

PROCEEDINGS OF SPIE

Nanophotonics and Micro/Nano Optics VII

Zhiping Zhou
Kazumi Wada
Limin Tong
Editors

10–12 October 2021
Nantong, 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) • The Optical Society of Japan (Japan) • Optical Society of Korea (Korea, Republic of) • Australia and New Zealand Optical Society (Australia) • 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 11903

Proceedings of SPIE 0277-786X, V. 11903

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

Nanophotonics and Micro/Nano Optics VII, edited by Zhiping Zhou, Kazumi Wada,
Limin Tong, Proc. of SPIE Vol. 11903, 1190301 · © 2021 SPIE
CCC code: 0277-786X/21/\$21 · doi: 10.1117/12.2619354

Proc. of SPIE Vol. 11903 1190301-1

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 *Nanophotonics and Micro/Nano Optics VII*, edited by Zhiping Zhou, Kazumi Wada, Limin Tong, Proc. of SPIE 11903, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510646551
ISBN: 9781510646568 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2021 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

1D-FIBER/0D-NANOCRYSTALS

- 11903 03 **Tapered MMF fiber/AuNPs/MoS₂ based sensor for p-cresol detection** [11903-2]
11903 04 **Synthesis of copper halide nanocrystals and their optical properties** [11903-3]

RESONATOR/CAVITY

- 11903 05 **Predicting the Q factor and modal volume of photonic crystal nanocavities via deep learning** [11903-4]
11903 07 **Slotted nanoresonator geometry: a route for Purcell enhancement and nearfield intensity amplification in all-dielectric nanophotonics** [11903-6]

META/2D MATERIALS

- 11903 08 **Tuning resonant reflection in monolayer graphene nanosquare arrays at mid-infrared frequencies** [11903-7]
11903 0B **A numerical study of optical reconfiguration dynamics of phase change material metasurfaces** [11903-10]

SILICON PHOTONICS I

- 11903 0F **A beam scanner based on an on-chip optical switch array with high emission efficiency** [11903-14]
11903 0H **Dimensionality reduction in designing advanced silicon photonic components (Invited Paper)** [11903-16]

SILICON PHOTONICS II

- 11903 0J **Simultaneous detection of refractive index and temperature using high-order air and dielectric modes in a single photonic crystal nanobeam cavity** [11903-19]

POSTER SESSION

- 11903 OW **Vortex generation induced by the spin-orbit interactions in optics: a comparison** [11903-29]
- 11903 OX **Broadband high-efficiency reflective LTC polarization converter with temperature control in the visible range** [11903-30]
- 11903 OY **Tunable quad-band absorber based on graphene metamaterials** [11903-31]
- 11903 12 **SiN-Si dual-layer grating coupler to increase the input optical power of Si-based photonic-integrated circuit** [11903-35]
- 11903 13 **Research on nonlocal optical metasurfaces design based on the genetic algorithm method** [11903-36]
- 11903 14 **A versatile metasurface for meta-nanoprinting and bifocal metalens** [11903-37]
- 11903 16 **Computationally efficient algorithms to enhance multiple configuration systems** [11903-39]
- 11903 17 **High Q-factor fano resonances driven by quasi bound state in the continuum based on all-dielectric metasurface** [11903-40]
- 11903 18 **Multiple plasmon-induced transparency effects derived by periodically arranged rectangular resonators in a plasmonic system** [11903-41]
- 11903 19 **Influence of roughness on scattering characteristics of periodic micro-nano optical structures** [11903-42]
- 11903 1C **Microstructure characterization and sidewall treatment of GaN/InGaN micro-light-emitting diodes** [11903-45]
- 11903 1F **Direct-growth and nonlinear properties of micron DAST hydrate waveguides** [11903-48]
- 11903 1I **Design and analysis of bilayer metallic grating polarizer with tapered slits in deep ultraviolet band** [11903-51]
- 11903 1J **High Q-factor fano resonances on permittivity-asymmetric dielectric meta-surfaces** [11903-52]
- 11903 1K **High Q-factor multiple fano resonances based on triple dielectric strips metasurface** [11903-53]