

PROCEEDINGS OF SPIE

*Photonics and Optoelectronics
Meetings (POEM) 2008*

Optoelectronic Devices and Integration

Liming Zhang
Michael J. O'Mahony
Editors

24–27 November 2008
Wuhan, China

Organized by
WNLO—Wuhan National Laboratory for Optoelectronics

Sponsored by
Huazhong University of Science and Technology (China)
China Hubei Provincial Science Technology Department
WEHDZ—Administration Committee of Wuhan East Lake High-Tech
Development Zone (China)
The State Optoelectronic Information Industry Base of China

Cooperating Organizations
Ministry of Education of China • IEEE Laser & Electro-Optics Society • COS—Chinese Optical Society
Opticsjournal.net • OFweek.com

Published by
SPIE

Volume 7279

Proceedings of SPIE, 0277-786X, v. 7279

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

The papers included 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. The papers published in these proceedings 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 this book:

Author(s), "Title of Paper," in *Photonics and Optoelectronics Meetings (POEM) 2008: Optoelectronic Devices and Integration*, edited by Liming Zhang, Michael J. O'Mahony, Proceedings of SPIE Vol. 7279 (SPIE, Bellingham, WA, 2009) Article CID Number.

ISSN 0277-786X
ISBN 9780819475381

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 © 2009, 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 \$18.00 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/09/\$18.00.

Printed in the United States of America.

Publication of record for individual papers is online in the SPIE Digital Library.

The logo for SPIE Digital Library features the word "SPIE" in a bold, sans-serif font above the words "Digital Library" in a smaller, similar font. To the right of the text is a stylized graphic consisting of three vertical bars of increasing height from left to right, with a curved line above them.

SPIDigitalLibrary.org

Paper Numbering: Proceedings of SPIE follow an e-First publication model, with papers published first online and then in print and on CD-ROM. Papers are published as they are submitted and meet publication criteria. A unique, consistent, permanent citation identifier (CID) number is assigned to each article at the time of the first publication. Utilization of CIDs allows articles to be fully citable as soon they are published online, and connects the same identifier to all online, print, and electronic versions of the publication. SPIE uses a six-digit CID article numbering system in which:

- The first four 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. The complete citation is used on the first page, and an abbreviated version on subsequent pages. Numbers in the index correspond to the last two digits of the six-digit CID number.

Contents

xi *Conference Committee*

OPTOELECTRONIC DEVICES AND INTEGRATION

- 7279 02 **Selective MOVPE of III-nitrides and device fabrication on an Si substrate (Invited Paper)** [7279-91]
N. Sawaki, Nagoya Univ. (Japan)
- 7279 03 **Fabrication of As₂S₈ channel waveguide with a low propagation loss** [7279-01]
L. E. Zou, Nanchang Univ. (China) and Nankai Univ. (China); H. S. Lin, Nanchang Univ. (China); B. X. Chen, Univ. of Shanghai for Science and Technology (China); H. Hamanaka, Hosei Univ. (Japan); M. Iso, Tokyo Univ. of Agriculture and Technology (Japan)
- 7279 04 **Experimental investigation on simultaneous true demodulation of NRZ-DPSK signal and all-optical ODB-to-NRZ and AMI-to-RZ format conversions** [7279-06]
J. Wang, J. Sun, Q. Sun, X. Zhang, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 05 **Synthesis and luminous characteristics of Ba₃CaSi_{2-x}Al_xO₈:Eu, Mn phosphor for white LED** [7279-15]
C. Shen, China Jiliang Univ. (China) and Zhejiang Univ. (China); Y. Yang, S. Jin, Zhejiang Univ. (China); J. Ming, HangZhou DaMing Fluorescent Material Co., Ltd. (China)
- 7279 06 **Design and implementation of PM polarizer based on SiO₂/Si PLC waveguide** [7279-16]
X. Liang, W. Li, Huazhong Univ. of Science and Technology (China); W. Ma, Accelink Technologies Co., Ltd. (China)
- 7279 07 **Application of sampled grating to control the lasing wavelength in complex-coupled DFB laser** [7279-24]
H. Wang, H. Zhu, Institute of Semiconductors (China); L. Jia, X. Chen, Nanjing Univ. (China); D. Kong, L. Wang, W. Zhang, L. Zhao, W. Wang, Institute of Semiconductors (China)
- 7279 08 **A new AOM used for all-fiber high power pulsed fiber laser** [7279-25]
D. Yan, L. Li, X. Liu, Wuhan Huagong Laser Engineering Co., Ltd. (China)
- 7279 09 **Analysis and suppression of interference and noise in FSO** [7279-27]
B. Zhu, Guilin Univ. of Electronic Technology (China); Z. Yuan, Guizhou Univ. for Nationalities (China) and Guilin Univ. of Electronic Technology (China); J. Zhang, Guilin Univ. of Electronic Technology (China)
- 7279 0A **Vertical resonant-cavity narrowband infrared thermal emitter** [7279-29]
H. Liang, J. Lai, Wuhan National Lab. for Optoelectronics (China) and Huazhong Univ. of Science and Technology (China); Z. Zhou, Wuhan National Lab. for Optoelectronics (China)

