

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 23 No. 17

Optics and Biophotonics in Low-Resource Settings VIII

David Levitz
Aydogan Ozcan
Editors

22–27 January 2022
San Francisco, California, United States

20–24 February 2022
ONLINE

Sponsored and Published by
SPIE

Volume 11950

Proceedings of SPIE, 1605-7422, V. 11950

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 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 *Optics and Biophotonics in Low-Resource Settings VIII*, edited by David Levitz, Aydogan Ozcan, Proc. of SPIE 11950, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510647718

ISBN: 9781510647725 (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*

EMERGING TECHNOLOGIES I

11950 02 **Automated miniscope for fluorescent cell counting applications** [11950-12]

EMERGING TECHNOLOGIES II

11950 03 **Reverse tuning of Whispering Gallery Mode microresonators** [11950-18]

11950 04 **Smartphone spectroscopy for melanoma detection** [11950-19]

11950 05 **Light-assisted drying (LAD) for anhydrous preservation of biologics: processing sample volumes comparable to a therapeutic dose** [11950-21]

11950 06 **Does the accuracy of the fingertip sphygmomanometer improve by measuring the outside temperature?** [11950-36]

APPLICATIONS OF MACHINE LEARNING IN DIAGNOSTICS, SENSING AND IMAGING

11950 07 **Application of laser speckles and deep learning in discrimination of supermicroplastics and zooplanktons** [11950-26]

11950 08 **Analysis of digital noise reduction methods on classifiers used in automated visual evaluation in cervical cancer screening** [11950-28]

MOBILE SENSING AND POINT-OF-CARE TECHNOLOGIES

11950 09 **Customization and testing of a mobile reader app for an open-access SARS-CoV-2 antigen lateral flow assay** [11950-32]

ADVANCES IN OCT SYSTEMS

11950 0A **A customized scope head for OCT-guided laser stimulation of the vagus nerve** [11950-3]

POSTER SESSION

11950 0B **Colour and image processing for output extraction of an LSPR sensor** [11950-35]