

PROCEEDINGS OF SPIE

Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XXIII

Takuo Tanaka
Yu-Jung Lu
Editors

3–7 August 2025
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 13579

Proceedings of SPIE 0277-786X, V. 13579

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 *Plasmonics: Design, Materials, Fabrication, Characterization, and Applications XXIII*, edited by Takuo Tanaka, Yu-Jung Lu, Proc. of SPIE 13579, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510690660

ISBN: 9781510690677 (electronic)

Published by

SPIE

P.O. Box 10, Bellingham, Washington 98227-0010 USA

Telephone +1 360 676 3290 (Pacific Time)

SPIE.org

Copyright © 2025 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.

**SPIE. DIGITAL
LIBRARY**

SPIDigitalLibrary.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

v *Conference Committee*

METASURFACES III

13579 02 **Metasurface-based optical systems (Invited Paper)** [13579-21]

FUNDAMENTAL OF PLASMONICS I

13579 03 **Huygens' principle for hyperbolic plasmon polaritons** [13579-33]

ACTIVE METASURFACES

13579 04 **Active metasurfaces (Keynote Paper)** [13579-34]

PLASMONIC APPLICATIONS II

13579 05 **Single-shot cm-scale nanofabrication of plasmonic metasurfaces for trace detection of chemical compounds** [13579-41]

PLASMONIC APPLICATIONS IV

13579 06 **Exploring nanoring scatterers for full-color transparent screens** [13579-61]

FUNDAMENTAL OF PLASMONICS II

13579 07 **The role of the magnetic part of the optical field in the optical control of the magnetization** [13579-64]

PLASMONIC APPLICATIONS V

13579 08 **Indirect tunneling conductivity of periodic arrays of isolated gold nanoparticles** [13579-66]

- 13579 09 **A versatile $\text{Ti}_x\text{Y}_{(1-x)}\text{N}$ plasmonic sensor overcoming noble-metal limitations for CMOS compatible sensing** [13579-73]
- 13579 0A **Liquid metal-based tunable plasmon-hybridized nanostructures** [13579-71]

POSTER SESSION

- 13579 0B **Characterization of individual nanoparticles used in photothermal therapy via wide-field photothermal imaging** [13579-74]
- 13579 0C **Cavity-modified fluorescence in the weak and strong coupling regimes** [13579-78]
- 13579 0D **Rapid detection of H7N9 influenza virus based on bimetallic SPR biosensor combined with AI** [13579-83]
- 13579 0E **Subwavelength asymmetric plasmonic absorber based on tilted metallic nanoparticles** [13579-84]

DIGITAL POSTER SESSION

- 13579 0F **Plasma-jet printing for selective fabrication of SERS-active substrates with high reproducibility and design flexibility** [13579-60]
- 13579 0G **Broadband plasmonic resonances for surface-enhanced Raman spectroscopy** [13579-76]