The 23rd International Conference on Optical Communications and Networks (ICOCN 2025)

July 28-31, 2025

Sunshine Hotel, Zhangjiajie, China

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Welcome to the 23rd International Conference on Optical Communications and Networks

It is a great pleasure to invite you to participate in the 23rd International Conference on Optical Communications and Networks (ICOCN2025) and share the latest news in communications and photonics science, technology and innovations from leading universities, research laboratories and companies throughout the world. ICOCN has been held annually tracing back to 2002. It is now one of the largest international conferences on optical communications, photonics and relevant technologies.

ICOCN2025 features plenary, keynote, invited, and contributed talks by leading international researchers from academia and industry. This year's conference will address the following topics: Optical fibers and fiber-based devices; Optical transmission systems, subsystems and technologies; Networks architectures, management and applications; Optoelectronic integration and devices; Optical signal processing and microwave photonics; Optical measurements and imaging; Ultrafast photonics and nonlinear optics; Free space communications; Optoelectronics based organic on and nanostructured materials; Machine learning for photonics and communications; 2D-materials based photonics; Optical biosensors, imaging and theranostics.

ICOCN2025's comprehensive, high-quality program offers the perfect platform to discover emerging research trends and connect with the leaders driving these innovations. We have over 680 presentations scheduled, including 4 plenary speeches and 300 keynote & invited talks given by many of the world's most prominent researchers from academia and industry. We thank all the contributors and authors for making ICOCN2025 a truly unique, outstanding global event.

There will be one plenary session, 70 regular technical sessions, and two post-deadline paper se-

ssions. The plenary session is scheduled on the morning of Tuesday, 29th July. Four distinguished speakers will give presentations: Prof. Xiaomin Ren from Beijing University of Posts and Telecommunications will present on Novel understanding of micro-particles: the rest-energy excluded frequencydetermination energy and the potential-energyaffected wavelength. Prof. Libo Yuan from Guilin University of Electronic Science and Technology will talk on entitled by Remarks on In-fiber Integrated Optic Devices and Components. Dr. Chongjin Xie from PhotonicX AI will report on Optical Interconnects for AI Datacenters and Prof. Bai-ou Guan from Jinan University on Photoacoustic imaging empowered by fiber-optic ultrasonic sensors.

Young Scientist Awards will be given to 2 young researchers with the age no more than 40 by the conference date who make outstanding contributions and present on our conference. In addition, 10 Best Student Paper Awards and 10 Best Poster Awards will be selected by the Technical Committee or expert panel during the conference. All these awards will be presented during the conference banquet on the evening of Wednesday, 30 July. In addition to the technical program, there will be impressive exhibitions from the relevant industries, publishers and professional organizations.

We have also prepared a rich social program to facilitate meeting and networking with colleagues from so many universities and cities. On the evening of Wednesday, 30 July, the Banquet and Awards Ceremony will be held for all conference registrants. Lucky-draw will be carried out for those who help us select the Best Poster Award by submitting the award ticket.

It is an enormous task to organize a conference and it is impossible to succeed without the dedicated efforts of many supporters and volunteers. We are indebted to the entire Technical Program Committee and the Subcommittee Chairs who have worked persistently throughout the whole year to invite speakers, solicit and review papers, organize the technical sessions which results in the excellent technical program. We thank the staff and volunteers from Hunan Univ., Guangdong Univ. of Technology and China Jiliang Univ. We also thank the IEEE Photonics Society, IEEE Guangzhou Section, IEEE Photonics Society Guangdong Chapter for sponsoring the event.

Sincerely,



Ping Shum Southern Univ. Sci. Tech. General Chair



Shuangchun Wen Hunan University General Chair



Pu Zhou National Univ. of Defense Tech. General Chair

Committees

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Perry Shum, Southern Univ. of Sci. and Tech., China Shuangchun Wen, Hunan Univ., China Pu Zhou, National Univ. of Defense Tech., China

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Subcommittees

Track 1: Optical fibers and fiber-based devices

Weihong Bi, Yanshan Univ., China, Chair Tuan Guo, Jinan Univ., China, Chair Liyang Shao, Southern Univ. of Sci. and Tech., China, Chair Lei Su, Queen Mary Univ. of London, UK, Chair Xinyu Fan, Shanghai Jiao Tong Univ., China Yuan Gong, Univ. of Electronic Sci. and Tech. of China, China Yasuhiro Koike, Keio Univ., Japan Yan Li, Handan Univ., China Hongpu Li, Shizuoka Univ., Japan Bo Liu, Nankai Univ., China Yan'ge Liu, Nankai Univ., China Yungi Liu, Shanghai Univ., China Shuqin Lou, Beijing Jiaotong Univ., China Ping Lu, Huazhong Univ. of Sci. and Tech., China Chengbo Mou, Shanghai Univ., China Wai Pang Ng, Northumbria Univ., UK Wei Peng, Dalian Univ. of Tech., China Yuki Saito, Sumitomo Electric Industries, Ltd., Japan Guangming Tao, Huazhong Univ. of Sci. and Tech., China Anbang Wang, Taiyuan Univ. of Tech., China Liang Wang, Huazhong Univ. of Sci. and Tech., China Yiping Wang, Shenzhen Univ., China Zinan Wang, Univ. of Electronic Sci. and Tech. of China Qiang Wu, Northumbria Univ., UK

Li Xia, Huazhong Univ. of Sci. and Tech., China Jun Yang, Guangdong Univ. of Tech., China Minghong Yang, Wuhan Univ. Tech., China Xia Yu, Beijing Univ. of Aeronautics and Astronautics, China Han Zhang, Shenzhen Univ., China Jianzhong Zhang, Harbin Engineering Univ., China Mingjiang Zhang, Taiyuan Univ. of Tech., China Wentao Zhang, Chinese Academy of Sci., China Yong Zhao, Northeastern Univ., China Guiyao Zhou, South China Normal Univ., China Tao Zhu, Chongqing Univ., China

Track 2: Optical transmission systems, subsystems and technologies

Xiaoguang Zhang, Beijing Univ. Posts and Tel., China, Chair Jian Chen, Nanjing Univ. of Posts and Tel., China, Chair Songnian Fu, Guangdong Univ. of Tech., China, Chair Lilin Yi, Shanghai JiaoTong Univ., China, Chair Tianwai Bo, Beijing Inst. of Tech., China Jiangbing Du, Shanghai Jiao Tong Univ., China Shanguo Huang, Beijing Univ. of Posts and Tel., China Alan Pak Tao Lau, Hong Kong Polytechnic Univ., HK SAR Borui Li, Huawei Technologies Co., Ltd., China Jiangiang Li, Beijing Univ. of Posts and Tel., China Zhengxuan Li, Shanghai Univ., China Bo Liu, Nanjing Univ. of Information Sci. & Tech., China Yong Liu, Univ. of Electronic Sci. and Tech. of China, China Xiurong Ma, Tianjing Univ. Tech., China Keiichi Matsumoto, NEC Corporation, Japan Itsuro Morita, KDDI Research, Japan Periklis Petropoulos, Univ. of Southampton, UK Ben Puttnam, NICT, Japan Georg Rademacher, NICT, Japan

Ming Tang, Huazhong Univ. of Sci. and Tech., China Jian Wu, Beijing Univ. of Posts and Tel., China Kun Xu, Beijing Univ. of Posts and Tel., China Fatih Yaman, NEC Laboratories, USA Lianshan Yan, Southwest Jiaotong Univ., China Qi Yang, Huazhong Univ. of Sci. and Tech., China Xingwen Yi, Sun Yat-sen Univ., China Yang Yue, Xi'an JiaotongUniv., China Fan Zhang, Peking Univ., China

Track 3: Networks architectures, management and applications

Jie Zhang, Beijing Univ. of Posts and Tel., China, Chair Zuging Zhu, Univ. of Sci. and Tech. of China, China, Chair Gangxiang, Shen, Soochow Univ., China, Chair Jiajia Chen, KTH, Royal Inst. of Tech., Sweden, Chair Bowen Chen, Soochow Univ., China Shailendra Gaikwad, Univ. of Louisiana at Lafayette, USA Huaxi Gu, Xidian Univ., China Bingli Guo, Beijing Univ. of Posts and Tel., China Hongxiang Guo, Beijing Univ. of Posts and Tel., China Weigang Hou, Northeastern Univ., China Brigitte Jaumard, Concordia Univ., Canada Hoon Kim, KAIST, Korea Juhao Li, Peking Univ., China Rui Lin, KTH Royal Inst. of Tech., Sweden Gordon Ning Liu, Soochow Univ., China Wei Lu, Univ. of Sci. and Tech. of China, China Carmen Mas Machuca, Technical Univ. of Munich, Germany Avishek Nag, Univ. College Dublin, Ireland Kim Khoa Nguyen, École de technologie supérieure, Canada Wenda Ni, Azure Networking, Microsoft, Canada Jelena Pesic, Nokia Bell Labs, France

Houman Rastegarfar, Univ. of Arizona, USA Jesse Simsarian, Nokia Bell Labs, USA Elaine Wong, Univ. of Melbourne, Australia Wei Xu, Tsinghua Univ., China Yongli Zhao, Beijing Univ. of Posts and Tel., China Min Zhu, Southeast Univ., China

Track 4: Optoelectronic integration and devices

Xun Li, McMaster Univ., Canada, Chair Yikai Su, Shanghai Jiao Tong Univ., China, Chair Jian Wang, Huazhong Univ. of Sci. and Tech., China, Chair Linjie Zhou, Shanghai Jiao Tong Univ., China, Chair Xinlun Cai, Sun Yat-sen Univ., China Haoshuo Chen, Nokia, USA Guangwei Cong, AIST, Japan Bo Dong, Shenzhen Tech. Univ., China Xuetao Gan, Northwestern Polytechnical Univ., China Wenhua Gu, Nanjing Univ. of Sci. and Tech., China Ran Hao, Zhejiang Univ., China Ho Pui Aaron HO, Chinese Univ. of Hong Kong, HK SAR Yong-Zhen Huang, Chinese Academy of Sci., China Yuging Jiao, Eindhoven Univ. of Tech., Netherlands Mingyu Li, Zhejiang Univ., China Di Liang, Hewlett Packard Labs, USA Shinji Matsuo, NTT Device Tech. Laboratories, Japan Ting Mei, Northwestern Polytechnical Univ., China Xiaodong Pi, Zhejiang Univ., China Minhao Pu, Technical Univ. of Denmark, Denmark Wei Shi, Laval Univ., Canada Yaocheng Shi, Zhejiang Univ., China Jungiang Sun, Huazhong Univ. of Sci. and Tech., China Xiankai Sun, Chinese Univ. of Hong Kong, Hong Kong SAR Yunxu Sun, Harbin Inst. of Tech. Shenzhen, China Hiroyuki Tsuda, Keio Univ., Japan

Jianwei Wang, Peking Univ., China Jin Wang, Nanjing Univ. of Posts and Tel., China Qijie Wang, Nanyang Technological Univ., Singapore Kevin Williams, Eindhoven Univ. of Tech., Netherland Yang Xu, Zhejiang Univ., China Lin Yang, Inst. of Semiconductor, CAS, China Xin Yin, Ghent Univ., Belgium Yu Yu, Huazhong Univ. of Sci. and Tech., China Zhiping Zhou, Peking Univ., China

Track 5: Optical signal processing & microwave photonics Hongwei Chen, Tsinghua Univ., China, Chair Jianji Dong, Huazhong Univ. of Sci. and Tech., China, Chair Xiaoke Yi, Univ. of Sydney, Australia, Chair Shilong Pan, Nanjing Univ. of Aero. and Astro., China, Chair Amol Choudhary, Univ. of Sydney, Australia Peucheret Christophe, Univ. of Rennes, France Xinhuan Feng, Jinan Univ., China Shiming Gao, Zhejiang Univ., China Zhanghua Han (Shandong Normal Univ., China Shuling Hu, Beihang Univ., China Chaoran Huang, Princeton Univ., USA Ming Li, Inst. of Semiconductors, CAS., China Xuejin Li, Shenzhen Univ., China Christina Lim, Univ. of Melbourne, Australia Zhixin Liu, Univ. College London, UK Arnan Mitchell, RMIT Univ., Australia Tigang Ning, Beijing Jiaotong Univ., China Chester Shu, The Chinese Univ. of Hong Kong, HK SAR Dawn Tan, Singapore Univ. of Design Tech., Singapore Chao Wang, Univ. of Kent, England Wenting Wang, Xiong'an Inst. of Innovation, China Lianshan Yan, Southwest Jiaotong Univ., China Lin Yang, Chinese Academy of Sci., China

Xiaoke Yi, Univ. of Sydney, Australia Xiaoping Zheng, Tsinghua Univ., China Qunbi Zhuge, Shanghai Jiao Tong Univ., China Weiwen Zou, Shanghai Jiao Tong Univ., China

Track 6: Optical measurements and imaging

Jun Qian, Zhejiang Univ., China, Chair Junle Qu, Shenzhen Univ., China, Chair Kebin Shi, Beijing Univ., China, Chair Xuping Zhang, Nanjing Univ., China, Chair Haiwen Cai, Shanghai Inst. of Optics and Fine Mechanics, CAS, China Hao He, Shanghai Jiao Tong Univ., China Wing-Cheung Law, Hong Kong Polytechnic Univ., HK Heeyoung Lee, Tokyo Inst. of Tech., Japan Peng Li, Zhejiang Univ., China Bin Liu, National Univ. of Singapore, Singapore Linbo Liu, NTU Singapore, Singapore Liwei Liu, Shenzhen Univ., China Tongyu Liu, Laser Inst. of Shandong Academy of Sci., China Fake Lu, State Univ. of New York, USA Yiging Lu, Macguarie Univ., Australia Huilian Ma, Zhejiang Univ., China Keiichi Nakagawa, Univ. of Tokyo, Japan Tymish Y. Ohulchanskyy, Shenzhen Univ., China Mateusz Smietana, Warsaw Univ. of Tech., Poland Anna Wang, Zhejiang Univ., China Dongning Wang, Shenzhen Tech. Univ., China Zhuyuan Wang, Southeast Univ., China Lei Wei, Nanyang Technical Univ., Singapore Peng Xi, Peking Univ., China Xiaobo Xing, South China Normal Univ., China Qing Yang, Zhejiang Univ., China Yuanhong Yang, Beihang Univ., China Baoli Yao, Xi'an Inst. of Optics and Precision Mechanics, CAS, China Zhen Yuan, Univ. of Macau, China

Wenjun Zhou, Univ. of California Davis, USA

Track 7: Ultrafast photonics and nonlinear optics

Minglie Hu, Tianjin Univ., China, Chair Jianfeng Li, Univ. of Electronic Sci. and Tech. of China, China, Chair Xueming Liu, Zhejiang Univ., China, Chair Jianrong Qiu, Zhejiang Univ., China, Chair Shengping Chen, National Univ. of Defense Tech., China Xianfeng Chen, Shanghai Jiao Tong Univ., China Anderson S.L. Gomes, UFPE, Brazil Jae-Hoon Han, Korea Inst.of Sci. and Tech., Korea Wei Ji, National Univ. of Singapore, Singapore Alexandra Kalashnikova, loffe Inst., Russia Qian Li, Peking Univ. Shenzhen Graduate School, China Weiwei Liu, Nankai Univ., China Xiaofeng Liu, Zhejiang Univ., China Zhichao Luo, South China Normal Univ., China Zhongqi Pan, Univ. of Louisiana Lafayette, USA Mark Pelusi, Univ. of Sydney, Australia Guanshi Qin, Jilin Univ., China Sze Y. Set, Univ. of Tokyo, Japan Zhi Wang, Nankai Univ., China Fenggiu Wang, Nanjing Univ., China Jun Wang, Chinese Academy of Sci., China Xiaoyong Wang, Nanjing Univ., China Kan Wu, Shanghai Jiao Tong Univ., China Min Xiao, Nanjing Univ., China Yun-Feng Xiao, Peking Univ., China Peiguang Yan, Shenzhen Univ., China Zhijun Yan, Huazhong Univ. of Sci. and Tech., China Zuxing Zhang, Nanjing Univ. of Posts and Tel., China Luming Zhao, Jiangsu Normal Univ., China Quanzhong Zhao, Shanghai Inst. of Optics and Fine Mechanics, CAS, China Haiming Zhu, Zhejiang Univ., China

Track 8: Space communications, navigation & tracking

Nan Chi, Fudan Univ., China, Chair Jing Xu, Zhejiang Univ., China, Chair Tianshu Wang, Changchun Univ. Sci. Tech., China, Chair Guijun Hu, Jilin Univ., China, Chair Kenji Araki, Toyota Tech. Inst., Japan Minghua Cao, Lanzhou Univ. of Tech., China Bo Cong, China Satellite Maritime Tracking and Control Dept., China Ming Chen, Beijing Research Inst. of Telemetry, China Guangxi E, Southwest China Inst. of Electronic Tech., China Xianging Jin, Univ. of Sci. and Tech. of China Diging Li, China Academy of Space Tech., China Jing Li, Commercial Aircraft Corporation of China, China Jianfei Liu, Hebei Univ, of Tech., China Lilin Liu, Sun Yat-Sen Univ., China Vuong Mai, Univ. of Bradfor, UK Chao Wang, China Academy of Space Tech., China Yan Xia, Hunan Univ., China Yifei Yang, Jiangsu Univ. of Sci. and Tech., China Baokang Zhao, National Univ. of Defense Tech., China Jie Zhong, Zhejiang Univ., China Weigang Zhu, Equipment Academy, China