- 7279 0B **Study on temperature dependence of infrared optical properties of vanadium dioxide film** [7279-31]
Q. Jiang, Univ. of Shanghai for Science and Technology (China); Y. Li, Univ. of Shanghai for Science and Technology (China) and Shanghai Key Lab. of Modern Optical System (China); S. Hu, B. Wu, X. Yu, H. Wang, Univ. of Shanghai for Science and Technology (China)
- 7279 0C **Effect of modulator chirp on carrier suppressed double sideband radio over fiber link** [7279-32]
X. Chen, S. Feng, D. Chen, China Three Gorges Univ. (China)
- 7279 0D **Single-longitudinal-mode erbium-doped fiber laser with multiple linear cavity** [7279-33]
S. Feng, O. Xu, S. Lu, W. Ren, S. Jian, Beijing Jiaotong Univ. (China)
- 7279 0E **Switchable dual-wavelength fiber laser based on semiconductor optical amplifier and polarization-maintaining fiber Bragg grating** [7279-34]
S. Feng, O. Xu, S. Lu, W. Ren, S. Jian, Beijing Jiaotong Univ. (China)
- 7279 0F **Multiwavelength SOA fiber ring laser incorporating a dual-pass Mach-Zehnder interferometer filter** [7279-35]
F. Wang, Huazhong Univ. of Science and Technology (China) and Chongqing Institute of Technology (China); X. Zhang, J. Dong, Y. Yu, X. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 0G **Multiwavelength mode-locked fiber laser incorporating two SOAs and a DCF** [7279-39]
F. Wang, Huazhong Univ. of Science and Technology (China) and Chongqing Institute of Technology (China); X. Zhang, J. Dong, X. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 0H **A proposal for two-input arbitrary Boolean logic gates based on single semiconductor optical amplifier** [7279-43]
J. Dong, X. Zhang, J. Xu, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 0I **A new optical interconnection module for high coupling efficiency on EOPCB** [7279-44]
L. Zong, F. Luo, Z. Yu, Huazhong Univ. of Science and Technology (China)
- 7279 0J **Influence of the crystal characterization of CsI thin film for x-ray image detectors** [7279-45]
S. Liu, X. Chen, Z. Zhong, Univ. of Electronic Science and Technology of China (China); C. M. Falco, College of Optical Sciences, Univ. of Arizona (China)
- 7279 0K **DFT study of geometries and stability of B_n clusters ($n=2-8$)** [7279-46]
D.-M. Li, Z.-H. Xiong, Q.-X. Wan, G.-D. Liu, W.-R. Zhang, Z. Ren, Jiangxi Science and Technology Normal Univ. (China)
- 7279 0L **All-optical tunable microwave interference suppression filter based on SOA** [7279-48]
E. Xu, X. Zhang, L. Zhou, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 0M **Dual active microring optical integrators coupled via 3×3 couplers for loadable and erasable memory** [7279-49]
Y. Ding, X. Zhang, X. Zhang, D. Huang, Huazhong Univ. of Science and Technology (China)

