PROGRESS IN BIOMEDICAL OPTICS AND IMAGING
Vol. 21 No. 47

Plasmonics in Biology and Medicine XVII

Tuan Vo-Dinh
Ho-Pui A. Ho
Krishanu Ray
Editors

2–3 February 2020
San Francisco, California, United States

Sponsored and Published by
SPIE

Volume 11257

Proceedings of SPIE, 1605-7422, V. 11257

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 *Plasmonics in Biology and Medicine XVII*, edited by Tuan Vo-Dinh, Ho-Pui A. Ho, Krishanu Ray, Proceedings of SPIE Vol. 11257 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

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

ISBN: 9781510632776
ISBN: 9781510632783 (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

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.

SPIEDigitalLibrary.org

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 *Authors*
vii *Conference Committee*

SESSION 1 PLASMONICS AND SERS SYSTEMS

11257 02 **Plasmonic nanoparticles in agarose gel and filter paper-integrated microfluidic devices for SERS detection of molecules** [11257-1]

11257 03 **Surface plasmon resonance imaging enhanced by dielectrophoresis and AC-electroosmosis** [11257-2]

SESSION 2 ADVANCED RAMAN AND SERS SYSTEMS

11257 07 **A diode laser based clinical diagnostic system using shifted excitation resonance Raman difference spectroscopy for the in vivo detection of ß-carotene in human skin (Invited Paper)** [11257-6]

11257 08 **Improving Raman spectroscopy using diode lasers at 785 nm for shifted excitation Raman difference spectroscopy (Invited Paper)** [11257-7]

11257 09 **Design and modeling of SERS based sensor chips for applications in nanomedicine** [11257-8]

SESSION 3 PLASMONIC NANOSTRUCTURES

11257 0C **Ultrafast VCSEL-based plasmonic polymerase chain reaction with real-time label-free amplicon detection for point-of-care diagnostics** [11257-11]

11257 0E **Bloch long-range surface plasmons on waveguide arrays as multichannel biosensors** [11257-13]

11257 0G **Gold nanostar-enhanced multimodal photoacoustic microscopy and optical coherence tomography for the visualization of laser-induced choroidal neovascularization in living rabbits** [11257-15]

SESSION 4 PLASMONIC DETECTION

11257 0L **Development of collinear transmission plasmonic biosensor for detection of HIV-1** [11257-20]

SESSION 5 PLASMONIC DETECTION AND SENSING

11257 0O **Fiberoptics SERS sensors using plasmonic nanostar probes for detection of molecular biotargets** [11257-24]

POSTER SESSION

11257 0S **Application of label-free SERS and EC-SERS for detection of traces of drugs in biological fluids** [11257-28]

11257 0T **Fiber based SERS studies of cancerous tissues: toward clinical trials** [11257-29]

11257 0V **Manipulation of hot-spot densities inside Ag bundle patterns by controlling the Ag nanostructure size for reliable and ultra-sensitive SERS substrates** [11257-31]

11257 0X **Inkjet dispense SERS (ID-SERS) for quantitative analysis and bacterial detection** [11257-33]

11257 12 **Sensitivity enhancement of a surface plasmon resonance biosensor by adding $Pb_5Ge_3O_{11}$ layer to diagnose the hypothyroidism** [11257-38]

11257 14 **Nanostar probes: a golden platform for Synergistic Immuno Photothermal Nanotherapy (SYMPHONY) for the treatment of metastatic cancer** [11257-41]

11257 15 **Applications of plasmonic nanoparticles for in vivo biosensing of plants** [11257-42]

11257 16 **Super-high enhancement of surface enhanced Raman scattering substrate via resonance coupling** [11257-40]

11257 17 **Self-similarity in azimuthal Walsh filters and corresponding far-field diffraction characteristics: a unique study to control tightly focused fields and coupling of light into metamaterials, plasmonic structure and waveguides** [11257-337]