PROCEEDINGS OF SPIE

SPIDigitalLibrary.org/conference-proceedings-of-spie

Front Matter: Volume 11921

, "Front Matter: Volume 11921," Proc. SPIE 11921, Emerging Technologies for Cell and Tissue Characterization, 1192101 (3 December 2021); doi: 10.1117/12.2618676

SPIE.

Event: European Conferences on Biomedical Optics, 2021, Online Only

PROGRESS IN BIOMEDICAL OPTICS AND IMAGING

Vol. 22 No. 61

Emerging Technologies for Cell and Tissue Characterization

Arjen Amelink
Seemantini K. Nadkarni
Giuliano Scarcelli
Editors

20–24 June 2021
Online Only, Germany

Sponsored by
The Optical Society (United States)
SPIE

Published by
SPIE

Volume 11921

Proceedings of SPIE-OSA Biomedical Optics, 1605-7422, V. 11921

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

Emerging Technologies for Cell and Tissue Characterization, edited by Arjen Amelink,
Seemantini K. Nadkarni, Giuliano Scarcelli, Proc. of SPIE-OSA Vol. 11921, 1192101
© 2021 OSA-SPIE · CCC code: 1605-7422/21/\$21 · doi: 10.1117/12.2618676

Proc. of SPIE-OSA Vol. 11921 1192101-1

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](https://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 *Emerging Technologies for Cell and Tissue Characterization*, edited by Arjen Amelink, Seemantini K. Nadkarni, Giuliano Scarcelli, Proc. of SPIE-OSA 11921, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 1605-7422

ISSN: 2410-9045 (electronic)

ISBN: 9781510647084

ISBN: 9781510647091 (electronic)

Copublished 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](https://spie.org)

and

The Optical Society

2010 Massachusetts Ave., N.W., Washington, D.C., 20036 USA

Telephone +1 202 223 8130 (Eastern Time) · Fax +1 202 223 1096

osa.org

Copyright © 2021 Society of Photo-Optical Instrumentation Engineers (SPIE) and The Optical Society

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

[SPIEDigitalLibrary.org](https://spiedigitallibrary.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

NOVEL MICROSCOPES FOR CELL AND TISSUE CHARACTERIZATION

- 11921 02 **Time multiplexed nuclear imaging using targeted nanoparticles for accurate tumors margin detection** [11921-1]
- 11921 03 **Multispectral time-resolved fluorescence imaging by single-pixel detection and data fusion** [11921-2]
- 11921 04 **Characterization of lentiginous melanoma tissue with multimodal polarimetric harmonic generation microscopy** [11921-3]
- 11921 05 **Investigating antibiotics in cells with pre-resonance stimulated Raman scattering hyperspectral microscopy** [11921-4]

OPTICS FOR MICROMECHANICAL CHARACTERIZATION

- 11921 06 **Towards high-throughput all-optical biomechanical imaging via Brillouin scattering microscopy** [11921-5]
- 11921 07 **Method to estimate scleral mechanical properties from air-puff optical coherence tomography: a proof-of-concept** [11921-6]
- 11921 08 **Digital holography-based quantitative elastography using noise-correlation** [11921-7]
- 11921 09 **Corneal vibrography based on optical coherence tomography (OCT) B-scans** [11921-8]
- 11921 0A **Interferometry-based micropipette aspiration allows to study of the nanoscale dynamic mechanical behavior of biomaterials** [11921-9]
- 11921 0B **Multimodal imaging for mechanical and chemical mapping at the microscale: applications on single cells and tissues** [11921-10]
- 11921 0C **Dynamics of cell membrane permeabilization by saponins using terahertz attenuated total reflection** [11921-11]

POINT-OF-CARE SENSING TECHNOLOGIES AND WEARABLE SENSORS

- 11921 0D **Label-free cell analysis and fast bacteria detection using Raman-trapping-microscopy** [11921-12]
- 11921 0E **Low-cost chromatic confocal endomicroscope for the diagnosis of cervical precancer** [11921-13]

- 11921 OF **Vascular organ-on-chip imaging: a dedicated single plane illumination fluorescence microscope** [11921-14]
- 11921 OG **Holographic optogenetic stimulation with calcium imaging to probe and visualize cardiac activity** [11921-15]

POSTER SESSION I

- 11921 OH **Near-field chicken skin analysis with focused surface plasmon** [11921-16]
- 11921 OI **Investigating changes in skin biochemistry due to discoid lupus erythematosus using Raman spectroscopy and mass spectrometry** [11921-17]
- 11921 OJ **Bacterial inactivation in platelet concentrates using ultrashort pulsed laser** [11921-18]
- 11921 OK **In-vitro screening with holographic incoherent quantitative phase imaging focuses on finding medicaments for repurposing as anti-metastatic agents designated as migrastatics** [11921-19]
- 11921 OL **Calculating tumor proportional score of HNSCC patients with deep learning object detection** [11921-20]
- 11921 OM **Non-convex optimization with spherical aberration compensation for efficient excitation in two-photon optogenetics** [11921-21]

POSTER SESSION II

- 11921 ON **Quantitative, label-free measurements of cells after light exposure** [11921-22]
- 11921 OO **Fabrication of surface-enhanced Raman spectroscopy (SERS) based biosensor using glancing angle deposition (GLAD) technique for the detection of E-coli bacteria** [11921-23]
- 11921 OP **Novel diagnostic scheme biomechanical discrimination of cells using THz-TD transmission spectroscopy** [11921-24]

POSTER SESSION III

- 11921 OQ **Detection of acoustic waves with pump-probe microscopy** [11921-25]
- 11921 OR **5-ALA-induced death dynamics and pathways of HeLa cells in vitro depending on FBS content and irradiation dose** [11921-26]
- 11921 OS **Fluorescence imaging technologies for complex characterization 3D-models based on induced pluripotent stem cells** [11921-27]

11921 OT

Reconstruction of scattered images with neural networks [11921-28]