PROCEEDINGS OF SPIE

UV and Higher Energy Photonics: From Materials to Applications 2024

Gilles Lérondel Yong-Hoon Cho Atsushi Taguchi Editors

18–20 August 2024 San Diego, California, United States

Sponsored and Published by SPIE

Volume 13115

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 UV and Higher Energy Photonics: From Materials to Applications 2024, edited by Gilles Lérondel, Yong-Hoon Cho, Atsushi Taguchi, Proc. of SPIE 13115, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510678903

ISBN: 9781510678910 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2024 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.



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

| | UV AND HIGH ENERGY MATERIALS AND LIGHT SOURCES I |
|----------|--|
| 13115 02 | Flip-chip UVC LEDs as a light source to detect human serum albumin and bovine serum albumin [13115-3] |
| | UV AND HIGHER ENERGY MICROSCOPY AND SPECTROSCOPY I |
| 13115 03 | Optimization of the tilt angles in reflection-mode ptychographic reconstructions by leveraging the flexibility of automatic differentiation-based modeling [13115-9] |
| | UV AND HIGHER ENERGY MICROSCOPY AND SPECTROSCOPY II |
| 13115 04 | Fluorescence-free Raman spectral measurement using a UV laser [13115-12] |
| | |
| | UV AND DEEP UV BIOSENSING AND ANALYSIS WITH UV AND HIGHER ENERGY PHOTONICS |
| 13115 05 | UV Raman spectroscopy for therapeutic drug monitoring [13115-15] |
| 13115 06 | UV plasmonics for enhancing the sensitivity and selectivity of neurotransmitter sensor based on their native fluorescence [13115-16] |
| | APPLICATIONS OF UV, DEEP UV, VACUUM UV, AND EXTREME UV PHOTONICS |
| 13115 07 | EUV imaging of nanostructures without lenses (Invited Paper) [13115-19] |
| 13115 08 | Fabrication of superconducting quantum circuits on 12-inch wafers using an ArF immersion lithography system I [13115-20] |