PROCEEDINGS OF SPIE

Sixth Conference on Frontiers in Optical Imaging and Technology: Applications of Imaging Technologies

Zhiping He
Zhi Bin Sun
Editors

22–24 October 2023
Nanjing, China

Organized by
Imaging and Detection Technology Committee, CSOE (China)
Nanjing University of Science and Technology (China)
Nanjing University (China)
Xi'an Technological University (China)
Beihang University (China)
Science and Technology on Low-Light-Level Night Vision Laboratory (China)

Sponsored by
The Chinese Society for Optical Engineering (China)

Published by
SPIE

Volume 13157

Proceedings of SPIE 0277-786X, V. 13157

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

Sixth Conference on Frontiers in Optical Imaging and Technology: Applications of Imaging Technologies,
edited by Zhiping He, Zhi Bin Sun, Proc. of SPIE Vol. 13157, 1315701
 · 0277-786X · doi: 10.1117/12.3032302

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 *Sixth Conference on Frontiers in Optical Imaging and Technology: Applications of Imaging Technologies*, edited by Zhiping He, Zhi Bin Sun, Proc. of SPIE 13157, Seven-digit Article CID Number (DD/MM/YYYY); (DOI URL).

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

ISBN: 9781510679740
ISBN: 9781510679757 (electronic)

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

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

Conference Committee

Conference Chair

Junhao Chu, Shanghai Institute of Technical Physics (China)

Conference Co-chairs

Qian Chen, North University of China (China)
Antoni Rogalski, Military University of Technology (Poland)
Xiaofeng Li, Soochow University (China)
Weiguo Liu, Xi'an Technological University (China)
Yanqing Lu, Nanjing University (China)
Huijie Zhao, Beihang University (China)

Conference Executive Chair

Qian Chen, North University of China (China)

Technical Program Committee

Ming Gao, Xi'an Technological University (China)
Shensheng Han, Shanghai Institute of Optics and Fine Mechanics (China)
Weiqi Jin, Beijing Institute of Technology (China)
Ye Li, Changchun University of Technology (China)
Bo Liu, Institute of Optics and Electronics (China)
Jin Lu, Tianjin Jinhang Institute of Technical Physics (China)
Yanqiu Lv, AVIC CAMA (Shanghai) Infrared Technology Company, Ltd. (China)
Zhichuan Niu, Institute of Semiconductors (China)
Feng Shi, Science and Technology on Low-Light-Level Night Vision Laboratory (China)
Yanli Shi, Yunnan University (China)
Haizhi Song, Southwest Institute of Technical Physics (China)
Jun Wang, University of Electronic Science and Technology of China (China)
Nanjian Wu, Institute of Semiconductors (China)
Jiangtao Xu, Tianjin University (China)
Donglin Xue, Changchun Institute of Optics, Fine Mechanics, and Physics (China)
Xing Yang, National University of Defense Technology (China)
Qiang Zhang, University of Science and Technology of China (China)
Yan Zhou, Institute of Semiconductors (China)
Chao Zuo, Nanjing University of Science and Technology (China)