

PROCEEDINGS OF SPIE

*UV and Higher Energy Photonics:
From Materials to Applications
2018*

Gilles Lérondel
Satoshi Kawata
Yong-Hoon Cho
Editors

19–20 August 2018
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 10727

Proceedings of SPIE 0277-786X, V. 10727

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 *UV and Higher Energy Photonics: From Materials to Applications 2018*, edited by Gilles Léronde, Satoshi Kawata, Yong-Hoon Cho, Proceedings of SPIE Vol. 10727 (SPIE, Bellingham, WA, 2018) Seven-digit Article CID Number.

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510620254

ISBN: 9781510620261 (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 © 2018, 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 \$18.00 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/18/\$18.00.

Printed in the United States of America Vm7 i ffUb '5gg: WJUH' q' bWZi bXYf' JW bg' Zc a 'GD-9.

Publication of record for individual papers is online in the SPIE Digital Library.

SPIE. DIGITAL LIBRARY

SPIDigitalLibrary.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 | <i>Authors</i> |
| vii | <i>Conference Committee</i> |

UV AND HIGHER ENERGY MICROSCOPY AND SPECTROSCOPY

| | |
|----------|---|
| 10727 0B | DNA methylation detection using UV nano bowtie antenna enhanced Raman spectroscopy [10727-10] |
|----------|---|

APPLICATIONS OF UV, DEEP UV, VACUUM UV, AND EXTREME UV PHOTONICS

| | |
|----------|--|
| 10727 0D | Investigation for electronic states of molecules in gel and solid electrolytes using attenuated total reflectance spectroscopy in the far-UV region [10727-13] |
|----------|--|

UV AND DEEP UV BIOSENSING AND ANALYSIS WITH UV AND HIGHER ENERGY PHOTONICS

| | |
|----------|---|
| 10727 0F | UV detectors: status and prospects (Invited Paper) [10727-15] |
|----------|---|

POSTER SESSION

| | |
|----------|--|
| 10727 0Q | Comparative analysis for microbial photo-inactivation in continuous and partial therapies [10727-25] |
| 10727 0W | Growth and fabrication of backside illuminated AlGaN based solar-blind ultraviolet photodetectors on high quality AlN [10727-31] |