- 7279 ON **Theoretical study of InGaAsP-InP active microring** [7279-50]
Y. Ding, X. Zhang, X. Zhang, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 OO **Enhanced light-extraction in GaN light-emitting diode with binary blazed grating reflector** [7279-52]
W. Wu, H. Wu, T. Wu, Y. Wang, Huazhong Univ. of Science and Technology (China); Z. Zhou, Peking Univ. (China) and Georgia Institute of Technology (United States)
- 7279 OP **Theoretical study of ultrafast index dynamics in semiconductor optical amplifiers** [7279-53]
X. Huang, X.-L. Zhang, F. Wang, D.-X. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 OQ **A new design of WDM-based optical inter-satellite links in modern small satellite constellations** [7279-56]
Z. Yu, F. Luo, L. Zong, Q. Tao, Huazhong Univ. of Science and Technology (China)
- 7279 OR **The discrete between o-ray and e-ray in the Savart polariscope** [7279-57]
J. Wu, H. Liu, Xi'an Polytechnic Univ. (China)
- 7279 OS **Preparation and second-harmonic generation in Pb-doped oxide glasses** [7279-58]
Q. Liu, M. Wang, X. Zhao, Wuhan Univ. of Technology (China)
- 7279 OT **Partial gating image intensifier based on liquid crystal auto-controlling light intensity** [7279-59]
R. Zhang, Y. Tang, K. Liu, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); X. Yang, H. Gao, Y. Liang, Q. Li, N. Ye, G. Zhao, Xi'an Univ. of Technology (China)
- 7279 OU **InGaN/GaN multi-quantum-well structures and GaN micromechanical structures on silicon-on-insulator substrates** [7279-62]
L. S. Wang, Huazhong Univ. of Science and Technology (China); S. Tripathy, S. J. Chua, S. Vicknesh, V. K. X. Lin, K. Y. Zang, J. Arokiaraj, A. Ramam, A*STAR (Singapore)
- 7279 OV **Nonlinearities of PIN photodiodes and PSPICE simulation** [7279-64]
Y. Zhao, Huazhong Univ. of Science and Technology (China)
- 7279 OW **Study on the time delay of uniform fiber Bragg gratings** [7279-65]
W. Ren, J. Zheng, Y. Wang, P. Tao, S. Feng, S. Jian, Beijing Jiaotong Univ. (China)
- 7279 OX **Ab initio study of Ag-related defects in ZnO** [7279-66]
Q. Wan, Z. Xiong, D. Li, G. Liu, Jiangxi Science & Technology Normal Univ. (China)
- 7279 OY **Single-longitudinal-mode DBR fiber laser based on the self-made photosensitive Er-doped fiber** [7279-67]
W. Ren, J. Zheng, Y. Wang, P. Tao, Z. Tan, S. Jian, Beijing Jiaotong Univ. (China)
- 7279 OZ **Modulation transfer function of partial gating detector by liquid crystal auto-controlling light intensity** [7279-69]
X. Yang, Y. Tang, K. Liu, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); H. Gao, Q. Li, R. Zhang, N. Ye, Y. Liang, G. Zhao, Xi'an Univ. of Technology (China)