Track 9: Quantum photonics and applications

Xiaolong Su, Shanxi Univ., China, **Chair** Feihu Xu, Univ. of Sci. and Tech. of China, China, **Chair** Wei Zhang, Tsinghua Univ., China, **Chair** Shengwang Du, Hong Kong Univ. of Sci. and Tech., HK SAR Guoping Guo, Univ. of Sci. and Tech. of China, China Xianmin Jin, Shanghai Jiao Tong Univ., China Myungshik Kim, Imperial College London, UK W. Steve Kolthammer, Imperial College London, UK Jiaming Li, Shanghai Jiao Tong Univ., China Tiefu Li, Tsinghua Univ., China Yanqing Lu, Nanjing Univ., China Zhongxiao Man, Qufu Normal Univ., China Feng Mei, Shanxi Univ., China Xifeng Ren, Univ. of Sci. and Tech. of China, China Lin Tian, Univ. of California Merced, USA Guoyong Xiang, Univeristy of Sci. and Tech. of China, China Man-Hong Yung, Southern Univ. of Sci. and Tech., China Lijian Zhang, Najing Univ., China Qiang Zhang, Univeristy of Sci. and Tech. of China, China

Special session 1: Optoelectronics based on organic and nanostructured materials

Wei Huang, Northwestern Polytechnical Univ., China, Chair Zugang Liu, China Jiliang Univ., China, Chair Michele Muccini, National Research Council, Italy, Chair Chihaya Adachi, Kyushu Univ., Japan Pavel Brunkov, loffe Inst., Russia Andrew Monkman Durham Univ., UK Jungiao Ding, Yunnan Univ., China Shaocong Hou, Wuhan Univ., China Wenping Hu, Tianjing Univ., China Yizheng Jin, Zhenjiang Univ., China Wengyong Lai, Nanjing Univ. of Posts and Tel., China Yongyin Kang, Fudan Univ., China Hoi Sing Kwok, Hongkong Univ. of Sci. and Tech., China Fushan Li, Fuzhou Univ., China Zhen Li, Wuhan Univ./Tianjin Univ., China Zeke Liu, Soochow Univ., China Rabchinskii Maxim, Ioffe Inst., Russia Hong Meng, Peking Univ., China Junyou Pan, Zhejiang Brilliant-Optoelectronics Tech. Co., Ltd., China

Nigel Pickett, Nanoco Technologies, UK Shiyang Shao, Hainan Univ., China Caterina Soldano, Aalto Univ., Finland Xiaowei Sun, Southern Univ. of Sci. and Tech., China Stefano Toffanin, CNR-ISMN, Italy Lei Wang, Huazhong Univ. of Sci. and Tech., China Sixin Wu, Henan Univ., China Guohua Xie, Xiamen Univ., China Rongjun Xie, Xiamen Univ., China Hao Xin, Nanjing Univ. of Posts & Tel., China Hui Xu, Heilongjiang Univ., China Baomin Xu, Southern Univ. of Sci. and Tech., China Xuyong Yang, Shanghai Univ., China Jingbi You, Inst. of Semiconductors, CAS, China Haibo Zeng, Nanjing Univ. of Sci. and Tech., China

Special session 2: Machine learning for photonics and communications

Qunbi Zhuge, Shanghai Jiao Tong Univ., China, **Chair** Yongli Zhao, Beijing Univ. of Posts and Tel., China, **Chair** Yanni Ou, Nokia Bell Labs, Germany, **Chair** Shuangyi Yan, Univ. of Bristol, UK Zilong Ye, California State Univ., Los Angeles, USA Sabidur Rahman, UC Davis, USA Yu Wu, Google, USA Jianqiang Li, Alibaba Group, USA Nan Hua, Tsinghua Univ., China Xiaosong Yu, Beijing Univ. of Posts and Tel., China Xiaoning Zhang, Univ. of Electronic Sci. and Tech. of China Danish Rafique, ADVA, Germany

Special session 3: 2D-materials based photonics Weida Hu, Shanghai Inst. Tech. Physics, CAS, China, **Chair** Kaihui Liu, Peking Univ., China, **Chair**

Hongtao Lin, Zhejiang Univ., China, **Chair** Hua Zhang, City Univ. of Hong Kong, China Juejun Hu, Massachusetts Inst. of Tech., USA Anlian Pan, Hunan Univ., China Han Zhang, Shenzhen Univ., China Deep Jariwala, Univ. of Pennsylvania, USA Xiaomu Wang, Nanjing Univ., China Fang Wang, Shanghai Inst. of Technical Physics, CAS, China Zhipei Sun, Aalto Univ., Finland Baicheng Yao, Univ. of Electronic Sci. and Tech. of China Yaqing Bie, Sun Yat-Sen Univ., China Zhengqian Luo, Xiamen Univ., China Qiaoliang Bao, Monash Univ., Australia Jianbin Xu, Chinese Univ. of Hong Kong, HK SAR Xuming Zou, Hunan Univ., China

Special session 4: Electronic technologies and communications

Bai-Ou Guan, Jinan Univ., China, **Chair** Francesco Chiavaioli, CNR-IFAC, Italy, **Chair** Yang Ran, Jinan Univ., China, **Chair** Anna Grazia Mignani, CNR-IFAC, Italy Long Jin, South China Normal Univ., China Chao Tian, Univ. of Sci. and Tech. of China, China Jingjing Guo, Beihang Univ., China Li Ma, Jinan Univ., China Jun Ma, Jinan Univ., China Zewei Luo, Sichuan Univ. Xuegang Li, Northeast Univ., China Jingyi Zhu, City Univ. of Hong Kong, HK

General Information

Conference Venue: Sunshine Hotel Zhangjiajie 会议地点:张家界阳光酒店

Address: No.2 Yongding Avenue East, Zhangjiajie City, Hunan Province, China 地址:湖南省张家界市永定大道东 2 号



Accessbility

Zhangjiajie Sunshine Hotel is a luxury five-star hotel in the heart of Zhangjiajie - a UNESCO World Natural Heritage site, nestled between Tianmen Mountain to the south and Lishui River to the north. The 85,000 sqm property combines modern design with Miao and Tujia ethnic elements, offering premium conference and leisure facilities. Its prime location provides easy access via Yongding Avenue and Changzhang Expressway, just 10 minutes from the airport/railway station and 30 minutes from major attractions.

Registration

Location: Lobby of Sunshine Hotel, Zhangjiajie

Hours:

14: 00-20: 00	Monday, 28 July
08: 00-18: 00	Tuesday, 29 July
08: 00-18: 00	Wednesday, 30 July
08: 00-16: 00	Thursday, 31 July

Speaker Preparation

All oral presenters should check in at the corresponding session room at least ten minutes prior to their scheduled talk to upload and check their presentation. No shows of the oral presentation will be reported to Conference management and these papers will not be published.

Poster Preparation

Authors should prepare their poster before the poster session starts. The poster must not exceed the boundaries of the poster board and A0 (0.9m Width * 1.2m Height) size is recommended. Authors are required to be standing by their poster for the duration of their allocated session to answer questions and further discuss their work with attendees. No shows will be reports to Conference management and these papers will not be published.

Poster Board Size – 1m (Width) * 2m (Height) Location: 2F, Sunshine Hotel, Zhangjiajie

Poster Session 1	15:30-16:00, 29 July
Poster Session 2	10:00-10:30, 30 July
Poster Session 3	15:30-16:00, 30 July
Poster Session 4	10:00-10:30, 31 July

Exhibition

The ICOCN2025 Exhibition is open to all attendees. Location: Public area, Sunshine Hotel, Zhangjiajie

Hours:

09: 00-18: 00	Monday, 29 July
09: 00-18: 00	Tuesday, 30 July
09: 00-16: 00	Wednesday, 31 July

Conference Materials

ICOCN2025 Technical Digest will be provided in a USB drive and not available in print form. The ICOCN2025 Technical Digest material is composed of the 3-page summaries of invited and accepted contributed papers. The Technical Digest material is included with a technical conference registration and can be found in your registration bag. The Digest will be available on IEEE Xplore Digital Library (http://www.ieee.org/web/publications/xplore/) after the conference. IEEE Xplore Digital Library is archived and indexed by INSPECR and EI Compendex, where it will be available to the international technical community.

Lunches & Dinners

Five buffet lunches and dinners (July. 28-31) in Sunshine Hotel are included in the registration fee for all registered delegates. And lunch & dinner tickets are provided within the badge.

Location: Courtyard Western Restaurant (1F), Sunshine Hotel

18:00-20:30	Monday, 28 July
12:00-13:30	Tuesday, 29 July
18:30-20:30	Tuesday, 29 July
12:00-13:30	Wednesday, 30 July
12:00-13:30	Thursday, 31 July

Tea & Coffee Breaks

15:30-16:00	Tuesday, 29 July
10:00-10:30	Wednesday, 30 July
15:30-16:00	Wednesday, 30 July
10:00-10:30	Thursday, 31 July

Social Events

Welcome reception

All participants are cordially invited to the Welcome Reception. It will be a great opportunity to develop a broad, deep and diverse network of personal connections with participants from all over the world. Complimentary food and beverages will be offered by Organizing Committee of ICOCN2025. It is free to all the registered participants.

Location: Courtyard Western Restaurant, Sunshine Hotel

Time: 18:00-20:30, Monday, 28 July

Conference Banquet and Awards Ceremony

All participants are cordially invited to the banquet. We will announce the winners of Young Scientist Awards, Best Student Paper Award and Best Poster Award. The winners will receive their certificates and awards at the ceremony. Participate in our Lucky Draw during the banquet, you may be one of the lucky winners! At the same time, you will enjoy delicacies foods. It will be an unforgettable Banquet that you will always remember with a smile.

The Banquet is included in the registration fee for all register delegates. The ticket is provided within the badge.

Location: Sunshine Hall (2F), Sunshine Hotel Time: 18:30-21:00, Wednesday, 30 July

Conference Highlights

Plenary Presentations

Time: 09:00-12:00, Tuesday, 29 July Venue: Sunshine Hall (2F), Sunshine Hotel



Novel Understanding of Micro-Particles:The Rest-Energy-Excluded Frequency-Determination Energy and the Potential-Energy-Affected Wavelength

09:00-09:45, Tuesday, 29 July

Prof. Xiaomin Ren Beijing Univ. of Posts & Tel., China

Biography: Xiaomin Ren, IET Fellow, COS Fellow, CIE Fellow, Professor of Beijing University of Posts and Telecommunications (BUPT), Chief Scientist of the State Key Laboratory of Information Photonics and Optical Communications of China (SKL-IPOC), Vice President of Chinese Optical Society (COS). He had also been a Vice President of BUPT (1996-2017), the Director of SKL-IPOC (2003-2023) and the Chairman of ACP Conference Steering Committee (2015-2023). He worked as a Senior Visiting Scholar in Centro Studi E Laboratori Telecomunicazioni, Turin, Italy, and then as a Visiting Senior Research Fellow in the Microelectronics Research Center, University of Texas at Austin, USA, during 1994 to 1996. He had been awarded with the title of Outstanding Young Scientist of China by NNSFC (1996). He had been a Vice Head of the Optoelectro-

nic Expert Group under the National 863 Program for many early years and the Chief Scientist of the relevant research projects of the National 973 Program twice from 2003 to 2014. He has worked on information optoelectronic technologies and nanoheterostructure physics, mainly including semiconductor lasers, photodetectors, silicon-based III-V optoelectronic integration, novel lowdimensional heterostrucutures and devices. photonic crystal fibers, etc. He has also worked on fundamental physics since 2012 and proposed the concept of energy-level divergence, the theory of fractional (or continuous real-number) dimensionality electron-states architecture in semiconductors, the Bivergentum Theory going to unify the classical and quantum mechanics together and extend the Einstein's high speed special theory of relativity to a quite new one, i.e. the full-velocityscope special theory of relativity. He advocates that quantum mechanics must go back to Logicism (in contrast with Instrumentalism) and believes that there does exist an amazing super-low speed 'world'.



Remarks on In-fiber Integrated Optic Devices and Components

09:45-10:30, Tuesday, 29 July

Prof. Libo Yuan Guilin University of Electronic Science and Technology, China.

Biography: Prof. Libo Yuan is with the School of Optoelectronic Engineering, Guilin University of Electronics and Technology, as a professor and direc-

tor of Photonics Research Center. He has received his Ph.D. (Photonics, 2003), M. Eng. (Communication & Electronic Systems, 1990) and B.S. (Physics, 1984), from The Hong Kong Polytechnic University, Harbin Shipbuilding Engineering Institute and Heilongjiang University, respectively. His general area of research is in-fiber integrated optics, fiber optical tweezers and fiber-optic sensors. He has authored and coauthored over 400 referred international journal papers. He holds over 150 patents related with fiber optic technology and published 4 books and 3 book chapters.



Optical Interconnects for AI Datacenters

10:30-11:15, Tuesday, 29 July

Chongjin Xie PhotonicX Al Pte. Ltd., Singapore

Biography: Chongjin Xie received his M.Sc. and Ph.D. degrees from Beijing University of Posts &Telecommunications, in 1996 and 1999, respectively, in electrical and communication engineering. He did his postdoctoral research at Chalmers University of Technology in Sweden from 1999 to 2001, working on polarization-modedispersion effects on high-speed optical transmission systems. He joined Bell Labs, Lucent Technologies in New Jersey, USA in 2001, doing research on optical communication systems and networks. He worked at Alibaba Infrastructure Service from 2014 to 2024 as a senior director and chief communication scientist, leading an optical net-working research, planning, design and testing team to develop and implement datacenter optical interconnects and networking technologies and products in support of Alibaba online platform and cloud services. He founded PhotonicX AI in 2024, a startup focusing on AI optical interconnects, and served as CEO of the company. Dr. Xie has published one book, 5 book chapters and over 250 journal and conference papers, and served as an associate editor of Journal of Lightwave Technologies from 2013 to 2019, OFC program chair and general chair in 2019 and 2021, respectively. He is a Fellow of IEEE and a Fellow of Optica.



Photoacoustic imaging empowered by fiber-optic ultrasonic sensors

11:15-12:00, Tuesday, 29 July

Bai-Ou Guan Jinan University, China

Biography: Bai-Ou Guan received his bachelor's degree in applied physics from Sichuan University in 1994, and his M. Sc and Ph.D. degrees in optics from Nankai University, in 1997 and 2000, respectively. From 2000 to 2005, he was with the Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, first as a Research Associate, and then as a Postdoctoral Research Fellow. From 2005 to 2009, he was with School of Physics and Optoelectronic Engineering, Dalian University of Technology, as a Full Professor. In 2009, he joined Jinan University, Guangzhou, where he founded the Institute of Photonics Technology. Now he serves as the dean of College of Physics & Optoelectronic

Engineering at Jinan University. His research interests include fiber optic sensors, photoacoustic imaging, and fiber optic theranostics. He has authored and coauthored more than 390 papers in the peer-reviewed international journals such as Nature Photonics, and Nature Communications etc. He is a fellow of Optica.

Young Scientist Awards

2 recipients, certificate & HUAWEI ultrabook for each

To be eligible for the award, the researchers must be born after Aug.14, 1982 and the first author of the paper and register to give the oral presentation at the conference by himself or herself. The selection will be made by the TPC during the conference. Certificates and prizes will be presented to the winners in the award ceremony during the conference banquet.

Best Student Paper Awards

10 recipients, certificate & HUAWEI Pad for each

Any full-time research student, who is the first and presenting author of a full paper submitted with choosing presentation type of "Oral for Best Student Paper Award" will be eligible for this award competition. Ten winners will be selected by the ICOCN'2025 Technical Program Committee and invited to attend the conference banquet and award ceremony. Certificates and prizes will be presented to the winners in the award ceremony during the conference banquet.

Best Poster Paper Awards

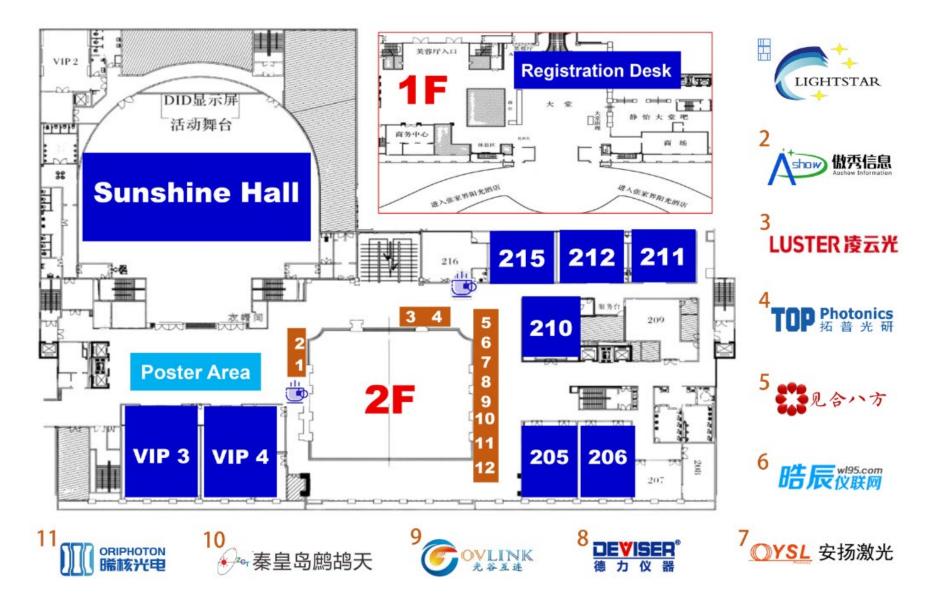
10 recipients, certificate & HUAWEI cellphone for each

To be eligible for the award, the paper must be submitted with choosing presentation type of "Best Poster Paper Award competition". Preconference shortlist will be carried out based on the peer-review results by TPC/invited reviewers. The shortlisted posters will be presented during the assigned time slot and those who win the first fifteen largest number of "Best Poster Paper Award" vote tickets will be given the Best Poster Award. Certificates and prizes will be presented to the winners in the award ceremony during the conference banquet.

Banquet Lucky-draw

Every registered non-student participant will be given a Best Poster Award Voting Ticket at the registration desk when they collect the conference materials. Those who help us select the awardee candidates by writing down the poster numbers on the voting ticket and put it into the ticket collecting box during the first poster session time will get the chance to be lucky guy. Do help us by submitting your choice for the Best Poster.

