

Photonics Asia

China's premier international symposium for optics and photonics

20-23 October 2019

Hangzhou International Expo Center
Hangzhou, China

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#SPIEPhotonicsAsia

Optoelectronic Devices and Integration VIII

Conference Chairs: **Xuping Zhang**, Nanjing Univ. (China); **Baojun Li**, Jinan Univ. (China); **Changyuan Yu**, The Hong Kong Polytechnic Univ. (Hong Kong, China); **Xinliang Zhang**, Wuhan National Lab. for Optoelectronics (China)

Conference Co-Chair: **Daoxin Dai**, Zhejiang Univ. (China)

Program Committee: **Dayan Ban**, Univ. of Waterloo (Canada); **Zhongping Chen**, Beckman Laser Institute and Medical Clinic (United States); **Ho-Pui Ho**, The Chinese Univ. of Hong Kong (Hong Kong, China); **Jan Ingenhoff**, Ionexphotonics Inc. (Canada); **Zhongcheng Liang**, Nanjing Univ. of Posts and Telecommunications (China); **Xuejun Lu**, Univ. of Massachusetts Lowell (United States); **Ali Masoudi**, Univ. of Southampton (United Kingdom); **Hai Ming**, Univ. of Science and Technology of China (China); **Gang-Ding Peng**, The Univ. of New South Wales (Australia); **Yaocheng Shi**, Zhejiang Univ. (China); **Yuan Shi**, Agilecom Photonic Solutions Inc. (United States); **Anna K. Swan**, Boston Univ. (United States); **Frank Vollmer**, Max-Planck-Institut für die Physik des Lichts (Germany); **Daniel M. Wasserman**, The Univ. of Texas at Arlington (United States); **Lixin Xu**, Univ. of Science and Technology of China (China); **Yang Yang**, Zhejiang Univ. of Technology (China); **Ningmu Zou**, Advanced Micro Devices, Inc. (United States)

TUESDAY 22 OCTOBER

SESSION 1TUE 8:00 TO 10:10

Optoelectronic Devices and Integration I

Session Chairs: **Daoxin Dai**, Zhejiang Univ. (China);
Jianwei Wang, Peking Univ. (China)

Silicon nanophotonics for computation, interconnects, and sensing (*Invited Paper*), Ray T. Chen, The Univ. of Texas at Austin (United States) [11184-1]

High-density waveguide superlattices for optical interconnects and optical phased arrays (*Invited Paper*), Wei Jiang, Nanjing Univ. (China) [11184-2]

Smart silicon photonic signal processor (*Invited Paper*), Jianji Dong, Huazhong Univ. of Science and Technology (China) [11184-3]

Two-wavelength x three-mode hybrid multiplexer/demultiplexer based on photonic crystals, Lianxiang Liu, Nanjing Univ. of Posts and Telecommunications (China) [11184-4]

The design of integrated four-channel Mach-Zehnder multi/demultiplexer based on LNOI platform, Xia Liang, Wuhan National Lab. for Optoelectronics (China) [11184-5]

SESSION 2TUE 10:40 TO 12:10

Optoelectronic Devices and Integration II

Session Chairs: **Daoxin Dai**, Zhejiang Univ. (China);
Wei Jiang, Nanjing Univ. (China)

Quantum information processing with integrated photonics (*Invited Paper*), Jianwei Wang, Peking Univ. (China) [11184-6]

Large-scale wavelength multi/demultiplexer in combination with a spatial grating and arrayed waveguide gratings, Akihisa Otori, Hiroyuki Tsuda, Keio Univ. (Japan) [11184-7]

Comparison of fabrication tolerance of broadband silicon photonic directional couplers, Qiuyang Jiang, Guangfan Tao, Xiangning Chen, Nanjing Univ. (China) [11184-8]

Concave blaze grating with aberration-corrected freeform and variable line spacing for hyperspectral imaging applications, Cheng-Hao Ko, National Taiwan Univ. of Science and Technology (Taiwan) [11184-9]

Lunch Break Tue 12:10 to 13:30

POSTER SESSIONTUE 13:00 TO 14:30

Conference attendees are invited to attend the poster session on Tuesday afternoon. Come view the posters, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster session.