- 7279 10 **Study of liquid crystal based on auto-controlling light intensity** [7279-71]
N. Ye, Y. Tang, L. Kai, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); H. Gao, R. Zhang, G. Zhao, Y. Liang, Q. Li, X. Yang, Xi'an Univ. of Technology (China)
- 7279 11 **Circuit design of partial gating image based on Cyclone II and HTPS** [7279-74]
Q. Li, Y. Tang, K. Liu, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); H. Gao, R. Zhang, G. Zhao, N. Ye, Y. Liang, X. Yang, Xi'an Univ. of Technology (China)
- 7279 12 **Numerical simulation studies of nano-scale surface plasmon components: waveguides, splitters, and filters** [7279-79]
X.-S. Lin, X.-G. Huang, South China Normal Univ. (China)
- 7279 13 **Microwave photonic filters with high Q value** [7279-80]
L. Zhou, Huazhong Univ. of Science and Technology (China) and China Univ. of Geosciences (China); X. Zhang, E. Xu, Huazhong Univ. of Science and Technology (China)
- 7279 14 **Investigation of slow light utilized as optical storage in photonic crystal coupled resonator optical waveguide** [7279-84]
C. Li, Qingdao Univ. (China); H. Tian, Y. Ji, Beijing Univ. of Posts & Telecommunications (China)
- 7279 15 **Theoretical and experimental study of Goos-Hänchen shifts on symmetrical metal-cladding waveguides** [7279-89]
L. Chen, Univ. of Shanghai for Science and Technology (China); Z. Cao, Shanghai Jiao Tong Univ. (China); D. Zhang, Y. Zhu, S. Zhuang, Univ. of Shanghai for Science and Technology (China)
- 7279 16 **The effects of trigger light pulses on the response speed of semi-insulating GaAs photoconductive switches** [7279-98]
H. Dai, H. Li, J. Xu, Z. Fu, G. Chen, Air Force Engineering Univ. (China)
- 7279 17 **The investigation of thin film growth on the surface of sub-wave grating microstructure** [7279-100]
L. Yuan, D. Zhang, Y. Zhu, Y. Huang, Z. Ni, Univ. of Shanghai for Science and Technology (China)
- 7279 18 **Mechanisms of ultrafast coherent all-optical polarization switch in semiconductors** [7279-102]
W. Wang, M. Zhai, J. Zhang, Y. Chen, Y. Gan, Hubei Univ. (China)
- 7279 19 **Chirp characteristics of wavelength converter in multi-electrode semiconductor optical amplifiers** [7279-103]
P. Tian, L. Huang, L. Yan, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 1A **Study on polarization dependency of InAs quantum dot coupled InGaAsP quantum well SOA** [7279-104]
Y. Yu, L. Huang, D. Huang, Huazhong Univ. of Science and Technology (China)

