PROCEEDINGS OF SPIE

Biophotonics in Point-of-Care

Michael T. Canva Ambra Giannetti Hatice Altug Julien Moreau Editors

6–10 April 2020 Online Only, France

Sponsored by SPIE

Cosponsored by
City of Strasbourg (France)
Eurometropole (France)
CNRS (France)
Région Grand Est (France)
iCube (France)
Université de Strasbourg (France)

Cooperating Organisations
Photonics 21 (Germany)
EOS—European Optical Society (Germany)
Photonics Public Private Partnership (Belgium)
Photonics France (France)

Published by SPIE

Volume 11361

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 *Biophotonics in Point-of-Care*, edited by Michael T. Canva, Ambra Giannetti, Hatice Altug, Julien Moreau, Proceedings of SPIE Vol. 11361 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510634947

ISBN: 9781510634954 (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 © 2020, 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 \$21.00 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/20/\$21.00.

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: 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 Vii	Authors Conference Committee
	ENABLING TECHNOLOGIES FOR INSTRUMENTATION AND LAB-ON-A-CHIP I
11361 09	Biofunctionalization strategies for optical fiber grating immunosensors (Invited Paper) [11361-9]
11361 0A	3D printing of multifunctional optofluidic systems for high-sensitive detection of pathological biomarkers in liquid biopsies [11361-10]
	ENABLING TECHNOLOGIES FOR INSTRUMENTATION AND LAB-ON-A-CHIP II
11361 0C	Non-contact PPG measurement system incorporating image analyzed photoplethysmogram signals and deep learning algorithms [11361-12]
	APPLICATIONS OF POCT
11361 OJ	Toward a SPR imaging in situ system to detect marine biotoxin [11361-21]
11361 OL	Circulating cancer cell detection using an optical fiber aptasensor [11361-23]
	POSTER SESSION
11361 OP	Compact multichannel spectroscopic label-free biosensor platform for plant diseases point-of-care testing (POCT) [11361-26]
11361 OW	Periodontal probe based on the fluorescent fiber position sensor [11361-33]
11361 OZ	Wearable multi-sensor for plant monitoring, based on fluorescent fibers [11361-36]