Poster Setup Tuesday 10:00 AM – 1:00 PM

View poster presentation guidelines and set-up instructions at
<http://spie.org/PAPosterGuidelines>

Compact confinement of radially polarized light in graphene cylindrical hybrid plasmonic waveguide, Sicheng Zhang, Kang Li, Xinyi Lu, Ji Xu, Nanjing Univ. of Posts and Telecommunications (China) [11184-34]

The systematic analysis of epitaxial self-assembled GaN/AlN QDs in S-K method by MOCVD, Zhiqiang Qi, Haocheng Sun, Wenliang Hu, Huazhong Institute of Electro-Optics (China) [11184-35]

Image restoration for multi-sub-mirror synthetic aperture system, Xiaoyao Liu, Zhongcheng Liang, Weiqian Hao, Rui Zhao, Meimei Kong, Tao Chen, Nanjing Univ. of Posts and Telecommunications (China); Yue Zhang, Beijing Institute of Space Mechanics and Electricity (China) [11184-36]

Nearly arbitrary pulse-shaping in mode-locked gain-modulated SOA-fibre laser, Sergey M. Kobtsev, Novosibirsk State Univ. (Russian Federation); Boris Nyushkov, Novosibirsk State Univ. (Russian Federation) and Novosibirsk State Technical Univ. (Russian Federation); Alexey Ivanenko, Sergey Smirnov, Novosibirsk State Univ. (Russian Federation) [11184-37]

Numerical simulation of the effects of InAlSb barrier layers on the InSb mid-infrared photodetectors on a mismatched substrate, Zhi Qin Zhao, Xu Qian, Bo Wen Wang, Bo Wen Jia, Wuhan Univ. of Technology (China) [11184-38]

A SOI waveguide grating coupler enhanced by additional silicon nitride layer, Xiaotao Shan, Zan Zhang, Chang'an Univ. (China); Beiju Huang, Institute of Semiconductors (China); Zanyun Zhang, Tianjin Polytechnic Univ. (China); Chuantong Cheng, Institute of Semiconductors (China); Bing Bai, Tianxi Gao, Xiaobo Xu, Chang'an Univ. (China); Hongda Chen, Institute of Semiconductors (China) [11184-39]

Research on 1x4 polarization-independent beam splitter based on silicon waveguides, Zhengman Zhang, Nanjing Univ. of Posts and Telecommunications (China); He-Ming Chen, Nanjing Univ. of Science and Technology (China) [11184-40]

New method of wavelength stabilisation in CPT atomic clocks, Sergey M. Kobtsev, Daba Radnatarov, Sergey Khripunov, Valerii Andryushkov, Novosibirsk State Univ. (Russian Federation); Yurii Zarudnev, Novosibirsk State Univ. (Russian Federation) and Tekhnoscan-Lab (Russian Federation) [11184-41]

LBS underwater precision positioning system, Kai Cheng, Shuang Xu, Jun Liu, Ocean Univ. of China (China) [11184-42]

Resistive switching memory devices based on quantum dots, Zhiliang Chen, Yating Zhang, Yu Yu, Lufan Jin, Yifan Li, Jianquan Yao, Tianjin Univ. (China) [11184-43]

Transparent nanostructured ZnS films by low-temperature sputtering for flexible optoelectronic devices, Yuanjie Li, Shoab Muhammad, Xuan Zhu, Xi'an Jiaotong Univ. (China) [11184-44]

Microring lasers based on Si₃N₄ optical waveguides clad with perovskite quantum-dot composite film, Erhu Liu, Zhejiang Univ. (China); Linghai Meng, Beijing Institute of Technology (China); Yuluan Xiang, Daoxin Dai, Zhejiang Univ. (China); Haizheng Zhong, Beijing Institute of Technology (China) [11184-45]

High-speed active components R&D on 200mm CMOS-compatible silicon photonics platform, Bo Tang, Peng Zhang, Bin Li, Yan Yang, Ruonan Liu, Junfeng Li, Zhihua Li, Institute of Microelectronics (China) [11184-46]

SESSION 3TUE 14:30 TO 17:10

Optoelectronic Devices and Integration III

Session Chairs: **Baojun Li**, Jinan Univ. (China); **Vilson Rosa Almeida**, Instituto Tecnológico de Aeronáutica (Brazil)

Si-GST hybrid integration for non-volatile photonic devices (*Invited Paper*), Linjie Zhou, Hanyu Zhang, Hao Hu, Ningning Wang, Liangjun Lu, Jianping Chen, Shanghai Jiao Tong Univ. (China) [11184-10]

High performance and CMOS-compatible photonic switches based on phase change materials (*Invited Paper*), Rajesh Kumar, Nadir Ali, Shubham Singh, Indian Institute of Technology Roorkee (India) [11184-11]

From optical space switching to optical mode switching (*Invited Paper*), Lin Yang, Institute of Semiconductors (China) [11184-12]

Temperature-controlled Si ring modulators (*Invited Paper*), Woo-Young Choi, Yonsei Univ. (Korea, Republic of) [11184-13]

Temperature-Controlled Si Ring Modulators

Woo-Young Choi¹, Min-Hyeong Kim¹, Minkyu Kim¹,
Christian Mai², Stefan Lischke², and Lars Zimmermann²

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