- 7279 1B **High quality α -plane GaN layers grown by pulsed atomic-layer epitaxy on r -plane sapphire substrates** [7279-105]
J. Dai, Huazhong Univ. of Science and Technology (China); Z. Wu, Huazhong Univ. of Science and Technology (China) and Arizona State Univ. (United States); X. Han, Q. He, Y. Sun, C. Yu, L. Zhang, L. Tong, Y. Gao, C. Chen, Huazhong Univ. of Science and Technology (China)
- 7279 1C **A novel approach to fabricate three-dimensional carbon-based interconnect for micro/nano optoelectronic integration** [7279-106]
P. Peng, Wuhan National Lab. for Optoelectronics (China); Z. Tang, T. Shi, G. Liao, Huazhong Univ. of Science and Technology (China); J. Gong, Y. Yao, Wuhan National Lab. for Optoelectronics (China)
- 7279 1D **Analysis and design of tunable fiber Fabry-Perot filter** [7279-107]
H. Qi, Huazhong Univ. of Science and Technology (China) and Huangshi Institute of Technology (China); Y. Yu, Huazhong Univ. of Science and Technology (China)
- 7279 1E **Effects of the Al composition in AlGaIn buffer layer on α -plane GaN films grown on r -plane sapphire substrate by MOCVD** [7279-108]
Q. Zhang, Huazhong Univ. of Science and Technology (China); Z. H. Wu, Huazhong Univ. of Science and Technology (China) and Arizona State Univ. (United States); J. Dai, L. Zhang, Q. He, Y. Sun, C. Chen, Huazhong Univ. of Science and Technology (China)
- 7279 1F **Improved neural network algorithm: application in the compensation of wavefront distortion** [7279-111]
Z. Zhou, X. Yuan, J. Wang, Huazhong Univ. of Science and Technology (China)
- 7279 1G **Transparent wavelength conversion for a novel orthogonal FSK/IM modulation format at 40-Gb/s based on FWM effect of SOA** [7279-112]
M. Li, W. Hong, X. Zhang, S. Zhong Ke Li, W. Song, C. Han, M. Zhu, W. Li, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 1H **$\text{Al}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ DBR resonant-cavity based monolithic white LED** [7279-113]
Y. Chen, L. Huang, S. Zhu, Huazhong Univ. of Science and Technology (China)
- 7279 1I **Effect of ampoule coating technology on defects in CdZnTe crystal** [7279-114]
C. Liu, S. Sun, H. Xu, Shanghai Institute of Technical Physics (China)
- 7279 1J **High quality AlN films grown by pulsed atomic-layer epitaxy** [7279-116]
H. Wang, R. Xiang, Q. Zhang, J. Dai, Q. He, Huazhong Univ. of Science and Technology (China); Z. Wu, Huazhong Univ. of Science and Technology (China) and Arizona State Univ. (United States); C. Chen, Huazhong Univ. of Science and Technology (China)
- 7279 1K **Optical and thermal modeling of ultraviolet-LED array packaging for curing application** [7279-120]
H. Liu, Z. Tang, T. Shi, G. Liao, L. Nie, Huazhong Univ. of Science and Technology (China)
- 7279 1L **Epitaxial growth α -plane ZnO films on α -GaIn/r- Al_2O_3 templates** [7279-122]
C. Liu, J. Dai, Huazhong Univ. of Science and Technology (China); Z. Wu, Huazhong Univ. of Science and Technology (China) and Arizona State Univ. (United States); X. Han, Q. He, C. Yu, L. Zhang, Y. Gao, C. Chen, Huazhong Univ. of Science and Technology (China)

- 7279 1M **Transparency in two cascaded stages of microring coupled-resonator optical waveguides** [7279-125]
X. Zhang, Y. Ding, X. Zhang, D. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 1N **A high-speed current driver circuit board for wavelength control of widely tunable laser** [7279-127]
H. Lv, Y. Yu, D. Huang, K. Shi, Huazhong Univ. of Science & Technology (China); L. Dong, R. Zhang, Accelink Technologies Co., Ltd (China)
- 7279 1O **All-optical tunable delay line based on wavelength conversion in semiconductor optical amplifiers and fiber dispersion in single-mode fiber** [7279-128]
Z. Hu, J. Sun, Huazhong Univ. of Science and Technology (China)
- 7279 1P **Optical characterization of iridescent wings of butterflies using multilayer rigorous coupled wave analysis** [7279-132]
G. Liao, Huazhong Univ. of Science and Technology (China); Y. Cao, T. Shi, Wuhan National Lab. for Optoelectronics (China); H. Zuo, P. Peng, Huazhong Univ. of Science and Technology (China); Z. Tang, Wuhan National Lab. for Optoelectronics (China)
- 7279 1Q **Creating large bandwidth photonic crystal slab waveguide by tailoring the dispersion curve of waveguide mode** [7279-135]
K. Chen, D. Yang, W. He, Zhejiang Univ. (China)
- 7279 1R **Ultrahigh speed uni-traveling-carrier photodiodes based on materials of short carrier lifetime** [7279-138]
J. Chen, J. Sun, Huazhong Univ. of Science and Technology (China)
- 7279 1S **Development on miniature detector for soft x-ray used in laser plasma interaction experiments** [7279-139]
Z. Wang, X. Tang, Univ. of Electronic Science and Technology of China (China); R. Yi, Laser Fusion Research Ctr., CAEP (China); Q. Sun, C. Gao, Y. Zhou, L. Yang, Y. Wang, Univ. of Electronic Science and Technology of China (China)
- 7279 1T **Experimental investigation on slow light via four-wave mixing in semiconductor optical amplifiers** [7279-140]
Y. Zhang, X. Zhang, X. Huang, Huazhong Univ. of Science and Technology (China)
- 7279 1U **Proposal for a novel and simple WDM NRZ-DPSK system** [7279-141]
Y. Yu, Univ. of Cambridge (United Kingdom) and Huazhong Univ. of Science and Technology (China); X. L. Zhang, Huazhong Univ. of Science and Technology (China); J. B. Rosas-Fernández, Univ. of Cambridge (United Kingdom); D. X. Huang, Huazhong Univ. of Science and Technology (China); R. V. Penty, I. H. White, Univ. of Cambridge (United Kingdom)
- 7279 1V **The characteristic deviation compensation of guided-mode resonant filters** [7279-143]
D. Zhang, Y. Huang, Z. Ni, Univ. of Shanghai for Science and Technology (China)
- 7279 1W **Optical properties of amorphous silicon thin films fabricated by RF magnetron sputtering** [7279-147]
B. Liu, Q. Zhao, P. Zheng, Wuhan Univ. of Technology (China)

