Frontiers in Biological Detection: From Nanosensors to Systems XVI

Amos Danielli Benjamin L. Miller Sharon M. Weiss Editors

28–29 January 2024 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 12861

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 *Frontiers in Biological Detection: From Nanosensors to Systems XVI*, edited by Amos Danielli, Benjamin L. Miller, Sharon M. Weiss, Proc. of SPIE 12861, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510669819

ISBN: 9781510669826 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2024 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.



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

| | RAMAN |
|----------|--|
| 12861 02 | Detection and imaging of multiple immunotherapy markers in the tumor microenvironment with SERS nanoprobes for automated treatment response monitoring (Invited Paper) [12861-1] |
| 12861 03 | Nanowire mesh sensor for SERS breath analysis [12861-2] |
| | |
| | PHOTONICS I |
| 12861 04 | At-home measurement of blood biomarkers on the SiPhox Home silicon photonics platform (Invited Paper) [12861-6] |
| | PHOTONICS II |
| 12861 05 | Fixed wavelength interferometer sensors for low-cost chem-bio sensing applications [12861-8] |
| 12861 06 | Sub-wavelength waveguide Michelson interferometer sensors [12861-9] |
| | |
| | NANOMATERIALS |
| 12861 07 | Aspect ratio measurement of water-based rod-shaped particles in optical microcavities [12861-11] |
| | |
| | CHEMICAL SENSING |
| 12861 08 | π -conjugated polymer-based chemical sensors (Invited Paper) [12861-13] |
| 12861 09 | Molecular self-assembled chemosensors and their arrays [12861-14] |

| | FLUORESCENCE I |
|----------|--|
| 12861 0A | Assessing food degradation and microbial growth by sensor read-out with fluorescence spectroscopy [12861-17] |
| | PLASMONICS |
| 12861 OB | Manipulating light for the detection of viruses in resource-limited settings (Invited Paper) [12861-22] |
| 12861 OC | A rapid fluorescent plasmonic biosensor platform to diagnose Lyme disease from serum antibodies [12861-23] |
| | |
| | POSTER SESSION |
| 12861 OD | 3D-printed nanoplasmonic device with super-hydrophobic sample concentrator for biosensing [12861-26] |