Conference & Exhibition Map



Conference Schedule

	Monday July 28	Tuesday July 29	Wednesday July 30	Thursday July 31	Venue
Registration	14:00-20:00	08:00-18:00	08:00-18:00	08:00-16:00	Lobby, 1F
Opening Ceremony		08:30-09:00			Sunshine Hall, 2F
Plenary Session		09:00-12:00			Sunshine Hall, 2F
Technical Sessions		13:30-18:00	08:00-18:00	08:00-16:00	Meeting Rooms, 2F
Exhibition		09:00-18:00	09:00-18:00	09:00-16:00	Public Area, 2F
Welcome Reception	18:00-20:30				Courtyard Western Restaurant, 1F
Poster Sessions		15:30-16:00	10:00-10:30 15:30-16:00	10:00-10:30	Public Area, 2F
Young Scientist Award Sessions		16:00-18:00			Room 206
Best Student Paper Award Sessions		16:00-18:00	08:00-10:00 10:30-12:00		Meeting Rooms, 2F
Post-Deadline Session				10:30-12:00 13:30-16:00	Room 206
Banquet & Awards Ceremony			18:30-21:00		Sunshine Hall, 2F

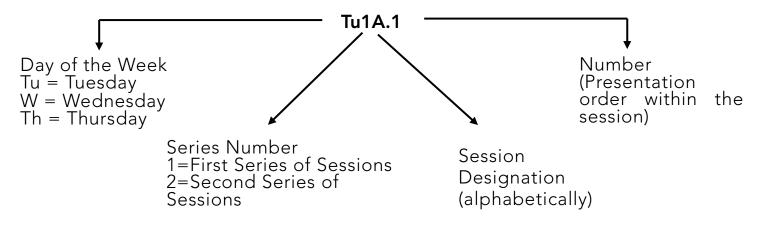
Mon.	14:0020:00		Registration (Sunshine Hotel)						
Jul. 28	18:00-20:30	Reception (Courtyard Western Restaurant, 1 st floor, Sunshine Hotel)							
	8:3012:00	Opening Ceremony & Plenary Talks (Sunshine Hall, 2 nd floor, Sunshine Hotel)							
	12:0013:30	Lunch Break							
		VIP Room 3							
Tues.	13:3015:30	Novel fibers & devices I	Measurement & imaging I	Optoelectronic integration I	Quantum Photonics I	Organic/nano optoelectronics I	Ultrafast & nonlinear I	Optical Networks I	Optical transmission I
Jul. 29	15:3016:00				Tea Break & F	Poster Session I			
	16:0018:00	Novel fibers & devices II	Measurement & imaging II	Optoelectronic integration II	Young Scientist Award	Organic/nano optoelectronics II	Ultrafast & nonlinear II	Optical networks II	Optical transmission II
	18:30-20:30				Conferer	nce Dinner			
	8:0010:00	Novel fibers & devices III	Measurement & imaging III	Optoelectronic integration III	Quantum Photonics II	Organic/nano optoelectronics III	Optical signal Processing I	Optical networks III	Optical transmission III
	10:0010:30	Tea Break & Poster Session II							
	10:3012:00	Novel fibers & devices IV	Measurement & imaging IV	Optoelectronic integration IV	Quantum Photonics III	Organic/nano optoelectronics IV	Optical signal Processing II	Optical networks IV	Optical transmission IV
Wed. Jul. 30	12:0013:30	Lunch Break							
5011 50	13:3015:30	Novel fibers & devices V	Measurement & imaging V	Optoelectronic integration V	2D-materials Photonics I	Organic/nano optoelectronics V	Ultrafast & nonlinear III	Machine Learning I	Wireless communication I
	15:3016:00	Tea Break & Poster Session III							
	16:0018:00	Novel fibers & devices VI	Measurement & imaging VI	Optoelectronic integration VI	2D-materials Photonics II	Organic/nano optoelectronics VI	Ultrafast & nonlinear IV	Machine Learning II	Optical transmission V
	18:30-21:00	Conference Banquet & Awards Ceremony							
	8:0010:00	Novel fibers & devices VII	Measurement & imaging VII	Optoelectronic integration VII	2D-materials Photonics III	Organic/nano optoelectronics VII	Optical signal Processing III	Optical Biosensors I	Optical transmission VI
Thur. Jul. 31	10:0010:30	Tea Break & Poster Session IV							
	10:3012:00	Novel fibers & devices VIII	Measurement & imaging VIII	Organic/nano Optoelectron. X	Post-Deadline Papers I	Organic/nano optoelectronics VIII	Optical signal Processing IV	Optical Biosensors II	Optical transmission VII
	12:0013:30				Lunch	n Break		· · · · · · · · · · · · · · · · · · ·	
	13:3016:00	Novel fibers & devices IX	Measurement & imaging IX	Optoelectronic integration VIII	Post-Deadline Papers II	Organic/nano optoelectronics IX	Ultrafast & nonlinear V	Optical Biosensors III	Wireless communication II

ICOCN 2025—Agenda of Sessions

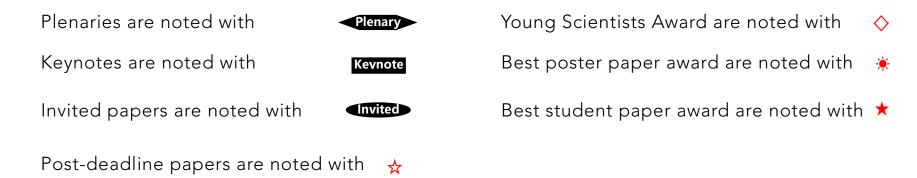
(Plenary talk: 45 mins; Keynote 30 mins; Invited talk: 20 mins; Others: 15 mins)

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Explanation of Session Codes



The first letter of the code designates the day of the week (Tu = Tuesday, W = Wednesday, Th = Thursday). The second element indicates the session series in that day (for instance, 1would denote the first parallel session in that day). The third element continues alphabetically through a series of parallel sessions. The lettering then restarts with each new series. The number on the end of the code (separated from the session code with a period) signals the position of the talk within the session (first, second, third, etc.). For example, a presentation coded Tu1A.1 indicates that this paper is being presented on Tuesday (Tu) in the first series of sessions (1), and is the first parallel session (A) in that series and the first paper (1) presented in that session.



ICOCN 2025—Agenda of Sessions	ICOCN	OOOF			6 6	
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		2023	AUG	nua i		

NOTES

08:00-18:00 Registration, Lobby

08:30-09:00 Opening Ceremony, Sunshine Hall 2F

09:00-12:00, Plenary Session, Sunshine Hall 2F

Presider: Perry Ping Shum, Southern University of Science and Technology, China

Tu1A.1 • 09:00 Plenary



Novel Understanding of Micro-Particles: The Rest-Energy-Excluded Frequency-Determination Energy and the Potential-Energy-Affected Wavelength, Xiaomin Ren; *Beijing University of Posts and Telecommunications, China.* Both electronics and optoelectronics are essentially based on de Broglie wave-particle duality which has played its role as the micro-particle fundamentals including the relation between particle energy and wave frequency and that between particle momentum and wavelength. However, the frequency-determination energy in the first relation has usually been misunderstood as the rest-energy included total particle energy and the wavelength in the second relation has been mistaken as a quantity only related to the

momentum. Here presented are the modified ones featuring the rest-energy excluded frequency-determination energy and the potentialenergy-affected wavelength (an effective momentum $p_{eff}=(1+Q_uU/E_k)p$ in the first order approximation of weak potential-energy is introduced) as well as the consequentially re-established Schrödinger equation and Dirac equation written respectively as follows:

$$i\hbar \frac{\partial \Psi}{\partial t} = -\frac{\hbar^2}{2\mu} \nabla^2 \Psi + (3 - 2Q_u)U\Psi$$
$$i\hbar \frac{\partial \Psi}{\partial t} - \frac{\hbar^2}{2\mu c^2} \frac{\partial^2 \Psi}{\partial t^2} = -\frac{\hbar^2}{2\mu} \nabla^2 \Psi + (3 - 2Q_u)U\Psi$$

For the former one, it can be found that when $Q_u = 1$ and thus $3 - 2Q_u = 1$, it is just the Schrödinger equation that we are familiar with. It means that, actually, Schrödinger equation can be considered as a valid one only under the above-mentioned first-order approximation and the assumption of $Q_u = 1$.

For the latter one, it can be found that in the case of free space with U = 0, the re-established Dirac equation becomes

$$i\hbar\frac{\partial\Psi}{\partial t} - \frac{\hbar^2}{2\mu c^2}\frac{\partial^2\Psi}{\partial t^2} = -\frac{\hbar^2}{2\mu}\nabla^2\Psi$$

which is much simpler and even more elegant than the corresponding currently-recognized Dirac equation. Furthermore, it can be proved that the re-established Dirac equation can degenerate into the re-established or even the original Schrödinger ones when the particle velocity comes into the non-relativistic regime.

These modifications and re-establishments might lead to fascinate stories of the quantum-mechanics theory and various relevant technologies, especially in the area of electronics and optoelectronics.

Tu1A.2 • 09:45 Plenary



Remarks on In-fiber Integrated Optic Devices and Components, Libo Yuan; *Guilin University of Electronic Science and Technology, China.* This report focuses on the integration of devices or components using quartz fiber as the substrate material, and discusses how to miniaturize and integrate various optical device or elements into a single fiber. The construction of functional optical devices, or the realization of optical component integration on the fiber through the combination of several single-function optical devices are systematically explored. The primary concepts and key technologies for the integration of optical devices and components in optical fibers are systematically summarized. The main functionalities and applications of such integrated devices and components

in optical fiber communication and sensing are comprehensively reviewed. Finally, the potential application prospects of this technique in the field of minimally invasive interventional medicine in the future are elaborated.

Tu1A.3 • 10:30 Plenary



Optical Interconnects for AI Datacenters, Chongjin Xie; *PhotonicX AI Pte. Ltd., Singapore.* Since the advent of ChatGPT, generative AI has attracted lots of attention, not only from academia and industries, but from general public as well. AI computing has become the new growth engine for the IT industry and is changing the landscape of computing. Datacenters are shifting their focus from general computing to AI computing. With massive data and various parallelisms used in AI computing, huge amount of interconnects at various levels are required for AI computing clusters. This talk focuses on optical interconnects for AI computing clusters in cloud datacenters, their requirements, current status and future challenges. Various technologies are discussed.

Tu1A.4 • 11:15 Plenary



Photoacoustic imaging empowered by fiber-optic ultrasonic sensors, Bai-ou Guan; *Jinan University, China.* Photoacoustic imaging as a hybrid imaging technology that integrates optical excitation and acoustic detection can not only provide anatomical information of biological tissues, but also reflect functional information such as oxygen saturation and metabolism rate. Conventional piezoelectric sensors for the detection of photoacoustic signals confront tradeoff between the sensitivity and footprint size, limiting the capability and flexibility for high-performance system design. In contrast, fiber-optic ultrasonic sensors feature size-independent sensitivity, small size, high sensitivity, and large working bandwidth, and therefore open up new path for developing miniaturized and wearable

photoacoustic imaging systems. This talk will introduce our recent progress in photoacoustic imaging technology based on fiber-optic ultrasonic sensors. The fiber laser ultrasonic sensor technology with high sensitivity and strong anti-interference capability is introduced at first, which is followed by photoacoustic endoscopy, small-animal head-mounted photoacoustic microscopy, and the deep-penetration photoacoustic computed tomography.

12:00-13:30 Lunch Break

13:30-15:30

University, China

VIP Room 3, Track 1

13:30-15:30 Tu2A. Novel fibers & Devices I Presider: Changyuan Yu, The HK Polytechnic University, HK

Tu2A.1 • 13:30 Invited





Research on Key Technologies of Information Sensing and Processing, Li Pei; Beijing Jiaotong Univ., China. Our research group focuses on

channel equalization in high-capacity optical communication systems and key technologies for new band optical amplifiers.

Tu2A.2 • 13:50 Invited



Fiber-Optic Monitoring of Battery Thermal Behavior, Xingwei Wang; Univ. of Massachusetts Lowell, USA. This study employs OFDR-

based distributed fiber sensors to monitor surface temperature variations in batteries during charge-discharge cycles.

Tu2A.3 • 14:10 Invited



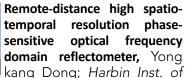
Seeing through a single multimode fiber. Lei Su: Queen Mary Univ., of London, UK.

VIP Room 4, Track 6

13:30-15:30

Tu2B. Measurement & Imaging I Presider: Jianzhong Zhang, Harbin Engineering University, China

Tu2B.1 • 13:30 Invited



Tech, China. We propose a remote ϕ -OFDR achieving 75km sensing with 2cm spatial resolution and 4kHz sampling.

Tu2B.2 • 13:50 Invited

Tu2B.3 • 14:10

Univ., China.

High Spatial Resolution Optical Frequency Domain Reflectometry, Guolu Yin; Chongaina Univ., China.

Tu2C.2 • 13:50 Invited

integration.

Silicon hybrid integrated lasers for FMCW ranging, Linjie Zhou; Shanghai Jiao Tong Univ., China

Room 205, Track 4

free silicon photonic switches with nearzero phase errors, enalbing large-scale

Tu2C. Optoelectronic Integration I

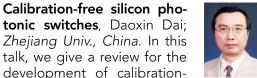
Presider: Daoxin Dai, Zhejiang

Tu2C.1 • 13:30 Invited

Room 206, Track 9

13:30-15:30 Tu2D. Quantum Photonics I Presider: Xifeng Ren, Univ. of Science and Technology of China, China

Tu2D.1 • 13:30 Invited



Complex-Form Wave Equations: from Micro-Particle Physics to Photonics, Xiaomin Ren; Beijing Univ. of Posts and Tel., China.

Tu2D.2 • 13:50 Invited



Continuous-variable entaglement assisted quantum communication through fiber channels, Xiaolong Su; Shanxi Univ.; China.

Tu2C.3 • 14:10 Invited



SOI and TFLN photonic devices, Tao Chu; Zhejiang Univ., China. Some novel photonic devices based on SOI or TFLN platforms will be including poarization & DeMUX, switches & high-efficiency modulators, and high-speed tunable lasers.

Tu2D.3 • 14:10



Multi-parameter quantumenhance metrology, Lijian Zhang; Nanjing Univ., China



Room 210, Special 1

13:30-15:30 Tu2E. Organic Optoelectronics I Presider: Zugang Liu & Hui Xu

Tu2E.1 • 13:30 Kevnote



Fast liquid crystals and their applications, Hoi Sing Kwok; Hong Kong Univ. of Sci. and Tech., HK.

Tu2E.2 • 14:00 Invited



Cluster Light-Emitting Materials and **Devices**, Hui Xu; *Heilongjiang Univ., China.* We developded ligand and host engineering strategies

to externally optimize exciton ratios and allocation to radiative excited states of the clusters.

Tu2E.3 • 14:20 Invited



Development and Applications of PIEgens, Guanjun Xiao; Jilin Univ., China. The concept of pressure-induced emission (PIE) was proposed and

successively dis-covered in zerodimensional Cs4PbBr6, onedimensional C4N2H14SnBr4 and twodimensional (C4H12N)4AgBiBr8 halide Perovskites.

Room 211, Track 7

13:30-15:30 Tu2F. Ultrafast & Nonlinear I Presider: Meng Pang, Shanghai Inst. of Optics and Fine Mechanic, China

Tu2F.1 • 13:30 Invited

Excitonic Nonlinearities in Two-Dimensional Materials, Wei Ji; National Univ. of Singapore, Singapore. In this talk, we will present a sysmatical quantum

theory to predict giant excitonic optical nonlinearities in two-diemsnional materials.

Tu2F.2 • 13:50 Invited

Phase modulation and demodulation for high power single frequency lasers, Yan Feng; Hangzhou Inst. for Advanced Study, UCAS, China. Phase modulation and demodulation approach is explored for the generation of high-power single frequency lasers at visible or ultraviolet regime.

Tu2F.3 • 14:10 Invited

Nonlinear dynamics of nanosecond pulses in fiber lasers, Luming Zhao; Huazhong Univ. of Sci. and Tech., China. Period doubling route to chaos and cascaded routes to chaos based on nanosecond pulses in fiber lasers are numerically presented.

Room 212, Track 3

13:30-15:30 Tu2G. Optical Networks I Presider: Zuqing Zhu, Univ. of Science and Technology of China, China

Tu2G.1 • 13:30 Invited



The New Role of Data in OpticalNetworks,Dan Kilper;TrinityCollegeDublin,Ireland.Progress on the collection andmanagement of data for use in

Al methods for optical network control and management will be described including the potential for integration of optical sensing and situational data.

Tu2G.2 • 13:50 Invited



DynamicOpticalSatelliteNetworks, Yongli Zhao;BeijingUniv. of Posts and Tel.;China.

Room 215, Track 2

13:30-15:30 Tu2H. Optical Transmission I *Presider: Jianping Li, Guangdong University of Technology, China*

Tu2 H.1 • 13:30 Invited



Advances in Multi-Dimensional Optical Communications in Diverse Scenarios, Jian Wang; Huazhong Univ. of Sci. and Tech., China. In this talk, we

Tuesday, 29 July

show advances in multi-dimensional optical communications in diverse scenarios.

Tu2H.2 • 13:50 Invited



Unified assessment metric for impact of all-order PMD on fiber communication systems, Xiaoguang Zhang; Beijing Univ. of Posts and Tel.; China.

Tu2G.3 • 14:10 Invited



IntrinsicallyPerceivedDataCenterOpticalNetwork,WeigangHou;ChongqingUniv. of Posts and Tel.;China.

Tu2H.3 • 14:10 Invited



Measurement of Modal Impairments in Few-Mode Fibers, Guijun Hu; Jilin Univ., China

photonics,

Beijing

China.

VIP Room 3, Track 1

Tu2A.4 • 14:30 Invited



Tuesday, 29 July

Femtosecond Laser Directly-Written Ultra-Short DBR Fiber Lasers for Hash Environmental Sensing, Jun He; Shenzhen Univ., China.