- 7279 1X **Liquid crystal variable focus lens based on Fresnel zone plate** [7279-152]
Q. Wang, D.-W. Zhang, J.-B. Chen, S.-L. Zhuang, Univ. of Shanghai for Science and Technology (China)
- 7279 1Y **Enhancement latitude of civil digital photography system by liquid crystal** [7279-70]
G. Zhao, Y. Tang, K. Liu, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); H. Gao, R. Zhang, Y. Liang, Q. Li, X. Yang, N. Ye, Xi'an Univ. of Technology (China)
- 7279 1Z **Control circuit design of novel partial gating detector by liquid crystal** [7279-78]
Y. Liang, Y. Tang, K. Liu, Xi'an Univ. of Technology (China); H. Liu, Xi'an Polytechnic Univ. (China); R. Zhang, H. Gao, G. Zhao, Q. Li, N. Ye, X. Yang, Xi'an Univ. of Technology (China)
- 7279 20 **Broad omnidirectional high-precision two-channel filter design using genetic algorithm** [7279-10]
W. Jia, L. Jiang, G. Zheng, X. Li, H. Li, Nanjing Univ. of Science and Technology (China)
- 7279 21 **Design and simulation of the AC-coupled burst-mode optical receiver with the small time constant** [7279-73]
Q. Huang, L. Liu, S. Li, L. Sun, Wuhan Univ. of Technology (China)

Author Index

Conference Committee

Conference Committee

Qiming Wang, The Semiconductor Research Institute, Chinese Academy of Sciences (China)
Liming Zhang, Bell Laboratories (United States)
Siyuan Yu, University of Bristol (United Kingdom)
I. H. White, Cambridge University (United Kingdom)
Michael J. O'Mahony, University of Essex (United Kingdom)
Junqiang Sun, Wuhan National Laboratory for Optoelectronics (China)
Dexiu Huang, Wuhan National Laboratory for Optoelectronics (China)
Wen Liu, Wuhan National Laboratory for Optoelectronics (China)
Xinliang Zhang, Wuhan National Laboratory for Optoelectronics (China)

Program Committee

Junqiang Sun, *Chair*, Wuhan National Laboratory for Optoelectronics (China)
Yonglin Yu, Wuhan National Laboratory for Optoelectronics (China)
Xiuhua Yuan, Wuhan National Laboratory for Optoelectronics (China)
Changqing Chen, Wuhan National Laboratory for Optoelectronics (China)
Zhefeng Hu, Wuhan National Lab Laboratory Optoelectronics (China)

