PROGRESS IN BIOMEDICAL OPTICS AND IMAGING Vol. 24 No. 46

## Frontiers in Biological Detection: From Nanosensors to Systems XV

Amos Danielli Benjamin L. Miller Sharon M. Weiss Editors

29 January 2023 San Francisco, California, United States

Sponsored and Published by SPIE

Volume 12397

Proceedings of SPIE, 1605-7422, V. 12397

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

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 XV, edited by Amos Danielli, Benjamin L. Miller, Sharon M. Weiss, Proc. of SPIE 12397, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510658998 ISBN: 9781510659001 (electronic)

Published by **SPIE** P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time) SPIE.org Copyright © 2023 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
SESSION 1	PHOTONICS AND FIBERS
12397 02	On-chip integration of optical microbottles for biosensing [12397-1]
12397 03	Improved molecular detection sensitivity through photonic crystal unit cell design [12397-3]
SESSION 2	NEURONS AND PROTEINS
12397 04	Infrared spectroscopy for neurochemical monitoring of alcohol and its metabolites (Invited Paper) [12397-5]
SESSION 3	VIRUSES
12397 05	A simple, pipette-free, and power-free device for virus nucleic acid detection (Invited Paper) [12397-8]
SESSION 5	PAPER-BASED METHODS
12397 06	Solid-state optical chemosensor array devices for real-sample analysis (Invited Paper) [12397-16]
	POSTER SESSION
12397 07	Lossy mode resonance based single mode fiber structure for detection of ascorbic acid [12397-17]
12397 08	The study of aerosolized droplets with nanometer absorbing structures using a contactless

photoacoustic technique and the finite-difference time-domain method [12397-18]