Tu2B.4 • 14:30 Invited High-performance quasi-distributed acoustic sensing based on microwave Muguang

VIP Room 4, Track 6

Room 205, Track 4

Tu2C.4 • 14:30 Invited



Photonic computing for aritifical intelligence, Jianji Dong; Huazhong Univ. of Sci.&Tech., China. In this talk, we will report on-chip neural network, emphasizing the "black-box" physical training model and its applications.

Room 206, Track 9

Tu2D.4 • 14:30 Invited



High-dimensional quantum networks, Bi-Heng Liu; Univ. of Sci. and Tech. of China., China.

Tu2A.5 • 14:50 Invited



Photoacoustic detection technology and its application, Ping Lu; Huazhong Univ. of Sci. and Tech., China.

Traffic Monitoring with DAS, Huijuan Wu; Univ. of Electronic Sci. and Tech. of China, China.

Wang;

Univ.,

Tu2C.5 • 14:50 Invited



Silicon Optical Phased Array for Beam Steering and Receiving in LiDAR and FSO, Lei Zhang; Beijing Univ. of Posts and Tel., China. We will present a novel silicon optical phased array calibration method for beam steering and a multi-mode design for FOV enhancement in receiving.

Tu2D.5 • 14:50 Invited



Large-scale integrated quantum photonics, Jianwei Wang; Peking Univ., China.

Tu2A.6 • 15:10 Invited



Dual microcomb based optical fiber sensing devices and systems, Baicheng Yao; Univ. of Electronic Sci. and Tech. of China, China.

Tu2B.6 • 15:10 Invited

Sensitivity Distributed Acoustic Sensing Technology, Huanhuan Liu; Shenzhen Inst. of Advanced Tech., CAS, China.

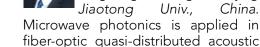
Specialty Fiber-based High



Tu2D.6 • 15:10 Invited

Quantum photonic sources based on 2D materials, Xifeng Ren; Univ. of Sci. and Tech. of China, China.

15:30-16:00 Poster Session 1 & Tea Break



sensing system.

Tu2B.5 • 14:50 Invited

Room 210, Special 1

Tu2E.4 • 14:40 Invited



Defects Engineering for Efficient Kesterite Solar Cells and Modules, Hao Xin; Nanjing Univ. of Posts and Tel., China. Our results push one step forward for this

low-cost and environmentally benign thin film solar cell to practical application.

Tu2E.5 • 15:00 Invited



Organic hole-transporting materials for perovskite solar cells, Yongzhen Wu; East China Univ. of Sci. and Tech., China

Room 211, Track 7

Tu2F.4 • 14:30 Invited Nonlinear optics in gas-filled hollow-core fiber: few-cycle pulse compression and tunable ultraviolet pulse generation, Meng Pang; Shanghai Inst. of

Optics and Fine Mechanics, CAS, China. In this talk, I will present some recent results of our lab in this field.

spatio-temporal mode-locked (STML)

multimode fiber lasers will be reviewed.

Tu2F.5 • 14:50 Invited

Tu2G.4 • 14:30 Invited

Room 212, Track 3



Dynamic Routing Protocol for Multilayer Satellite Networks, Baokang Zhao; National Univ. of Defense Tech., China. This talk will explore the design and optimization of novel flat routing protocols for mega constellation satellite networks.

Tu2G.5 • 14:50 Invited



on MZIs.

Design, Training, and Structural **Optimization of Opto-Electronic Convolutional Neural Networks.** Jin Wang, Xiaofeng Shao, Jingvi Su and Antonio Bongue Kamongua; Nanjing Univ. of Posts and Tel., China. This work presents the architecture design of OE-CNN based

Tu2H.4 • 14:30 Invited



Report on the first real-time MDM transmission trial over field-deployed weakly-coupled Few-mode Fiber, Juhao Li; Peking Univ., China. We report the first real-time MDM transmission trial over field-deployed weaklycoupled FMF. 3.6-dB Q2-factor margin are observed for 80-km LP01 /LP02

Room 215, Track 2

Tu2H.5 • 14:50 Invited

MDM transmission.



Beam Steering Technologies for **Optical Wireless Communication**, Hongyan Fu; Tsinghua Univ., China. We will review our recent research progress of

integrated the sensing and communication system based on optical wireless communication.

Tu2E.6 • 15:20 Invited



Comprehensive strategies to overcome the limitation of bulkheterojunction organic solar cells, Lijian Zuo; Zhejiang Univ., China.

Tu2F.6 • 15:10 Invited Fourier domain mode locked

laser and its applications, Dongmei Huang; The Hong Kong Polytechnic Univ., HK.



Tu2G.6 • 15:10 Invited

AI-Powered Resource Allocation in Computing Power Optical Networks, Hui Yang; Beijing Univ. of Posts and Tel., China.

Tu2H.6 • 15:10 Invited



Multidimensionaldivisionmultiplexing optical based transmission technology, Jianping Li; Guangdong Univ. of Tech., China.

15:30-16:00 Poster Session 1 & Tea Break

Poster Session 1 (Best Poster Award Session) 15:30-16:00

P1.1 🌞

Crop Disease Detection Based on Deep Learning, Xiaoyang Xiao, Ziming Huang, Yi Xiong, Jingxi Peng, Zhenlin Huang and Yuzhu Zhao; *Shenzhen Univ., China.* This study presents a YOLOv5-based smart agricultural system for real-time disease monitoring and environmental control.

P1.2 🌞

Design of a silicon photonic methane sensor with a suspended nanomembrane silicon waveguide, Xingyu Liu, Siyu Liu, Qiyue Lang, Changlong Du, Zunyue Zhang, Tiegen Liu and Zhenzhou Cheng; *Tianjin Univ., China.* We study methane detection limits using suspended nanomembrane silicon (SNS) waveguides.

P1.3 🔆

An Improved KL-Divergence-based Carrier Phase Recovery Algorithm for FTN-DMB Systems, Yifei Li, Hao Deng and Jian Zhao; South China Univ. of Tech., China. We propose an improved Kullback-Leibler (KL) divergence based CPR algorithm for faster-than-Nyquist digital-multi-band systems.

P1.4 🔆

A Causal Perturbation-Aided Temporal Neural Network Scheme for Nonlinear Signal Equalization in Coherent Optical Fiber Communication Systems, Xinyu Yuan¹, Qi Zhang¹, Xiangjun Xin², Ran Gao², Xiaofang Hu³, Gang Fan³, Qihan Zhao¹, Yi Zhao¹, Zhiqi Huang¹, Fu Wang¹, Feng Tian¹, Yongjun Wang¹ and Qinghua Tian¹; ¹Beijing Univ. of Posts and Tel., China; ²Beijing Inst. of Tech., China; ³Beijing Inst. of C&E Tech., China. A causal perturbation-aided temporal neural network scheme is proposed to reduce input feature dimensionality and computational complexity.

P1.5 🔆

High sensitivity temperature sensor based on hybrid interferometer fabricated by splicing panda fiber and few mode fiber, Chao Jiang; *Hubei Normal Univ., China.* A novel hybrid interferometer temperature sensor was designed based on few mode fiber and panda fiber.

P1.6 🔆

A Geographical information Based Strategy to Resolve Last-Hop Satellite Ambiguity in LEO Mega-Constellation Distributed Routing, Jiaqi Li, Quan Chen, Lei Yang, Lizeng Gong and Zhenglong Yin; National Univ. of Defence Tech., China. This paper adopts a geographic-based routing identifier and proposes a low-overhead strategy for acquiring the last-hop satellite identifier.

P1.7 🔆

Generation of 37 fs Pulses from a Robust All-Polarization-Maintaining Er:Fiber Laser System, Siwei Peng¹, Ruifeng Chen¹, H. Y. Fu² and Qian Li¹; ¹Shenzhen Univ., China; ¹Peking Univ., China; ²Tsinghua Univ., China. We demonstrate a stable all-polarizationmaintaining Er-doped fiber laser system generating 37-fs (7-cycle) pulses at 128 MHz, with a 95-nm spectral bandwidth and 0.19% power fluctuation.

P1.8 🔆

Prediction of Point Ahead Angle in Interstellar Laser Communication Based on PSO-BP Algorithm, Lingyun Ke, Shengda Wang, Nan Cui, Hu Zhang and Xiaosheng Xiao; *Beijing Univ. of Posts and Tel., China.* A point ahead angle (PAA) prediction algorithm based on PSO-BP neural network model is proposed for satellite laser communication, with high prediction accuracy and low complexity.

P1.9 🔆

Adjacent Channel Leakage Ratio (ACLR)-Based Linearity Characterization and Optimization in Modified Uni-Traveling-Carrier Photodiodes, Shuhu Tan, Yongqing Huang, Jihong Ye, Xuejie Wang, Xiaofeng Duan, Kai Liu and Xiaomin Ren; *Beijing Univ. of Posts and Tel., China.* An assessment method based on the adjacent channel leakage ratio (ACLR) is proposed.

P1.10 🔆

A Miniature High-Sensitivity Insulated Acceleration Sensor Based on Fiber Bragg Grating, Xuanwei Xiong, Tianyu Yang, Shenxing Duan, Chen Liu, Sen Ma, Huanhuan Liu and Yuming Dong; Shenzhen Inst. of Advanced Tech., CAS, China. This study presents a miniature insulated acceleration sensor based on Fiber Bragg Grating (FBG) technology.

P1.11 🔆

Intermodal Dispersion Engineering of Arrayed Waveguide Architecture for On-chip Spectroscopy, Zhijie Wei, Zunyue Zhang, Yaru Wang, Xingyu Liu, Tiegen Liu and Zhenzhou Cheng; *Tianjin Univ., China.* We investigate the possibility of using arrayed waveguide architecture for chip-scale spectroscopy in the shortwavelength mid-infrared (SWMIR) spectral region.

P1.12 🔆

Accuracy Enhancement of Fiber Shape Sensing by Localized Torsion Compensation, Xuanyu Zheng¹, Tenglong Zhou¹, Yunlu Fan¹, Rui Zhu², Yuming Dong¹, Xiangjin Song³, Shanshan Chen³, Tianyu Yang¹, Jianwei Wu⁴ and Huanhuan Liu¹; ¹CAS Shenzhen Inst., China; ²Shenzhen Vivolight Medical Device & Tech. Co., Ltd., China; ³Hosp.of Zhengzhou Univ., China; ⁴Chongqing Normal Univ., China. We propose a localized torsion compensation method for 3D fiber shape reconstruction.

Poster Session 1 (Best Poster Award Session) 15:30-16:00

P1.13 🔆

LDPC decoder based on a minimalist bipartite GCN, Yiqun Pan¹, Qinghua Tian¹, Fangxu Yang¹, Feng Tian¹, Fu Wang¹, Leijing Yang¹, Qi Zhang¹ and Xiangjun Xin²; ¹Beijing Univ. of Posts and Tel., China; ²Beijing Inst. of Tech., China. This paper proposes a Low-Density Parity-Check (LDPC) decoder based on a minimalist bipartite graph convolutional neural network (GCN).

P1.14 🌞

Wideband Chaotic Microcomb Generation Via Dual-Comb Beating and Delay-Interfered Self-Phase-Modulated Feedback, Anran Li¹, Ning Jiang^{1,2}, Bingjie Xu¹, Yong Geng¹, Qi Li¹, Yinhang Liu¹, Ji Qi¹ and Kun Qiu¹; ¹Univ. of Electron. Sci. and Tech. of China, China; ²Tianfu Jiangxi Lab, China. A broadband chaotic microcomb is demonstrated using dual-comb beat frequency and delayed self-phase-modulation feedback.

P1.15 🔆

Preliminary Exploration of Cross-Core Sensing Characteristics in Twin-Core Fibers, Chenglin Yang, Mei Sang, Yusheng Liu, Haojun Lin and Tiegen Liu; *Tianjin Univ., China.* This paper presents a novel refractive index sensor based on cross-core sensing in twin-core fibers (TCFs).

P1.16 🔆

Research on Leakage Monitoring of Water Supply Pipelines Based on BOTDA, Jinglin Sui¹, Yanyang Lei¹, Peng Guan², Ping Xu³, Yongkang Dong¹ and Dexin Ba¹; ¹Harbin Inst. of Tech., China; ²Real Photonics Co. Ltd., China; ³Harbin Univ. of Sci. and Tech., China. The Brillouin distributed optical fiber sensing strain and temperature detection system was used to simulate and verify the application of distributed optical fibers in pipeline leakage monitoring, and a monitoring scheme was proposed.

P1.17 🔆

BP Neural Network Assisted iFEM for Damage Identification Using Triangular Layout FBG Arrays, Yi Li, Mengshi Zhu, Heming Wei, Liang Zhang and Fufei Pang; *Shanghai Univ., China.* This paper demonstrates the detection of PS nanoplastics with a size of 100 nm. A robust approach is proposed for identifying and repairing the abnormal points in FBG array based deformation monitoring system.

P1.18 🔆

Characterizations of Self-Imaging based Multimode Interferometer Embedded in Mach-Zehnder Interferometer, Yanping Li, Xue Tang, Ou Xu, Xinyong Dong and Quandong Huang; *Guangdong Univ. of Tech., China.* We propose a multimode interferometer embedded in the Mach-Zehnder Interferometer.

P1.19 🔆

Enhancing Physical Layer Security via Chaos Driven 3D Constellation Design for OFDM-PON, Jiaming He¹, Qinghua Tian¹, Yiqun Pan¹, Xiao Zhang¹, Fu Wang¹, Feng Tian¹, Qi Zhang¹ and Xiangjun Xin²; ¹Beijing Univ. of Posts and Tel., China; ²Beijing Inst. of Tech., China. This paper develops a 3D-16ary geometric shaping (GS) constellation with chaotic encryption for coherent OFDM-PON systems.

P1.20 🔆

The Random Forest Network Algorithm Enhanced FBG-MZI Cascaded Optical Fiber Sensor for High Accuracy Temperature and Glucose Concentration Measurement, Peichen He¹, Shuqi Xu¹, Siyi Xie¹, Dongrui Xiao¹, Liyang Shao², Lin Wang¹, Fuchuan Luo¹ and Jun Hong¹; ¹Hunan Inst. of Tech., China; ²Southern Univ. of Sci. and Tech., China. A fiber-optic sensor based on the cascade structure of FBG and MZI is proposed and experimentally verified.

P1.21 🌞

Machine Learning-Enhanced Dual-Parameter Fiber Sensor Using Tilted Grating for Simultaneous Turbidity and Temperature Monitoring, Junjie Bai¹, Junhui Sun², Renan Xu¹, Yichen Cheng¹, Zihan Huang¹, Li-Yang Shao ²and Weihao Lin¹; ¹Xiamen Inst. of Tech., China; We designed a sensor based on a tilted fiber grating and Random Forest model that simultaneously monitors turbidity and temperature.

P1.22 🔆

Integrated Vibration Sensing in DSCM Systems Under ECLs Based on ANN and Digital Twin, Bang Yang, Shangyi Wang, Jianwei Tang and Yanfu Yang; *Harbin Inst. of Tech., China.* Integrated optical communication and vibration sensing in DSCM systems is demonstrated with an artificial neural network trained by digital twin technology.

P1.23 🔆

Self-Supervised Neural Mutual Information Estimator for Probabilistic Shaping Signals in Fiber-Optic Systems, Yifan Cai¹, Qinghua Tian¹, Zuxian Li¹, Fangxu Yang¹, Sitong Zhou¹, Feng Tian¹, Qi Zhang¹ and Xiangjun Xin²; ¹Beijing Univ. of Posts and Tel., China; ²Beijing Inst. of Tech, China. A self-supervised neural mutual information estimator for probabilistic shaping (PS) signals is proposed.

P1.24 🔆

A Fiber Laser Integrated With Tapered Erbium-Doped Fiber Interferometer For Salinity Monitoring, Weihao Lin¹, Renan Xu¹, Yutong Liu¹, Mingkun Zhang¹, Junjie Bai¹, Yihua He¹, Boqiang Lin¹ and Li-Yang Shao²; ¹Xiamen Inst.of Tech., China; ²Southern Univ. of Sci. and Tech., China. We introduced a Mach-Zehnder interferometer based on tapered erbium-doped fiber for the purposes of filtering and salinity sensing within a laser cavity.

Poster Session 1 (Best Poster Award Session) 15:30-16:00

P1.25 🌞

Dynamic Bayesian Network-Driven Reliability Evaluation Model for Optical Networks, Chenyu Zhao, Xin Li, Yu Liu, Tianhao Liu, Shubo Qi, Dongrou Wang and Shanguo Huang; *Beijing Univ. of Posts and Tel., China.* This study proposes a Dynamic Bayesian Network (DBN)-based model for evaluating the reliability of optical networks.

P1.26 🔆

High-Sensitivity Multi-Frequency Acoustic Sensor Based on Hollow-core Microbubble Optical Resonator, Kai Zhang, Hongdan Wan and Qinran Jiang; Nanjing Univ. of Posts and Tel., China. A hollow-core microbubble optical resonator achieves multifrequency acoustic sensing.

P1.27 🔆

Resource Allocation for Key-Enhanced Cross-Domain Data Center Optical Networks, Xiaoyu Wang¹, Hao Jiang¹, Jianwei Li¹, Zhonghua Liang,¹ Yijia Zheng² and Yuan Cao²; ¹*China Academy of Info. and Comm. Tech., China;* ²*Nanjing Univ. of Posts and Tel., China.* This paper proposes a multi-dimensional resource joint allocation (MRJA) algorithm for realizing the secure interconnection of cross-domain data centers over optical networks.

P1.28 🔆

A Deep Reinforcement Learning Approach for RBMSCA in Optical Fiber Communication Networks, Xiao Zhang, Qinghua Tian, Zuxian Li, Fu Wang, Feng Tian, Sitong Zhou, Qi Zhang and Xiangjun Xin; *Beijing Univ. of Posts and Tel., China.* A deep reinforcement learning framework is proposed to solve the problem of joint routing, modulation, band, core, and spectrum allocation in multiband, multicore elastic optical networks.

