

PROCEEDINGS OF SPIE

***Photonic Fiber and Crystal Devices:
Advances in Materials and
Innovations in Device
Applications XIX***

**Shizhuo Yin
Ruyan Guo**
Editors

**3 August 2025
San Diego, California, United States**

Sponsored and Published by
SPIE

Volume 13608

Proceedings of SPIE 0277-786X, V. 13608

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 *Photonic Fiber and Crystal Devices: Advances in Materials and Innovations in Device Applications XIX*, edited by Shizhuo Yin, Ruyan Guo, Proc. of SPIE 13608, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

ISSN: 0277-786X

ISSN: 1996-756X (electronic)

ISBN: 9781510691247

ISBN: 9781510691254 (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*

PHOTONIC CRYSTALS, FIBERS, AND THIN FILMS: MATERIALS AND PROPERTIES I

- 13608 02 **Photonic high-entropy alloy nanocomposites made by pulsed laser deposition (Invited Paper)** [13608-1]
- 13608 03 **Unidirectional air-side and substrate-side emission from GaN/InGaN microLEDs** [13608-2]
- 13608 04 **Packaged silicon-photonic slow-light asymmetric Mach-Zehnder interferometer (MZI) for virus detection** [13608-3]
- 13608 05 **Exploring plasmonic hybrid system under extreme pressures (Invited Paper)** [13608-5]

PHOTONIC CRYSTALS, FIBERS, AND THIN FILMS: MATERIALS AND PROPERTIES II

- 13608 06 **Growth behavior and performance of inkjet printable zinc oxide for optoelectronic devices** [13608-7]
- 13608 07 **Numerical predictions of the improvement of solar energy harvesting in inverse opal photonic crystals by tuning the slow-light effect to higher photonic bands** [13608-8]
- 13608 08 **Toward video-based observation for feedback control in drop-on-demand inkjet printing** [13608-9]

PHOTONIC CRYSTALS, FIBERS, AND THIN FILMS: DEVICES AND APPLICATIONS I

- 13608 09 **Inscription of multiplexed gratings in sapphire crystals by femtosecond laser illumination** [13608-12]
- 13608 0A **Loop-terminated Mach-Zehnder interferometer for gas sensing on silicon-on-insulator platform** [13608-13]

PHOTONIC CRYSTALS, FIBERS, AND THIN FILMS: DEVICES AND APPLICATIONS II

- 13608 0B **High-speed optical phased array based on giant electro-optic coefficient KTN crystals** [13608-15]
- 13608 0C **Depth detection using the interpolation algorithm for coaxial fringe projections** [13608-16]
- 13608 0D **Calibrations of color-encoded pattern projections for colorful objects** [13608-17]

POSTER SESSION

- 13608 0E **Dispersion compensation in white-light Michelson interferometer** [13608-19]
- 13608 0F **Fabrication of the PMMA photopolymer for holographic inscription with the wavelength of 633nm** [13608-21]
- 13608 0G **Fabrication of dynamic phase gratings using azobenzene holographic materials** [13608-22]
- 13608 0H **Addressing the boundary of depth-continued surfaces using the fringe projection technique** [13608-23]
- 13608 0I **Characteristics of holographic materials formed by EGPEA/PMMA** [13608-24]
- 13608 0J **Fabrication of Bragg gratings by means of block copolymers** [13608-25]
- 13608 0K **Assessing optical characteristics of nanoparticle inks for inkjet-printed electronics using UV-Vis-NIR spectroscopy** [13608-26]