PROCEEDINGS OF SPIE

Plasmonics V

Zheyu Fang Takuo Tanaka *Editors*

12–16 October 2020 Online Only, 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) • 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) • Japan Optical Society (Japan) • Korea Optical Society (Korea, Republic of) • Australia Optical Society (Australia) • Singapore Optical Society (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 11557

Proceedings of SPIE 0277-786X, V. 11557

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Plasmonics V, edited by Zheyu Fang, Takuo Tanaka, Proc. of SPIE Vol. 11557, 1155701 © 2020 SPIE · CCC code: 0277-786X/20/\$21 · doi: 10.1117/12.2585987 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 V*, edited by Zheyu Fang, Takuo Tanaka, Proceedings of SPIE Vol. 11557 (SPIE, Bellingham, WA, 2020) Seven-digit Article CID Number.

ISSN: 0277-786X ISSN: 1996-756X (electronic)

ISBN: 9781510639294 ISBN: 9781510639300 (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 © 2020, 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 \$21.00 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/20/\$21.00.

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: 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

METAMATERIALS AND METASTRUCTURES I

11557 04 Chirality-delinked manipulations on surface waves and propagating waves by an ultracompact metasurface (Invited Paper) [11557-4]

NANOPHOTONICS AND DEVICE APPLICATION

11557 OF Photophysical properties of nanoparticle-dye-protein complexes for fluorescent labeling purposes [11557-16]

MICROLASERS AND PLASMONIC HOT ELECTRONS

11557 0U Nondipole effect in strongly coupled plasmon-quantum dot systems [11557-33]

POSTER SESSION

- 11557 0ZPlasmon induced multiphoton photoemission in plasmon nanostructure by PEEM [11557-39]
- 11557 10 Ultrafast plasmon dynamics and dephasing time in a single bowtie structure observed by timeresolved photoemission electron microscopy [11557-40]
- 11557 11 Advanced structures on multiple configuration sensors [11557-41]
- 11557 12 Nanosecond laser-induced breakdown plasma radiation characteristics [11557-42]
- 11557 16 Ultra-broadband perfect absorber based on nanoarray of multilayered quadrangular frustum pyramid in the UV-NIR spectrum [11557-46]
- 11557 18 Effect of cavity confinement on the enhancement of LIBS spectra in soil [11557-48]
- 11557 1B The study of molecular catalytic reaction driven by plasmon on double nanowires via Raman spectroscopy [11557-51]