P1.29 🔆

Design and Study of All-Fiber Mode Filter Based on Three-

Core Fiber, Teng Wang, Yalong Wen, Suxuan Cao, Haoyu Wang and Jiancun Zuo; *Shanghai Polytechnic Univ., China.* An all-fiber three-core mode filter is proposed, utilizing phase matching and mode coupling to selectively transmit LP31 mode while filtering LP11 and LP21 modes.

P1.30 🔆

Security performance research of multi-user scheduling mixed RF/FSO system based on FSO eavesdropping environment, Yiyi Yang, Dexian Yan and Yi Wang; *China Jiliang Univ., China.* This study derives and verifies closed-form SPSC and SOP formulas for a mixed RF/FSO link under RF and FSO eavesdropping.

P1.31 🔆

InGaAlAs/InP Integrated Optical Receiver Based on Inverse Design for Fabrication-Friendly and Low Loss, Laiwen Yu¹, Zecheng Zhao¹, Yinyin Hu¹, Zhijun Zhang¹, Jingshu Guo² and Yuechun Shi¹; ¹Yongjiang Lab, China; ²Zhejiang Univ., China. We demonstrate a low-loss InGaAlAs/InP receiver with inversedesigned WDM (loss <1 dB/crosstalk <-20 dB) and UTC-PDs (>200 GHz bandwidth).

P1.32 🔆

SDN-Enabled Load-Latency Co-Optimization for TWDM-PON with Cloud-Edge Collaboration, Yuting Chen, Qinghua Tian, Xiao Zhang, Zuxian Li, Fu Wang, Yongjun Wang, Qi Zhang and Xiangjun Xin; *China Beijing Univ. of Posts and Tel., China.* A task-typebased cross-domain load-latency cooperative resource scheduling algorithm is proposed for cloud-edge coordinated flexible time and wavelength division multiplexed passive optical network.

P1.33 🔆

A silicon photonics-based erbium-ytterbium co-doped waveguide amplifier, Ziming Dong, Yuqing Zhao, Guoqing Sun, Yaxin Wang, Lei Ding, Liqin Tang and Yigang Li; Nankai Univ., China. An Er-Yb co-doped waveguide amplifier fabricated via wafer-scale processes, using 200-nm-thick SiN photonic integrated circuits.

P1.34 🔆

Gain optimization of a thulium-doped amplifier based on Si3N4 photonic platform, Guoqing Sun, Yuqing Zhao, Yaxin Wang, Ziming Dong, Lei Ding, Liqin Tang and Yigang Li; *Nankai Univ., China.* We demonstrate a high-gain 1.8um waveguide amplifier based on Si3N4 platform with Tm, Al2O3 cladding via 1.6um pumping.

P1.35 🔆

Thin-film lithium niobate electro-optic modulator loaded with silicon nitride waveguides, Yaxin Wang, Yuqing Zhao, Guoqing Sun, Ziming Dong, Lei Ding, Liqin Tang and Yigang Li; *Nankai Univ., China.* We demonstrate thin-film lithium niobate electro-optical modulator loaded with silicon nitride waveguides.

P1.36 🌞

Single-Polarization, Low-Loss, and High-Manufacturability Hollow-Core Fiber Based on Truncated Capillary Glass Tubes, Shuaihang Wang¹, Yongjun Wang¹, Li Li¹, Zhipei Li², Qi Zhang¹, Feng Tian¹, Qinghua Tian¹, Fu Wang¹ and Haifeng Yang¹; ¹BUPT, China; ²Beijing Institute of Tech., China. This paper proposes a single-polarization hollow-core fiber achieving exceptional performance at 1550 nm wavelength.

Poster Session 1 (15:30-16:00)

P1.37 🔆

High modal gain Er,Yb:Ta₂O₅-cladding Er:LNOI waveguide amplifiers for on-chip Integration, Yuqing Zhao, Guoqing Sun, Yaxin Wang, Ziming Dong, Lei Ding, Liqin Tang and Yigang Li; *Nankai Univ., China.* We demonstrate a high-gain Er:LNOI waveguide amplifier with Er, Yb:Ta₂O₅-cladding.

P1.38

Atmospheric Turbulence Compensation of Digital Micromirror Device Based on Weighted Gerchberg-Saxton Algorithm, Hui Li¹, Zhiguo Zhang¹ and Zhehao Yan²; ¹Beijing Univ. of Posts and Tel., China; ²Beihang Univ., China. In this paper, a phase retrieval technique based on Gerchberg-Saxton weighting algorithm is proposed.

P1.39

Energy-Efficient SFC Deployment in LEO Satellite Networks, Tianhao Liu, Xin Li, Yu Liu, Chenyu Zhao, Xuhao Yan, Yongjun Zhang and Shanguo Huang; *Beijing Univ. of Posts and Tel, China.* This paper proposes an energy-efficient SFC deployment (EE-SFCD) scheme in LEO satellite networks to reduce satellite battery life consumption.

P1.40

Time Jitter Analysis in Photoconductive Sampling for High-speed THz Communication Signals, Hongqi Zhang¹, Wenbin Liu¹, Xin Meng¹, Jianxiao Luo¹, Zhiwei Wang¹, Junxian Chao¹, Shen Cai¹, Bin Yin¹, Ling Chen¹, Jingyu Lin¹, Chuan Ge¹, Yifan Hong² and Xianbin Yu³; ¹China Mobile (Hangzhou) Info. Tech. Co., Ltd., ²China; China Mobile Commu. Group Shandong Co., Ltd., China; ³Zhejiang Univ., China.

P1.41

Highly sensitive refractive index sensor based on femtosecond laser directly-wrote tapered long-period fiber grating, Kexin Yu, Fan Li and Changning Liu; *Hubei Normal Univ., China.* The innovative design of the tapered structure significantly enhances the sensitivity of the sensor.

P1.42

Hot-wire anemometer using cobalt-doped fiber based Michelson interferometer, Xinwei Zhao, Xinyong Dong, Qiang Wang, Pengbai Xu and Jun Yang; *Guangdong Univ.*, of Tech., China. A hot-wire anemometer based on a dual-arm optical fiber Michelson interferometer including a short length of laser heated cobaltdoped fiber is proposed.

P1.43

Real-time Clock Recovery in Coherent Optical Communications with Large Frequency Offse, Ruixin Tang, Yuanze Qu, Hao Li and Qianwu Zhang; *Shanghai Univ., China.* We propose a novel O&M clock recovery algorithm.

P1.44

Ground Damage Simulation Experiment System for Laser Interconnected Low Orbit Constellations, Bingyao Cao, Haijie Wang, Linhao Liu and Yiming Hong; *Shanghai Univ., China.* This paper proposes a ground-based simulation system that models link damage through dynamic ephemeris evolution and LEO.

P1.45

A Method for Improving Signal-to-noise Ratio in Longdistance Laser Ranging, Lei Xu, Jian Kong and Xueqiao Zhang; Hangzhou Dianzi Univ., China. This paper presents a method for improving the signal-to-noise ratio in laser ranging.

P1.46

On-chip Silicon Computational Spectrometer With 128-Sampling-Channel Meta-structures, Zeruihong She, Kai Wang, Hongren Tan and Lei Zhan; *Beijing Univ. of Posts and Tel., China.* We report a computational spectrometer based on a silicon-on-insulator (SOI) platform.

P1.47

A GRU Signal Denoising Method for Φ -OTDR Submarine Cable Monitoring System, Jiewei Chen, Zihao Sun, Qizhi Liu, Ying Yu and Yi Shi; *Shantou Univ., China.* A GRU signal denoising method for Φ -OTDR submarine cable monitoring system is proposed.

P1.48

Structure analysis of high-gain semiconductor optical amplifiers based on Crosslight and Lumerical, Antai Chen, Yunjiang Jin, Baijing Li and Ruidong Liu; *Sun Yat-sen Univ., China.* This paper optimizes the design of SOA optical amplifier, analyzes the effects of quantum well, cavity length and current density on the performance.

Poster Session 1 (15:30-16:00)

P1.49

High-performance integrated modulator based on graphene-black phosphorus van der Waals heterojunction, Feng Zhou; Comm. Univ.of Zhejiang, China. We report a modulator based on grapheneblack phosphorus heterostructure which enjoys a large operation waveband from visible (VIS).

Mid-infrared QCL-based Detection System for in-situ Monitoring of Nitrous Oxide, Chenlu Liu¹, Weihua Gong¹, Zhaowei Wang¹, Shumeng Wang¹, Yubin Wei¹, Ruizhan Zhai¹, Chongjun Yang² and Yangfei Hou³; ¹Qilu Univ. of Tech., China; ²¹Jining Public Security Bureau, China; ³Jinan Landong Laser Tech. Co. Ltd., China. This study develops a mid-infrared TDLAS system (4.6 µm QCL, 20 cm cell) for N₂O detection.

P1.51

Attention-Driven Networks for Edge-Preserving Infrared and Visible Image Fusion, Haiyan Shang, Lin Zhang and Jianxi Yang: Chongging Jiaotong Univ., China, A deep attention-driven network is proposed for edge-preserving infrared and visible image fusion.

P1.52

Adaptive Symbol Detection and Branch Pruning MLSE for Quatrobinary Shaping FTN WDM System, Jiavi Hao¹, Zhipei Li¹, Chenchen Wang¹, Dong Guo¹, Huan Chang¹, Xiaolong Pan¹, Fu Wang², Ze Dong¹, Ran Gao¹ and Xiangjun Xin¹; ¹Beijing Inst. of Tech., China; ²BUPT, China. In this paper, a pilot-aided adaptive symbol detection scheme with adaptive branch pruning MLSE is proposed.

P1.53

Athermal and energy-efficient 4-channel (de-)multiplexer with folded waveguides on SOI, Shigi Zhang, Tongxin Yang, Lei Zhang and Luyang Liu; Beijing Univ. of Posts and Tel., China. We report an athermal 4channel wavelength (de-)multiplexer with folded waveguides with improved thermal efficiency.

P1.54

The generation of millimeter-wave ultra-wideband fast frequency-hopping signals with multi frequency points based on dual optical combs, Ran Wang, Yang Liu, Hua Zhou, Jin Li, Tao Pu, Jilin Zheng, Xiaolong Zhao, Xinyu Zhang and Yunming Zhang; Army Eng. Univ. of PLA, China. One novel method is proposed to generate ultra-wideband, frequency-hopping signals with multi frequency points.

P1.55

A Transfer Learning-Based U-Net Approach for Industrial Anomaly Detection with Limited Samples, Kaiwen Yang, Guijie Zhu, Junyuan Zhao, Decheng Ding, Jiafan Zhuang and Chuliang Wei: Shantou Univ., China. Our U-Net transfer learning: pre-train on Crack500, finetune on KolektorSDD/RSDDs.

P1.56

Estimating External Force for FBG-Based Flexible Instruments by Using Cosserat Rod Theory, Wenjing Xie¹, Xuanyu Zheng², Yuming Dong², Tianyu Yang², Huanhuan Liu² and Xinyong Dong¹; ¹Guangdong Univ., of Tech., China, Shenzhen Inst. of CAS, China. We present a method estimating single-point load along flexible instruments using a Cosserat-rod model combined with Fiber Bragg Grating sensors.

P1.57

Analysis and Evaluation of the Impact of Fiber Effective Area on the Guided Acoustic Wave Brillouin Scattering Effect in Submarine Systems, Yuting Jiang, Zhiyuan Yang, Yihao Zhang, Weisheng Hu and Qunbi Zhuge; Shanghai Jiao Tong Univ., China. We analyze and evaluate the impact of fiber effective area on the guided acoustic wave Brillouin scattering (GAWBS) effect in submarine systems.

P1.58

High-Power Modified **Uni-Traveling-Carrier** Photodetector for Millimeter-Wave Communication. Zexu Ren, Yongging Huang, Shuhu Tan, Mingxi Yang, Kai Liu, Xiaofeng Duan and Xiaomin Ren; Beijing Univ. of Posts and Tel., China. A novel MUTC-PD is proposed by introducing Gaussian doping in the collection layer.

P1.59

Thermal Simulation and Optimization of High-Power Uni-Traveling-Carrier Photodetectors, Ruidong Liu, Yunjiang Jin and Baijing Li; Sun Yat-sen Univ., China. Based on COMSOL Multiphysics, the heat flux at the heat sink side in the N-down structure is 14.5 times areater than the substrate side.

P1.60

Comparative Study of The Effects of Self Phase Modulation in G.652.D, G.655.D, and G.654.E Optical Fibers of a 600 km Regional Backbone Network, Agbé ssignalé Lato, Barèrèm-Mêlgueba Mao and Atani Dominique Kolah; LPMCS, Togo. This study compares SPM effects in G.652.D, G.655.D, and G.654 E fibers over a 600 km link

Poster Session 1 (15:30-16:00)

P1.61

A Novel Approach for Tower Localization Utilizing Distributed Acoustic Sensing and Spectral Analysis, Xin He¹, Yifeng Zhu², Xiaohui Tang¹, Meng Xia¹, Shuaiqi Liu¹, Yanyang Lei¹ and Yongkang Dong¹; ¹Harbin Inst. of Tech., China; ²China Southern Power Grid, China. A DAS-based method identifies tensioned towers along OPGW by extracting FFT features and locating low-STD regions.

P1.62

Research on Fiber Optic Sensor and Demodulation Algorithm for Temperature and Pressure Dual Parameter Measurement, Shuai Guo, Xiaoning Song, Rui Zhu, Qiuyang Cao, Yijie Cheng and Ping Lu; State Grid Zhejiang Electric Power Co., Ltd., China; Huazhong Univ. of Sci. and Tech., China. This paper proposes an optical-fiber temperature and pressure sensor with a composite Fabry-Pérot cavity.

P1.63

Real-time Observation of the Spatiotemporal Dynamics of Q-switched Mode-locking in a Multimode Fiber Laser, Zixuan Xu, Qiang Hu, Xinyu Han, Lei Zhu, Xinge Liu, Chaoyang Geng, Yunhan Yu, Lixia Xi, Xiaoguang Zhang and Xiaosheng Xiao; *BUPT, China.* The spatiotemporal dynamics of Q-switched modelocking are observed in real-time within a spatiotemporal mode-locked fiber laser.

P1.64

A Self-adaptive Frequency Offset Estimation Algorithm for Linear All-Optical Sampling, Yang Hong, Junhong Wu, Ruixiang Zhong, Mengyao Liu, Zeyu Li, Xiangen Zhang, Shuaihang Wang, Leijing Yang and Yongjun Wang; *Beijing Univ. of Posts & Tel., China.* This paper proposes a self-adaptive frequency offset estimation algorithm based on dual-channel fourth-power fast Fourier transform (FFT).

VIP Room 3, Track 1

We propose the Gaussian function for

four vector modes using a combination of two orthogonal polarization modes

16:00-18:00 Tu3A. Novel fibers & Devices II Presider: Baicheng Yao, Univ. of Electronic Sci. and Tech. of China

Tu3A.1 • 16:00 Invited



Gaussian approximation for vector mode field in Optical Chongging W<u>u</u>, Fibers, Lanlan Liu, Zihe Huang, Fang Xie, Yunfan Lv and Kaihong

VIP Room 4, Track 6

16:00-18:00

Tu3B. Measurement & Imaging II Presider: Yongkang Dong, Harbin Institute of Technology, China

Tu3B.1 • 16:00 Invited

Wavelength swept chaotic Light source for sensing and measurement, Jianzhong Zhang; Harbin Eng. Univ., China.

Room 205, Track 4

16:00-18:00 Tu3C. Optoelectronic Integration II Presider: Jianjun He, Zhejiang University, China

Tu3C.1 • 16:00 Invited



Recent Advances in Widely **Tunable V-Coupled-Cavity Lasers,** Jianjun He; Zhejiang Univ., China. Recent advances in widely tunable V-coupledcavity lasers are presented.

Semiconductor

Invited Tu3C.2 • 16:20



with Gaussian.

Design and development of nanostructured free-form fewfibers, Ryszard Buczynski; Univ. of Warsaw,

R

Tu3B.2 • 16:20 Invited

Bent optical microfibre sensor its application for and nanonewton force measure-Qiang Wu; ment, Northumbria Univ., UK.

Optical Feedback Insensitivity Hvbrid-cavitv

Lasers, Yong-Zhen Huang; Inst. of Semiconductors, CAS, China. Hybrid-cavity semiconductor lasers with a deformed square microcavity as a wavelength selective high reflectivity mirror have been proposed and demon-strated experimentally.

Tu3C.3 • 16:40 Invited

A 1310nm AlGaInAs/InGaAsP-InP DFB laser with a periodically Room 206, YSA

16:00-18:00 **Tu3D. Young Scientist Award** Presider: Li Pei, Beijing Jiaotong University, China

Tu3D.1 • 16:00 🚫

A Phase-Locking-Free All-Optical Pattern-Matching System Based on SOA for Phase-Inverted BPSK Signals, Ying Tang, Ziyi Kang and Jinyong Chang; Xi'an Univ. of Archit. and Tech., China. This paper presents a phase-locking-free all-optical patternmatching system using a semiconductor optical amplifier (SOA).

Tu3D.2 • 16:15 🔿

High-Performance All-in-one Fiber-Tip Gas Flow Sensor Using Two-photon Polymerization technique, Fei Xie¹, Lili Liang¹ and Yaoyu Cao²; ¹Handan Univ., China; ²Jinan Univ., China. We present a 3D printed fiber-tip gas flow sensor based on twophoton poymerization with Fabry-Perot cavity shows stable, linear response, 60 pm/mL/min sensitivity.

Tu3D.3 • 16:30 🔿

Towards High-Speed and Hardware-Efficient IM-DD Noise Whitening for AI Clusters, Qi Wu¹, Zhaopeng Xu² and Weisheng Hu³; ¹HK Polytechnic Univ., HK; ²Penachena Lab, China; ³Shanghai Jiao Tong Univ., China. We experimentally investigate the impact of fixed-point resolution on the noise whitening filter in an ultra-highspeed IM-DD receiver, targeting reduced hardware complexity and power consumption for real-time implementation.

