Chairs

Halina Rubinsztein-Dunlop, The University of Queensland (Australia)
Mark L. Brongersma, Geballe Laboratory for Advanced Materials
(GLAM), Stanford University (United States)

Symposium Co-chairs

Harry A. Atwater Jr., California Institute of Technology (United States)
Nikolay I. Zheludev, Optoelectronics Research Centre
(United Kingdom) and Nanyang Technological University
(Singapore)

Conference Chairs

Hooman Mohseni, Northwestern University (United States)
Massoud H. Agahi, Harbor-UCLA Medical Center (United States) and
Cedars-Sinai Medical Center (United States)
Manijeh Razeghi, Northwestern University (United States)

Conference Program Committee

Gert Cauwenberghs, University of California, San Diego (United States)
Philippe M. Fauchet, Vanderbilt University (United States)
Ryan M. Gelfand, CREOL, The College of Optics and Photonics, University
of Central Florida (Canada)
David H. Gracias, Johns Hopkins University (United States)
Kimberly S. Hamad-Schifferli, Massachusetts Institute of Technology
(United States)
Yu-Hwa Lo, University of California, San Diego (United States)
Omer G. Memis, Northwestern University (United States)
Masoud Panjehpour, Thompson Cancer Survival Center (United States)
Qimin Quan, Harvard University (United States)
Björn M. Reinhard, Boston University (United States)
Luisa Torsi, Università degli Studi di Bari Aldo Moro (Italy)
Adam T. Woolley, Brigham Young University (United States)

Session Chairs

- 1 Lab-On-Chip Biosensors I
Balaji Panchapakesan, Worcester Polytechnic Institute (United States)
Ryan M. Gelfand, CREOL, The College of Optics and Photonics, University
of Central Florida (United States)

- 2 Lab-On-Chip Biosensors II
Ryan M. Gelfand, CREOL, The College of Optics and Photonics, University of Central Florida (United States)
- 3 Photonic and Plasmonic Biosensors I
Ryan M. Gelfand, CREOL, The College of Optics and Photonics, University of Central Florida (United States)
Nikolay S. Makarov, UbiQD, Inc. (United States)
- 4 Photonic and Plasmonic Biosensors II
Ryan M. Gelfand, CREOL, The College of Optics and Photonics, University of Central Florida (United States)
Khalid M. Hattar, Sandia National Laboratories (United States)