

# PROCEEDINGS OF SPIE

## ***Plasmonics IX***

**Hong Wei**  
**Takuo Tanaka**  
*Editors*

**12–14 October 2025**  
**Beijing, China**

*Sponsored by*  
SPIE  
COS—Chinese Optical Society

*Cooperating Organizations*

Tsinghua University (China) • Peking University (China) • University of Science and Technology of China (China) • Zhejiang University (China) • Tianjin University (China) • Beijing Institute of Technology (China) • Beijing University of Posts and Telecommunications (China) • Nankai University (China) • Changchun University of Science and Technology (China) • University of Shanghai for Science and Technology (China) • Capital Normal University (China) • Huazhong University of Science and Technology (China) • Beijing Jiaotong University (China) • China Jiliang University (China) • Shanghai Institute of Optics and Fine Mechanics, CAS (China) • Changchun Institute of Optics, Fine Mechanics and Physics, CAS (China) • Institute of Semiconductors, CAS (China) • Institute of Optics and Electronics, CAS (China) • Institute of Physics, CAS (China) • Shanghai Institute of Technical Physics, CAS (China) • China Instrument and Control Society (China) • Optical Society of Japan (Japan) • Optical Society of Korea (Republic of Korea) • Australian and New Zealand Optical Society • Optics and Photonics Society of Singapore (Singapore) • European Optical Society

*Supporting Organizations*

China Association for Science and Technology (CAST) (China)  
Department of Information of National Nature Science Foundation, China (NSFC) (China)

*Published by*  
SPIE

**Volume 13724**

Proceedings of SPIE 0277-786X, V. 13724

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](http://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 IX*, edited by Hong Wei, Takuo Tanaka, Proc. of SPIE 13724, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510694002

ISBN: 9781510694019 (electronic)

Published by

**SPIE**

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

Telephone +1 360 676 3290 (Pacific Time)

[SPIE.org](http://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](http://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](http://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 *Symposium Committees*
- ix *Conference Committee*

---

## QUANTUM PLASMONICS

---

- 13724 02 **CMOS-compatible square ring resonator-based plasmonic sensor for temperature sensing** [13724-10]

---

## CHIRAL PLASMONICS

---

- 13724 04 **WSe<sub>2</sub>@AuNSs-enhanced plug-and-play optical fiber SPR immunosensor for the detection of the alpha-fetoprotein** [13724-16]

---

## PLASMONIC METAMATERIALS AND METASURFACES

---

- 13724 05 **Hierarchical plasmonic metamaterials for photodetection and antidetection (Invited Paper)** [13724-25]
- 13724 06 **Strong coupling between molecular vibration and plasmonic anapole mode in a mid-infrared metasurface** [13724-27]

---

## NEAR-FIELD OPTICS AND PLASMONICS

---

- 13724 07 **High-resolution optical fiber near guided wave surface plasmon resonance sensor based on microfluidic technology** [13724-31]

---

## POSTER SESSION

---

- 13724 08 **Investigation of a D-shaped optical fiber SPR sensor integrated with metallic nanograting for refractive index sensing** [13724-32]
- 13724 09 **Ultrasensitive quantitative detection of trace-level drug molecules via SERS** [13724-33]
- 13724 0A **Canonical few mode theory for nonlocal nanoresonators via effective surface response mapping** [13724-38]
- 13724 0B **Dispersion characteristics of surface plasmon polaritons in a multiwalled carbon nanotube array** [13724-40]

- 13724 0C **Resonant interaction of drift current with surface plasmon polaritons in a planar array of carbon nanotubes** [13724-41]
- 13724 0D **Inverse design of nanorod dimer structures based on bidirectional multiscale feature fusion networks** [13724-42]