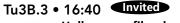
Tu3A.3 • 16:40 Invited



Dispersion-Shifted Non-Zero **Ring-Core Fibers for OAM** Modes, Yang Yue, Wengian Zhao and Yuxiang Huang;

Xi'an Jiaotong Univ., China. paper summarizes NZDSRF This design configurations and provides comparative analyses of their dispersion characteristics.





Hollow core fiber based sensors, Xiaobei Zhang; Shanghai Univ., China.

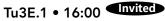


injection-blocked grating for direct modulation bandwidth broadening, Xun Li; McMaster Canada. By introducing a Univ., periodically injection-blocked grating, we managed to reduce the cavity loss as the injection current increases.

Room 210, Special 1

16:00-18:00

Tu3E. Organic Optoelectronics II Presider: Junyou Pan, Zhejiang Brilliant-Optoelectronics Tech., Co.,





Highly efficient and stable blue **OLEDs** based on sensitization, Dongdong Zhang; Tsinghua Univ., China.

Room 211, Track 7 16:00-18:00

Tu3F. Ultrafast & Nonlinear II Presider: **Qian Li**, Peking University Shenzhen Granduate School, China

Tu3F.1 • 16:00 Invited

Multi-dimensional and multifunctional light field control, Zhongguan Nie; National Univ. of Defense Tech., China.

Room 212, Track 3

16:00-18:00 Tu3G. Optical Networks II Presider: Hui Yang, Beijing University of Posts and Tel., China

Tu3G.1 • 16:00 Invited



Integrating FlexE with Wavelength-Selective Optical Networks: P2P versus P2MP Transceivers, Meihan Wu, X. Chen, R. Li, Y. Zhang and Zuging Zhu; Univ. of Sci. and Tech. of China, China.

Room 215, Track 2

16:00-18:00 **Tu3H. Optical Transmission II** Presider: Qinghua Tian, Beijing Univ. Posts and Tel., China

Tu3H.1 • 16:00 Invited



An Overview of Longitudinal Power Monitoring for Autonomous Optical Networks, Lixia Xi; Beijing Univ. of Posts & Tel., China. In this talk, we will

Tuesday, 29 July

review the two principal categories of LPM techniques, and highlight its applications.

Tu3E.2 • 16:20 Invited



Polarized and directional light emission in organic lightemitting devices based on bifunctional meta-electrodes,

🏧 Yangang Bi; Jilin Univ., China. We proposed a bifunctional metaelectrode by integrating functional metasurfaces on electrodes in OLEDs to obtain light management, and polarized and directional light emission has been realized in OLEDs.

Tu3E.3 • 16:40 Invited

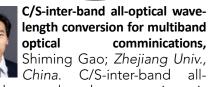


High performance solutionprocessed OLEDs sensitized by TADF polymers, Jungiao Ding; Yunnan Univ., China.

Tu3F.2 • 16:20 Invited

High-power thulium-doped fiber laser (provisional), Peiguang Yan; Shenzhen Univ., China.

Tu3F.3 • 16:40 Invited



optical wave-length conversion is proposed and demonstrated based on DFG in PPLN waveguides. Moreover, S+C+L-band transmission is realized with 200 Gb/s DP-QPSK signals over a distance of 125 km.

Tu3G.2 • 16:20 Invited



Dynamic Nonlinear Bandwidth Defragmentation in Multi-Band **Optical Networks,** Jiaxin Liu¹, Rentao Gu¹, M. Guang², K. Long² and Yuefeng Ji¹; ¹BUPT,

China. We investigate dynamic nonlinear bandwidth fragmentation in multiband optical networks and propose a defragmentation strategy addressing bandwidth mismatch and wavelength discontinuity.

Tu3G.3 • 16:40 Invited



Analysis of Optical Network Digital Twin Models Under Different Temporal Resolutions, Kanggi Zhu, Nan Hua, Chengyu Wu, Junfeng Cao and Xiaoping

Zheng; Tshinghua Univ., China. This work investigates the characteristics of optical network digital twins constructed from data with different temporal resolutions, and analyzes network dynamics.

Tu3H.2 • 16:20 Invited



High-capacity Optical Inter-Towards connects Nextgeneration Computing Networks, Junwen Zhang; Fudan Univ., China. We will report the latest

of high-capacity optical progress interconnects towards next-generation computing networks, including enabling technologies on high-bandwdith device, high-speed transmission, DSP and so on.

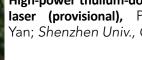
Tu3H.3 • 16:40 Invited



optical

One-hop all-optical DC-oriented networks for 2030, Liang Zhang; Huawei Technologies. Optical networks address this by removing the packet layer and direct connections, while technology aggregation effectively reduces latency and improves efficiency.

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VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

Room 206, YSA

Tu3A.4 • 17:00



Tunable three-dimensional waveguiding microstructures fabricated on the tip of standard single-mode optical Sławomir Ertman: fibers.

Warsaw Univ. of Tech., Poland.

Tu3B.4 • 17:00 Invited Optical fiber coherent anti-

Stokes Raman scattering microspectroscopy, Junfeng Jiang, Jinchao Dou, Tong Wang, Shuang Wang, Kun Liu, Xiaoshuang Dai, Jinying Ma and Tiegen Liu; Tianjin Univ., China.

Tu3C.4 • 17:00 Invited

Tu3C.5 • 17:20 Invited



Ultra-wideband photonic terahertz noise source and its applications, Pu Li; Guangdong Univ. of Tech., China. Here, we report a series of terahertz

photonic noise sources with photomixing multiple Gaussian-shaped noise slices from a super luminescent diode.

Tu3D.4 • 16:45 🔿

Adiabatic-tapered few-mode-fiber-based system for integrating optical fiber sensing telecommunication, Quandona and Huang¹, Yahao Li¹, Ou Xu¹, Xinyong Dong¹, Sławomir Ertman², Tomasz Woliń ski², Perry Shum³ and Yuwen Qin¹; ¹Guangdong Univ. of Tech. China. We demonstrated an adiabatic-tapered fewmode-fiber-based system for integrating sensing and telecommunication.

Tu3D.5 • 17:00 🔷

PDA-RoF: Polar Coordinates Assisted Hybrid Digital-Analog Radio-over-Fiber Modulation and Demodulation Architecture, Xiaobo Zeng¹, Jingtao Wang¹, Chaowen Tang¹ and Ruonan Deng²; ¹Xiangtan Univ., China. We propose and demonstrate a polar-coordinates-assisted digitalanalog radio-over-fiber technique based on cascaded analog pulse code modulation and digital modulation with hybrid constellation shaping.

Tu3D.6 • 17:15 🔿

Single-Wavelength 512-Gb/s SSBI-Free Linear Phase-Diverse Direct Detection with Carrier Phase Switching, Yixiao Zhu, Xiansong Fang, Lingjun Zhou, Weisheng Hu and Fan Zhang; Shanghai Jiaotong Univ., China; Peking Univ., China. We propose SSBI-free phase-diverse direct detection receiver using three carrier phase-switching branches.

18:30-20:30 Conference Dinner

Tu3A.5 • 17:20



Tuesday, 29 July

Broadband Multi-channel OAM Mode Convertors Based on the Long-Period Fiber Gratings, Yungi Liu; Shanghai Univ., China. We demonstrate the

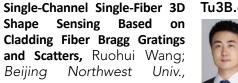
fabrication of long-period gratings (LPFGs) in multicore and few mode fibers by using focused carbon dioxide laser.

Tu3A.6 • 17:40 Invited



Cladding Fiber Bragg Gratings and Scatters, Ruohui Wang; Northwest Beijing Univ.,

China.



Tu3B.6 • 17:40 Invited

Very-low-frequency distributed fiber sensing and its applications, Pengbai Xu; Guangdong Univ. of Tech., China.



Fabrication of high speed directly modulated DFB laser array, Song Liang; Inst. of Semiconductors, CAS, China.

Flying particle sensor in hollowcore optical fibers, Shangran Xie; Beijing Inst. of Tech., China.

Tu3B.5 • 17:20 Invited

Room 210, Special 1

Room 211, Track 7

Room 212, Track 3

Room 215, Track 2

Tu3E.4 • 17:00 Invited



Recent Progress in the development of OLED Materials, Junyou Zhejiang Brilliant-Pan; Optoelectronics Tech. Co., Ltd., China. In this talk, I will

aive introductions to the status of AMOLED-based panel industry in China and our company.

Tu3E.5 • 17:20 Invited



Non-volatile Memory Light-Emitting Transistors and Openstructured AC-driven OLEDs. Hong Meng; Peking Univ. ShenZhen Graduate School,

China.

Tu3E.6 • 17:40 Invited



High-Throughput Screening and Inverse Molecular Design of **OLED** Materials Guided by Machine Learning, Dandan Song; Beijing Jiaotong Univ.,

China.

Tu3E.4 • 17:00 Invited

Advancements in Noise Control for All-Polarization-Maintaining Mode-Locked Fiber Lasers, Qian Li; Peking Univ. Shenzhen Graduate School,

Tu3G.4 • 17:00 Invited



Tu3H.4 • 17:00 Invited



A modified Kolmogorov-Arnold Network for laser field classification under atmospheric turbulence channel, Yongye Qiu¹ Kaige Yang¹, Junsong Chen¹, Jiagi Peng¹, Fucan Zhang¹, Ting Zhang², Haixia Feng³ and Kaimin Wang¹; ¹Univ. of Shanghai for Sci. and Tech., China.

Tuesday, 29 July

Tu3H.5 • 17:20 Invited



Impacts of Second-Harmonic Generation on the Temporal and Statistical Properties of Laser Sources, Siyu Chen, Jun Ye, Lei Du, Wenwen Cheng, Rongtao Su and Pu Zhou: National Univ. of Defense

Tu3F.6 • 17:35 ★

Tech., China.

Tu3F.5 • 17:20 🕇

China.

GHz Harmonic Mode-Locked Dual-Pumped Laser based on Nonlinear Multimode Interference, Ziyi Fu¹, Tianye Huang¹, Hongbo Zheng¹, Jianxing Pan¹, Jing Zhang¹, Zhichao Wu¹, Xiang Li¹, Zhenxing Chen¹ and Perry Ping Shum²; ¹China Univ. of Geosci., China; ²South Univ. of Sci. and Tech., China.

Tu3F.7 • 17:50

Study on special shaped pulses in L-band NPR mode-locked erbium-doped fiber laser, Enfan Zhou, Danyang Wang, Lei Huang, Boxin Li, Yi Liu, Dongfang Jia, Chunfeng Ge, Zhaoying Wang and Tianxin Yang; Tianjin Univ., China.

Tu3G.5 • 17:20 Invited

Provisioning and Protection for **Multiple Failures in F5G-A and F6G** Optical Networks, Ning Deng; Great Bay Univ., China.

Tu3G.6 • 17:40

Multiscale fuzzv clustering-Enhanced **Hierarchical Mapping for Large Models in IP** over Fine-Grain OTN. Zepeng Zhang, Hui Yang, Tiankuo Yu and Qiuyan Yao; Beijing Univ. of Posts and Tel., China. In this paper, we propose an efficient IP over Fine-Grain OTN optimized mapping scheme based on Multiscale fuzzy clustering.

Tu3H.6 • 17:40 Invited



Intelligent Identification and Decoding: Communication **Receiver Driven by Deep Learning,** Qinghua Tian; Beijing Univ. of Posts and Tel., China.

18:30-20:30 **Conference Dinner**

VIP Room3, Track 1

Posts and Tel., China.

Forward Brillouin fiber laser,

Zuxing Zhang; Nanjing Univ. of

08:00-10:00 W1A. Novel Fibers & Devices III Presider: Ailing Zhang, Tianjin University of Technology, China

W1A.1 • 08:00 Invited

W1A.2 • 08:20 Invited



Single-wavelength Cylindrical Vector Beam Yb-Doped Fiber Laser, Shumin Zhang; Hebei Normal Univ., China. We experimentally achieve singlewavelength cylindrical vector beam (CVB) emission in a Yb-doped fiber laser

at 1035 nm (0.1 nm bandwidth), producing both radially and azimuthally polarized beams.

W1A.3 • 08:40 Invited



Experimental generation of high power cylindrical vector beam in a fiber cavity, Weiging Gao, Hefei Univ. of Tech., China. This work demonstrates the generation

of high-power cylindrical vector beams (CVB) in a fiber cavity integrating oscillator and amplifier.

VIP Room 4, Track 6

08:00-10:00

W1B. Measurement & imaging III Presider: Qiang Wu, Northumbria University, UK

W1B.1 • 08:00 🕇

Ultra-high sensitivity acid pH optical fiber A Novel Modified Uni-traveling Carrier sensor based on core-offset structure coating smart hydrogel, Jinglei Zhang¹, Haiwei Zhang¹, Qi Lu¹, Zhihong Chen¹, Lifang Xue¹, Jia Shi², Wei Shi³ and Jianguan Yao³; ¹Tianjin Univ. of Tech., China; ²Tiangong Univ., China; ³Tianjin Univ., China.

W1B.2 • 08:15 🗡

Direct laser writing of fiber-tip microcavity for photoacoustic multi-gas sensing, Enbo Fan and Jun Ma; Jinan Univ., China.

W1B.3 • 08:30 🕇

Parallel Laser Doppler Vibrometer Based on Dual Electro-Optic Frequency Combs, Qiyue Yu, Xi Liu, Xiuyuan Sun, Shilong Pan and Zhongyang Xu; Nanjing Univ. of Aero. and Astro., China.

W1B.4 • 08:45 ★

A Generalizable Wavelength Demodulation Method for Fiber-Optic Fabry-Pérot Cross-Shaped Metasurface for Wide-Angle Pressure Sensors via Federated Learning, Sufen Ren¹, Shengchao Chen², Hao Shi¹ and Guanjun Wang¹; ¹Hainan Univ., China. ²Univ. of Tech. Sydney, Australia.

Room 205, Track 4

08:00-10:00 W1C. Optoelectronic Integration III Presider: Lei Wan, Ningxia University, China

W1C.1 • 08:00 🗡

Photodiode with Dual Electric Field Control Lavers, Zhi'en Li, Dan Yang, Lei Han, Minmin Zhu and Xiaogiang Lu; Fuzhou Univ., China.

W1C.2 • 08:15 🕇

Enhancing the Light Absorption of the InGaAs / InP Photodetector by Integrating Metal Grating Arrays, Lei Han, Zhi'en Li, Dan Yang, Minmin Zhu and Xiaogiang Lu; Fuzhou Univ., China.

W1C.3 • 08:30 🕇

Narrow Linewidth Hybrid Integrated Laser Based on Distributed Weak-feedback from Silicon Waveguides, Da Wei, Leilei Shi, Jiali Li, Zeheng Zhang, Lei Zhai, Shumin Yang, Yujia Li, Ligang Huang and Tao Zhu; Chongging Univ., China.

W1C.4 • 08:45 ★

Spectral-Scanning LiDAR, Yaqi Han¹, Chenxingyu Huang¹, Qian Li² and Hongyan Fu¹; ¹Tshinghua Univ., China; ²Peking Univ., China.

Room 206, Track 9

08:00-10:00

W1D. Quantum Photonics II Presider: Jiefei Chen, Southern Univ. of Science and Technology, China

W1D.1 • 08:00 Invited



Efficient and long-lived integrated quantum memories for light, Zong-Quan Zhou; Univ. of Sci. and Tech. of China, China. I will present our recent

achivements in highly efficient and longlived integrated quantum memories, using rare-earth-ion-doped crystals.

W1D.2 • 08:20 Invited



Quantum photonic circuit design based on software, Youngik Sohn; Korea Advanced Ins. of Sci. and Tech., Korea. In this context, I will introudce a

software approach for designing very accurate quantum photonic circuits.

W1D.3 • 08:40 Invited



Generalized entropic uncertainty relation and its applications, Dong Wang; Anhui Univ., China.

Room 210, Special 1

08:00-10:00 W1E. Organic Optoelectronics III Presider: Jingbi You, Institute of Semiconductors, CAS, China

W1E.1 • 08:00 Invited



High-Resolution Patterning of Fluorescent Films by Femtosecond Laser-Induced Forward Transfer, Yue-Feng Liu; Jinlin Univ., China. We present a

femtosecond laser-induced forward transfer (FsLIFT) technology.

W1E.2 • 08:20 Invited



Trace impurity doping in organic semiconductors, Li; Tianjin Univ., Ligiang China.

Room 211, Track 5

08:00-10:00

W1F. Optical Signal Processing I Presider: **Chester Shu.** The Chinese University of Hong Kong, HK

W1F.1 • 08:00 Invited

W1F.2 • 08:20

Photonic-enhanced ultrafast joint time-frequency signal analysis and processing, Jose Azana, Hao Sun; Inst. National de la Recherche Scientifique (INRS), Canada.

Programmable Processing of

Optical Frequency Combs Using

Spectral Talbot Amplifier,

Chester Shu; The Chinese

Univ. of Hong Kong, HK. We

Room 212, Track 3

08:00-10:00 W1G. Optical Networks III Presider: Xiaosong Yu, Beijing Univ. of Posts and Tel., China

W1G.1 • 08:00 Invited



Quantum Kev Distribution **Networks: Networking Frame**works and Standardization Trends, Xiaosong Yu; Beijing Univ. of Posts and Tel., China.

W1G.2 • 08:20 Invited



Sensitivity of Traffic Features for Detecting Concept Drift in **Optical Access Networks,** Lihua Ruan; Pengcheng Lab, China.

W1G.3 • 08:40 🕇

Edge-Cloud Collaborative Distributed DNN Training in Metro Optical Network, Xiaodong Liu, Shan Yin, Jiarui Li, Mengru Cai, Yutong Chai and Shanguo Huang; Beijing Univ. of Posts and Tel., China.

