PROCEEDINGS OF SPIE

Photonic Computing: From Materials and Devices to Systems and Applications III

Xingjie Ni
Wenshan Cai
Editors

24–25 August 2026
San Diego, California, United States

Sponsored and Published by
SPIE

Volume 14195

Proceedings of SPIE 0277-786X, V. 14195

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 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 *Photonic Computing: From Materials and Devices to Systems and Applications III*, edited by Xingjie Ni, Wenshan Cai, Proc. of SPIE 14195, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9798902324508
ISBN: 9798902324515 (electronic)

Published by
SPIE
P.O. Box 10, Bellingham, Washington 98227-0010 USA
Telephone +1 360 676 3290 (Pacific Time)
SPIE.org
Copyright © 2026 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
SPIEDigitalLibrary.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*

NONLINEAR AND EMERGING COMPUTING WITH LIGHT I

14195 02 **Opto-electronic programmable activation function generation circuit for photonic computing** [14195-9]

INTEGRATED PHOTONIC HARDWARE, COMPONENTS, AND ACCELERATORS

14195 03 **Microwave photonic filters based on integrated Kerr microcombs (Invited Paper)** [14195-19]

14195 04 **III–V-on-lithium-niobate balanced photodetector enabled by direct wafer bonding for optical computing** [14195-20]

14195 05 **Performance modeling of photonic accelerators for attention kernel** [14195-32]

ISING, RESERVOIR, AND QUANTUM OPTICAL COMPUTING

14195 06 **Parallel photonic Ising machines enabled by spatial multiplexing (Invited Paper)** [14195-22]

POSTER SESSION

14195 07 **Guidelines for tunability and reconfigurability of an integrated optical tapped delay line filter based on nonlinear wave mixing** [14195-31]