Room 215, Track 2

08:00-10:00 W1H. Optical Transmission III Presider: Xiaoguang Zhang, Beijing Univ. of Posts and Tel., China

W1H.1 • 08:00 ★

Ultra-encrypted Optical Wireless Communication Based on High-dimensional OAM Hybrid Nerual Network, Chaoxu Chen¹ Jiayi Qi², Xinjie Zhang¹, Haoyu Zhang¹, Yuan Wei¹, Ziwei Li¹, Chao Shen¹ Junwen Zhang¹, Nan Chi¹, Haiwen Cai³ and Jianyang Shi¹; ¹Fudan Univ., China.

W1H.2 • 08:15 🕇

Photonics-aided Fiber-Wireless Integrated System at W-band with Polarization Transparent based on Simplified Coherent via Alamouti Coding, Qinqyu Han, Yinjun Liu, Boyu Dong, An Yan, Dianyuan Ping, Yaxuan Li, Liangtao Chen, Yuqin Yuan, Aolong Sun, Jianyang Shi, Nan Chi and Junwen Zhang; Fudan Univ., China.

Wednesday, 30 July

W1H.3 • 08:30 🕇

54-Gb/s Photonics-assisted Routing and **Relaying W-band Millimeter-wave Signals** over 4.3-kilometer Wireless Distance Transmission, Dianyuan Ping, Yinjun Liu, Haoyu Zhang, Penghao Luo, Boyu Dong, Liangtao Chen, Yuan Wei, Jianyang Shi, Nan Chi and Junwen Zhang; Fudan Univ., China.

W1H.4 • 08:45 🕇

Amplitude-Aware Computational Sharing: A Joint State-Space Optimization Framework for Baud-Rate MLSE and BCJR Decoders, Chenchen Wang, Zhipei Li, Ran Gao, Ze Dong and Xiangjun Xin; Beijing Inst.of Tech., China.



Flexible Printed Electronics and Wengyong Lai; Devices, Nanjing Univ. of Posts and Tel., China. This research

designs highprintable performance organic polymer optoelectronic materials and interfaces to overcome fabrication bottlenecks in flexible electronics.

W1F.3 • 08:40 ★

denoising amplification.

Adaptive Full-Band Wavelet Denoising Optimization for Multimode Fiber Heartbeat Signal. Yuanfang Zhang, Chufeng Huang and Wen Chen; Jimei Univ., China.

demonstrate programmable control of broadband frequency combs via

VIP Room 3, Track 1

W1A.4 • 09:00 Invited



Polymer optical fiber random lasers and scintillation fibers, Zhijia Hu; Anhui Univ., China.

W1A.5 • 09:20 Invited



Wednesday, 30 July

Wavelength control of fiber random lasers, Weili Zhang; Univ. of Electronic Sci. and Tech. of China, China.

W1A.6 • 09:40 Invited



Feedback-enhanced Q-switched random laser based on fiber ring, <u>Ailing Zhang</u>, Mengdi Zong, Wanqian Zhu; Tianiin Univ. of Tech., China.

A Q-switched random laser based on fiber ring is proposed, which uses fiber ring as a random feedback structure.

VIP Room 4, Track 6

W1B.5 • 09:00 ★

A novel U-shaped fiber refractive index sensor based on surface plasmon resonance effect and tantalum pentoxide, Mengyuan Wu, Shiwei Liu and Hongyan Fu; Xiamen Univ., China.

W1B.6 • 09:15 ★

Long-Range and High-Speed Coded BOTDR Based on Fast Fourier Transform Processing, Yang Zhang¹, Jiageng Chen¹, Hanzhao Li¹, Xuhui Yu² and Zuyuan He²; ¹Shanghai Jiao Tong Univ., China; ²Ningbo AllianStream Photonics Technology Co., Ltd., China.

W1B.7 • 09:30 ★

Low crosstalk salinity sensor operates at 1.55 μm and 2 μm wavelength bands, Yahao Li, Zengyang Wu, Jiaqi Ran, Min Yang, Ou Xu, Xinyong Dong and Quandong Huang; *Guangdong Univ.* of Tech., China.

W1B.8 • 09:45 ★

High-Speed Fiber Shape Sensing Based on Data-Driven Approach: A Feasibility Study, Tenglong Zhou¹, Xuanyu Zheng¹, Yunlu Fan¹, Tianyu Yang¹, Rui Zhu², Xiangjin Song³, Shanshan Chen³, Yihui Cao², Yuming Dong¹, Jianwei Wu⁴ and Huanhuan Liu¹; ¹Shenzhen Inst. of Advanced Tech., CAS.

Room 205, Track 4

W1C.5 • 09:00 🕇

330 to 500 GHz Terahertz Photoconductive mixer with Hybrid Lens-Horn Structure, Pengshi Chen, Pu Li, Lijuan Liu, Yutong Chen, Yuhui Song, Yuehui Sun, Wenjie Liu, Yuncai Wang and Yuwen Qin; *Guangdong Univ. of Tech.*, *China*.

W1C.6 • 09:15 🗡

On-chip glucose sensor based on microstructured Mach-Zehnder Interferometer, Jiaqi Ran¹, Yahao Li¹, Kedi Peng¹, Xu Ou¹, Xinyong Dong¹, Slawomir Ertman², Tomasz R. Woliński², Perry Ping Shum³ and Quandong Huang¹; ¹Guangdong Univ. of Tech., China.

W1C.7 • 09:30 ★

On-Chip Refractive Index Sensor based on Micro-Ring Resonator with Microstructure Slot, Xue Tang¹, Zongyang Cai¹, Juncheng Zhou¹, Ou Xu¹, Xinyong Dong¹, Slawomir Ertman², Tomasz R. Wolinski², Perry Ping Shum³ and Quandong Huang¹; ¹Guangdong Univ. of Tech., China.

W1C.8 • 09:45 ★

Ultra-bandwidth dual-mode (de)multiplexer based on adiabatic asymmetric directional couplers, Juncheng Zhou¹, Quandong Huang¹, Wanyu Wu¹, Kaijian Zhang¹, Ou Xu¹, Sławomir Ertman², Tomasz Woliński², Perry Shum³ and Xinyong Dong¹; ¹Guangdong Univ. of Tech., China.

Room 206, Track 9

W1D.4 • 09:00 Invited



Quantum entangled networks and experimental verifications, Ming-Xing Luo; Southwest Jiaotong Univ., China.

W1D.5 • 09:20 Invited



Coupled GaN/AIN quantum dot structure as a single photon source, Zonghai Hu; Beijing Univ. of Sci. and Tel., China. In this work, MBE-grown

coupled GaN/AIN quantum dot structures exhibit photoluminescence between 300~360 nm.

W1D.6 • 09:40 Invited



Manipulate the Flying and Stored Photons with Cold Atoms, Jiefei Chen; Southern Univ. of Sci. and Tech., China.

Room 210, Special 1

W1E.4 • 09:00 Invited



Efficient perovskite optoelectronic devices, Jingbi You; Inst. of Semiconductors, CAS, China. I will talk about work recent on

perovskite solar cells and lightemitting diodes.

W1E.5 • 09:20 Invited



Large-area growth of organic single crystals toward highopoelectronic performance devices, Jiansheng Jie: Soochow Univ., China. We

further demonstrated the application of organic single crystal in highperformance optoelectronic devices.

W1E.6 • 09:40 Invited



Recent progress of deep UV LED and applications, Changging Chen; Huazhong Univ. of Sci. and Tech., China. This study reviews recent advances in DUV-LED efficiency enhancement,

Room 211, Track 5

W1F.4 • 08:55 ★

Unambiguous Microwave Angle-of-Arrival Estimation via Dual-Baseline Polarization-Multiplexed Coherent Photonic Receiver, Wanrong Li, Zhenzhou Tang and Shilong Pan; Nanjing Univ. of Aero. and Astro., China.

W1F.5 • 09:10 🗡

Wideband Radar Section Cross measurement and diagnostic imaging using microwave photonic technique, Wenhao Yan, Zhijian Zhang, Lihan Wang, Yicheng Li, Xiangchuan Wang and Shilong Pan; Nanjing Univ. of Aero. and Astro., China.

W1F.6 • 09:25 ★

Microwave photonic I/Q downconverter for fiber remoting enabled by injectionlocked carrier regeneration, Xiaoyu Wang, Zhenzhou Tang and Shilong Pan; Nanjing Univ. of Aero. and Astro., China.

W1F.7 • 09:40 🕇

A Practical End-to-End Hybrid Geometric-Probabilistic Shaping Framework with Lightweight Channel Modeling, Yuan Wei, Yinjun Liu, Boyu Dong, Guojin Qin, Yaxuan Li, Chaoxu Chen, Haoyu Zhang, Chao Shen, Junwen Zhang, Nan Chi and Jianyang Shi; Fudan Univ., China.

Room 212, Track 3

W1G.4 • 08:55 🗡

Wavelength Converter Deployment in C+L Optical Networks, Jiaxue Wang, Shan Yin, Guohao Jin, Jinbiao Nie, Mengru Cai, Xiaodong Liu and Shanguo Huang; Beijing Univ. of Posts and Tel., China.

W1G.5 • 09:10 🕇

Multi-dimensional Feature-Self-Organizing Mapping-based Dynamic Path-Slot Joint Protection for Fine-Grain OTN. Tiankuo Yu¹, Hui Yang¹, Qiuyan Yao¹, Yang Zhao², Jie Zhang¹ and Mohamed Cheriet³; ¹Beijing Univ. of Posts and Tel., China: ²China Mobile Research Inst., China; ³Univ. of Quebec, Canada.

W1G.6 • 09:25 ★

Dynamic Time-Slot Scheduling for Heterogeneous Traffic Management in Hybrid Electro-Optical Data Center Networks, Zixiao Wang, Yun Teng, Zhao Li, Qiuyan Yao, Hui Yang and Jie Zhang; Beijing Univ. of Posts and Tel., China.

W1G.7 • 09:40

Adaptive Fast Re-routing Scheme for Secure Dynamic End-to-End Service in Quantum Key Distribution Networks. Wenjie Huang, Xiaosong Yu, Yuhang Liu, Jingjing Liu, Yongli Zhao and Jie Zhang; Beijing Univ. of Posts and Tel., China.

Room 215, Track 2

W1H.5 • 09:00 🗡

A Soft-Aided Concatenated Staircase and Hamming Decoder Based on Bit-Flipping and Bit-Marking, Yutian Li¹, Feng Tian¹, Xiangjun Xin^{1,2}, Qi Zhang¹, Yongjun Wang¹, Qinghua Tian¹, Fu Wang¹, Sitong Zhou¹, Junyuan Song², Jianwei Zhou¹, Jue Wang¹, Jing Zhang¹ and Chuanji Yan¹; ¹Beijing Univ. of Posts and Tel., China.

W1H.6 • 09:15 ★

Unsupervised-Domain-Adaptation Based Adaptive Equalizer for Impairment Compensation in Coherent Optical Systems, Xuan Tang, Xing Liu and Jian Zhao; South China Univ. of Tech., China.

W1H.7 • 09:30 ★

Fading Suppression of 280-Gb/s C-band IM-DD Optics with Multi-Tap Optical-Digital Equalization, Ziheng Zhang, Yixiao Zhu, Keru Zhou, Yimin Hu and Weisheng Hu; Shanghai Jiao Tong Univ., China.

W1H.8 • 09:45 🕇

1024-QAM Signal Transmission via a Nested Anti-Resonant Nodeless Fiber System Using Delta-Sigma Modulation, Yuanxiao Meng, Yu Qin, Jianyu Long, Jianjun Yu, Jie Zhu, Limin Xiao and Kaihui Wang; Fudan Univ., China.

10:00-10:30 Poster Session 2 & Tea Break

Poster Session 2 (10:00-10:30)

P2.1

Inverse-Designed Multimode Fully-etched Subwavelength Silicon Grating Coupler, Kaiwen Tong, Wanli Ma, Muchen Ding and Yuanfei Zhang; Southeast Univ., China. We present an inverse-designed apodized multimode grating coupler for C-band operation on a silicon-on-insulator platform.

P2.2

LPF-Aided Nonlinear Compensation in Optical Fiber **Communication Systems,** Zili Fang, Jiaojiao Lv, Yi Zhao, Peiyun Ge, Wenbo Zhang and Lixia Xi; Beijing Univ. of Posts and Tel., China. A tunable Raised Cosine (tRC) LPF scheme is proposed for nonlinear compensation in optical systems.

P2.3

High-Sensitivity Optical Fiber Temperature Sensor Based on Vernier Effect, Lijun Li, Xingxia Wang, Erao Liang, Tianzong Xu, Tianxiang Zhang, Dong Zhang and Jianwei Zhang; Shandong Univ. of Sci. and Tech.,

China. Experimental results demonstrate that the sensor exhibits excellent linearity, stability, and repeatability within the temperature range of 22 °C to 46 °C.

P2.4

Ant colony satellite routing and wavelength allocation algorithm based on A* enhanced, Zikang Li, Qi Zhang, Yuanfeng Li, Xiangjun Xin, Ran Gao, Yi Zhao, Ying Song, Fu Wang, Feng Tian, Yongjun Wang, Qinghua Tian and Sitong Zhou; BUPT, China. An ant colony satellite routing and wavelength allocation algorithm based on A* enhanced is proposed.

P2.5

Harmonic Mode-locked Yb-doped Fiber Laser based on Graphene Saturable Absorber, Xiaodong Liu and Yun Teng; Beijing Anke Huisheng Technology Co., Ltd., China. We achieved stable mode-locked pulses in an all-normal dispersion Yb-doped mode-locked fiber laser using graphene saturable absorbers.

P2.6

High-sensitive fiber-optic MZI Cu2+ sensor, Xuanyu Liu, Zhiyuan Liu, Yanan Zhang, Songgi Zhang, Zuhao Liao and Bo Han; Northeastern Univ., China. A fiber-optic MZI sensor functionalized with *i*-carrageenan/sucrose detects Cu(II). Detection relies on disruption of the 1 -carrageenan-sucrose structure.

P2.7

Large Language Model Enhanced RMSA in Elastic Optical Networks, Hao Yu Wang, Maosheng Duan, Zanshan Zhao and Guanjun Gao; ao Lv, Yi Zhao, Peiyun Ge, Wenbo Zhang and Lixia Xi; Beijing Univ. of Posts and Tel., China. We propose the LLM-Enhanced RMSA architecture, which enhances RMSA through dynamic model selection and achieves lower blocking rates in request simulations.

P2.8

Application of hollow core fibre in temperature acoustic wave sensing, Li Deng¹, Bozhong Li¹, Jun Wu², Tong Chen¹, Yong Xiang², Yang Li¹, Peng Li², Jun Chu², Lei Zhang², Hongyan Zhou², Zhiyi Guo¹ and Liping Ke²; ¹State Grid Info. & Tel. Branch, China; ²YOFC, China. This paper introduces the temperature and acoustic wave sensing technology verification platform based on HCF and solid fiber.

P2.9

Dissolved Oxygen Prediction Model Based on GRU-N-Beats, Chunying Xu, Yuhong Xu, Fuchang Chen, Chuliang Wei and Yifei Dong; Shantou Univ., China; Guangzhou Marine Geological Survey, China. This paper proposes a wavelet-based GRU-N-Beats model for dissolved oxygen prediction in the South China Sea.

P2.10

Inverse Design and Optimization of DFB Laser Spectra Using Deep Learning, Yatao Yao, Chuanning Niu, Feng Gao and Jia Zhao; Shandong Univ., China. A deep neural network is developed to predict key design parameters from spectral features.

P2.11

Simulation Analysis for Anchor Damage in Oil-Filled Submarine cable, Zhenjin Cen¹, Tailong Lv¹, Xiaowei Huang¹, Yining Zhang¹, Kaiyu Zeng¹, Chi Cai¹ and Xiaohui Tang²; ¹Haikou Šubbureau, Guangzhou Bureau, EHV Transmission Company of China Southern Power Grid Co., Ltd., China; ²Harbin Inst. of Tech., China. 3D finite element simulations reveal optical fiber strain correlates linearly with conductor strain.

P2.12

Modulation format recognition with support vector machines (SVM) based on clustering features in highspeed optical fiber communication systems, Aoran Zheng, Qi Zhang, Zhigi Huang, Xiangjun Xin, Ran Gao, Siyuan Chen, Jing Xu, Fu Wang, Feng Tian, Yongjun Wang, Qinghua Tian, Sitong Zhou and Leijing Yang; BUPT, China. A blind modulation format recognition scheme is proposed for high-speed optical fiber communication systems.

P2.13

Ultra-Broadband Mode Conversion at 2 μm Wavelength Band, Wanting Ji, Wanyu Wu, Ou Xu, Quandong Huang and Xinyong Dong; *Guangdong Univ. of Tech.*, *China.* We propose an ultra-broadband mode converter based on a long-period grating for operating at the dispersion turning point of a fewmode waveguide.

P2.14

A Mamba-YOLO-based algorithm for semiconductor laser chip defect detection, Jue Wang¹, Feng Tian¹, Qi Zhang¹, Yongjun Wang¹, Qinghua Tian¹, Fu Wang¹, Zhipei Li² and Biao Luo³; ¹BUPT, China; Beijing Inst. of Tech., China; Accelink Tech. Co., Ltd., China. We proposed an improved YOLOv8 algorithm based on Mamba-YOLO.

P2.15

Broadband and high sensitivity Fiber optic visible light sensor based on sodium copper chlorophyllin and Surface Plasmon Resonance effect, Yanxi Wang, Xiaolan Li, Binbin Song and Yinping Miao; *Tianjin Univ. of Tech, China*. A broadband (405-808 nm)and high sensitivity 0.502 nm/mWFiber optic visible light sensor based on sodium copper chlorophyllin and U-shoped fiber Surface Plasmon Resonance device is desmonstrated.

P2.16

Reference Frequency Correction of Coherent Wind Measurement Lidar Based on Energy Centroid Approach, Xueqiao Zhang, Jian Kong, Bangning Mao and Lei Xu; *Hangzhou Dianzi Univ., China; China Jiliang Univ., China.* The frequency correction of the nonlinear mirror reflection signal of the coherent wind measurement lidar is carried out to reduce the heterodyne ref-erence frequency error.

P2.17

Explaining BiLSTM Prediction for Optical Fiber Modeling Based on Multiple Interpretation Methods, Shubo Qi, Xin Li, Dongrou Wang, Chenyu Zhao, Ruoting Liu and Shanguo Huang; *Beijing Univ. of Posts and Tel., China.* We interpret the BiLSTM model used for fiber channel modeling with ten different interpretation methods.

P2.18

ResNet-Based Equalization in NFDM Systems with B-Modulation, Ruyi Wang, Yongjun Wang, Lu Han, Haifeng Yang, Haoyu Gao and Qi Zhang; *Beijing Univ. of Posts and Tel., China.* We propose a ResNet-based equalizer for NFDM systems operating at 7.2 Gbaud.

P2.19

An EfficientNet-assisted MFR scheme for NFDM system,

Haoyu Gao, Yongjun Wang, Lu Han, Haifeng Yang, Ruyi Wang and Qi Zhang; *Beijing Univ.of Posts and Tel., China.* Compared with traditional CNN and ResNet models, the EfficientNet-B0-based NFDM scheme for MFR reduces the space complexity to 15.6% and 35.9%.

P2.20

Baud Rate-Tolerant OSNR Monitoring Method for High-Nonlinearity Optical Systems based on Statistical Moments, Mingrui Lin¹, Fei Wang¹, Qi Xu¹, Wei Yan¹, Yingyan Zhang², Yang Lv³, Huan Chang¹, Ran Gao¹ and Xiangjun Xin¹; ¹Beijing Inst. of Tech., China; ²China Academy of Tel. Tech., China; ³Marine D & R Inst. of China, China. A baud rate-tolerant OSNR monitoring method is proposed.

P2.21

Transformer–Based Physics-Informed Neural Networks in Fiber Channel Modeling, Ning Ma, Xuemeng Hu, Miao Gong, Ziyi Fu, Yafeng Cheng, Changpeng Ming, Lei Dong, Ming Luo, Chao Yang, Hanbing Li, Tianye Huang and Xiang Li; *China Univ. of Geosci., China.* This paper proposes a Transformer-PINN model integrating multi-head attention with physicsinformed neural networks (PINN).

P2.22

PCA-Meta-Learning QoT Estimation Method For Few-Shot

Optical Networks, Tiantian Li¹, Shangbo Lin², Chaozhi Wang¹, Tangze Qin² and Zhiqun Gu²; ¹Beijing Orient Inst.of Meas. and Test, China, ²BUPT, China. We propose a PCA-Meta-learning QoT estimation method to predict the quality of transmission of lightpaths effectively in few-shot scenario.

P2.23

A graded-channel InP HEMT with an asymmetrically placed gate structure achieves a peak transconductance of 1229.8 mS/mm, Tianlin Ma, Xiaofeng Duan, Kai Liu, Yongqing Huang and Xiaomin Ren; *Beijing Univ.* of *Posts and Tel., China.* We designed a gradedcomposition channel InP HEMT featuring an asymmetrical gate placement structure.

P2.24

Long Short-Term Memory Based Phase Noise Suppression Method for Coherent Optical OFDM System with 64-QAM Modulation Format, Xi Fang, Yi Yan, Sirui Zuo, Yuxiang Liu and Silu Fan; *Beijing Electron. Sci. and Tech. Inst., China.* A novel GBE-LSTM method for phase noise suppression in 64-QAM coherent optical OFDM systems shows superior robustness over GBE across all linewidths in simulations.

P2.25

All-dielectric tetramer metasurface optical sensor based on high Q-factor Fano resonance, Li Liu, Wenjing Fang and Xinye Fan; Liaocheng Univ., China. We propose a high-sensitivity all-dielectric tetramer metastructure with 100% modulation depth.

P2.26

Highly Efficient Information Reconciliation Based on Correlation Thresholding Driven by Experimental Data in Classical Key Distribution, Manlin Guo¹, Linjie Xu², Xiaogang Wang², Yanwen Zhu¹, Zirui Ding¹, Yixin Wang¹ and Jie Zhang¹; ¹BUPT, China; ²WMCRI, China. An ET-based adaptive scheme for classical key postprocessing reduces LDPC decoding iterations by 76.8% a high SNR temperature sensor based on a fiber laser. and high-error FER by 74.2%

P2.27

C-band Fluorescence Temperature Measurement System Based on Erbium-doped Single-mode Fiber, Xian Li¹, Bangning Mao¹, Yanging Qiu¹, Jiawen Hu², Jingxiang Xu², Jian Kong² and Xuegiao Zhang²; ¹China Jiliang Univ., China; ²Hangzhou Dianzi Univ., China. This work demonstrates C-band fluorescence temperature measurement system based on erbium-doped sin ale-mode fiber.

P2.28

Design and characterization of grating couplers for an ultrathin silicon waveguide at 2 µm wave band, Penghao Ding¹, Yingqi Xu¹, Guoxian Wu¹, Jiaqi Wang¹, Xu Li¹, Chuxian Tan¹¹, Yu Du, Youfu Geng¹, Xuejin Li ¹and Zhenzhou Cheng²; ¹Shenzhen Univ., China; ²Tianjin Univ., China. We present the design and characterization of grating couplers for 70 nm-thick silicon waveguides at 2-µm wave band.

P2.29

Co-Packaged Optics (CPO) Technology for Modern AI Era: A Review, Guoliang Chen, Guiqi Wang, Zhenzhen Wang and Lijun Wang; Xidian Univ. Hangzhou Inst. of Tech., China. This paper discusses advanced CPO technologies and outlines future directions for design.

P2.30

An Ultra-high SNR Temperature Sensor Based on PDMS-Embedded FBG Integrated Ring Laser, Yihua He¹, Junhui Sun², Junjie Bai¹, Keng Chen¹, Sirong Wu¹, Kaijun Cai¹ and Weihao Lin²; ¹Xiamen Inst. of Tech., China; ²Southern Univ. of Sci. and Tech., China, We proposed

P2.31

Analysis and design of a single-mode vertical cavity surface-emitting laser, Xiankun Pei, Kai Liu, Yong-Qing Huang, Xiaofeng Duan, Xiaomin Ren and Qi Wang; Beijing Univ. of Posts and Tel., China. A composite cavity is introduced on the distributed Bragg reflector (DBR) at its top, thereby achieving a single-mode VCSEL.

P2.32

Comparison of Thermal Performance of Energy- supplying Lasers based on Different Heat Sink Materials, Xueyou Zhang¹, Xianzu Liu¹, Chanpeng Xu¹, Yao Xu¹, Huan Ma¹, Yuzhuo Chen², Junchang Huang², Wei Ruan¹ and Chengcheng He¹; ¹State Grid Anhui Ultra High Voltage Co., China; ²China Electric Power Research Inst., China. The forward voltage method tests laser temperatures with different heat sinks.

P2.33

Vibration Event Classification in Φ -OTDR Systems Using MFCC Features and ResNet50-CBAM, Qizhi Liu, Jie Chen, Qiren Yan and Yi Shi; Shantou Univ., China. this paper proposes combining MFCC features with an attention-enhanced ResNet50-CBAM network.

P2.34

Deep Learning-Augmented Temperature Sensing Integrated Fiber Laser Based on Sagnac Interferometer, Yihua He, Weihao Lin, Deyu Xu, Renan Xu, Mingkun Zhang, Bogiang Lin, Li-Yang Shao and Perry Ping Shum; Xiamen Inst. of Tech., China; Southern Univ. of Sci. and Tech., China. An intelligent sensing scheme combining fiber ring laser and backpropagation neural network is proposed.

P2.35

Intensity-interrogated hot-wire anemometer with cobaltdoped fiber Bragg grating heated and demodulated with a single laser, Qiang Wang, Xinyong Dong, Xinwei Zhao, Pengbai Xu and Jun Yang; Guangdong Univ., of Tech., China. An intensity-interrogated optical fiber hot-wire anemometer is proposed.

P2.36

Design and Research of MUTC-PD Optoelectronic Mixer for Down-conversion, Wenxuan Frequency Zhang, Yongging Huang, Jihong Ye, Shuhu Tan, Xiaofeng Duan, Kai Liu and Xiaomin Ren; Beijing Univ. of Posts and Tel., China. The characteristics of the modified uni-traveling carrier photodetector (MUTC-PD) optoelectronic mixing down-conversion are investigated.

P2.37

Deep Learning-Enhanced Optical Mode Field Decomposition Using VGG-16 CNNs, Teng Wang, Haoyu Wang, Yalong Wen, Suxuan Cao and Jiancun Zuo; *Shanghai Polytechnic Univ., China.* A 20k simulated dataset was generated for six linearly polarized modes at three wavelengths.

P2.38

Short-Time Fourier Transform Optimization for High-Efficiency Rayleigh Backscattering Spectrogram Generation in Optical Frequency Domain Reflectometry, Zihang Wu, Qingwen Liu and Zuyuan He; Shanghai Jiao Tong Univ., China. We propose an optimized short-time Fourier transform to accelerate time-frequency analysis in optical frequency domain reflectometry.

P2.39

High performance coherent optical spectrum analyzer based on a low-pass filter and phase noise power analysis, Zijian Hao, Tingge Dai, Jianyi Yang, Jia Wang and Yuehai Wang; *Zhejiang Univ., China.* A novel coherent optical spectrum analyzer (COSA) scheme is proposed to overcome the decoupling between resolution and power uncertainty in spectral reconstruction.

P2.40

Pendant Polymer Droplet-Based Fabry-P é rot Interferometer for Temperature Measurement, Zhiyuan Liu, Yanan Zhang, Songqi Zhang, Zuhao Liao and Bo Han; Northeastern Univ., China. A cavity lengthtunable Fabry-Pérot interferometer was constructed by capping ultraviolet-curable adhesive on the end face of a single-mode fiber.

P2.41

High-Reliability and Long-Distance Fiber-Optic Time Transfer System, Qian Jing¹, Wenge Guo¹, Xinxing Guo², Lina Sun², Tao Liu², Ruifang Dong² and Shougang Zhang²; ¹Xi'an Shiyou Univ., China; ²National Time Service Center, CAS, China. A reliability model for fiber-optic time transfer system is established.

P2.42

Research on Strain sensor based on Panda polarization maintaining fiber, Rui Huang, Yuluan Wang, Simei Sun, Shuang Cao, Mingyue Huang and Chao Jiang; *Hubei Normal Univ., China.* Strain sensing experiments have been performed on Mach-Zehnder interferometer (MZI) sensors.

P2.43

A Pilot-assisted feature-enhanced channel estimation method, Jiayuan Li¹, Qi Zhang¹, Xiangjun Xin², Ran Gao², Fu Wang¹, Yi Zhao³, Ying Song³, Feng Tian¹, Yongjun Wang¹, Qinghua Tian¹, Sitong Zhou¹ and Leijing Yang¹; ¹BUPT, China; ²Beijing Univ. of Tech., China; ³Beijing Inst. of Ctrl. and Electron. Tech., China. A pilot-assisted feature enhancement method is proposed.

P2.44

Photoconductive Equivalent-Time Sampling for Monitoring 30 Gbps QPSK Terahertz Communication Signal, Hongqi Zhang¹, Wenbin Liu¹, Yifan Hong¹, Jinjiang Wang¹, Guangkuo Lin¹, Jing Chen¹, Qi Wu¹, Wei Wang¹, Dingyuan Qi¹, Zhihui Li¹, Chuan Ge¹ and Xianbin Yu²; ¹China Mobile, China; ²Zhejiang Univ. China. We experimentally demonstrate a high-speed terahertz (THz) equivalent-time sampling system operating in the 132 GHz band.

P2.45

Clamping Force Measurement of Medical Forceps Based on Fiber Bragg Grating, Yicai Li, Na Chen, Yana Shang, Shupeng Liu, Yong Liu and Fufei Pang; *Shanghai Univ., China.* In this study, the relationship between clamping force and structural strain of surgical forceps is modeled.

P2.46

Modulation-Transparent Carrier Recovery Scheme with Reinvented Error Function, Yulin Wu, Feng Tian, Qi Zhang, Qinghua Tian, Ran Gao, Fu Wang and Sitong Zhou; *BUPT, China; Beijing Inst.of Tech., China.* A QPSK-assisted carrier phase recovery algorithm is proposed.

P2.47

Accurate Characterization of Fiber Lumped Losses for Digital Twin Modeling in C+L-band Systems, Weijie Hong¹, Lingbo Wu¹, Jianfeng Zheng¹, Jialin We¹i, Fangzhou Yan¹, Dahai Han² and Min Zhang²; ¹Shenzhen Smartcity Comm., China; ²BUPT, China. We propose an accurate and efficient method for estimating up to five lumped losses in multi-band optical transmission systems.

P2.48

4-Dimensional Coded Modulation Based on Concatenated Multi-level Coding in Short-reach Coherent Optical Interconnection, Yuyao Wen, Jun Ming, Ze Dong, Shaonan Liu and Junyuan Song; *Beijing Inst.of Tech., China.* We propose a 4D-DP-16QAM scheme employing concatenated multi-level coding to mitigate PDL in short-reach coherent transmission system.

P2.49

Data Augmentation Strategy for ϕ -OTDR Based on Deep Learning, Yi Shi, Zihao Sun, Qizhi Liu, Jie Chen and Chuliang Wei; Shantou Univ., China. This study evaluates VAE versus GAN for Φ -OTDR data augmentation using Mel-spectrograms.

P2.50

ResNet-Based Nonlinear Equalization for High-Speed PDM-WDM CO-OFDM Systems, Xi Fang, Yunzhang Wang, Lingyu Liu and Silu Fan; Beijing Electron. Sci. and Tech. Inst., China. A ResNet-based nonlinear equalization method with sliding window is proposed for PDM-WDM CO-OFDM systems.

P2.51

Pump Power Optimization of Ultra-wideband C+L-band Raman Amplifier Based on Neural Network Gain Prediction Model and PSO Algorithm, Hengjie Sun¹, Xue Wei¹, Hengbo Qi¹, Wenhua Ren¹ and Yu Tang²; ¹Beijing Jiaotong Univ., China; ²China Unicom Research Inst., China. We propose a neural network-based gain prediction model(R² =0.997) and particle swarm optimization for a 12THz C+L-band Raman amplifier.

P2.52

Modulation format identification based on phase noise insensitive high-order cumulants features, Zihan Zhang, Qi Zhang, Xiangjun Xin, Ran Gao, Siyuan Chen, Jing Xu, Zhiqi Huang, Xinyu Yuan, Fu Wang, Feng Tian, Yongjun Wang and Qinghua Tian; BUPT, China. A modulation format identification (MFI) method using the phase noise insensitive high-order cumulant (PNI-HOC) algorithm is proposed.

P2.53

39.54 Gbps Underwater Visible Light Communication Utilizing a Distributed Equalizer and Dual-polarization Receiver, Zhiwu Chen, Zhilan Lu, Xiangdong Zhang, Zhuoran Hu, Zhe Feng, Zengyi Xu and Nan Chi; Fudan Univ., China. We propose a distributed transceiver scheme based on the LMS method and Volterra filter.

P2.54

A hollow-core negative curvature fiber filled with gold wires and ethanol for the temperature sensing, Yiru Li¹, Yuwei Qu², Jingao Zhang¹, Zefeng Li¹, Lan Rao¹, Kuiru Wang¹ and Jinhui Yuan¹; BUPT, China; Hengshui Univ., China. This paper proposes a SPR-based hollow-core negative curvature fiber temperature sensor.

P2.55

Design and Implementation of Communication Data Analysis Software for Measuring Equipment, Zhao Liu, Jiangtao Wei, Jianfeng Feng, Meilei Jiang and Xiaodeng Zhou; China Satellite Maritime Tracking and Control Dept., China. This article designs and implements a software for receiving and parsing communication data of aerospace measurement equipment.

P2.56

Adaptive method for fabricating electrically pumped 650 nm microring lasers with low differential resistance, Chuanjiang Liu¹, Jun Wang¹, Hao Liu¹, Kai Liu¹, Yanan Chen¹, Shuaicheng Liu¹, Qing Ge¹, Hao Zhai¹, Yiming Bai², Yongging Huang¹ and Xiaomin Ren¹; ¹BUPT, ²North China Electric Power Univ., China. We design an adaptive method to fabricate microring lasers with narrow ring width.

P2.57

Study of Transmitter Power Adaptability for MRR FSO communication, Xiagian Hu, Jingyuan Wang, Jianhua Li, Zhiyong Xu, Jiyong Zhao, Yang Su, Yiming Wang and Ailin Qi; Army Engineering Univ Univ., China. The study of transmitter power adaptability based on average received power optimize the performance of MRR FSO system.

P2.58

A Correlation-Based Arbitrary Bias Control Method and Application in Multi-Format Modulation for Inter-Satellite Optical Communication System, Hao Li, Yuanzhe Qu, Zixuan Ming and Yingxiong Song; Shanghai Univ., China. A correlation-based MZM bias control method achieves high-precision harmonic detection with low complexity.

P2.59

Mid-wave InAs/GaSb Type-II Superlattice Infrared Detector

for Gas Sensing, Yuzhe Han¹, Lili Han¹, Zhaowei Wang¹, Shumeng Wang¹, Kai Wang² and Yangfei Hou³; ¹Qilu Univ. of Tech., China; ²UIBE, China; ³Jinan Landong Laser Tech. Co. Ltd., China. Mid-wave infrared detector based on InAs/GaSb Type-II superlattice for gas sensing is demonstrated.

P2.60

High-Sensitivity and Temperature-Compensated Fiber-Optic Humidity Sensor Based on Agarose-Coated Fabry-Perot Microsphere, Peiran He, Zhewen Ding, Junlan Zhong, Huaping Gong, Ben Xu, Chunlian Zhan and Chunliu Zhao; China Jiliang Univ., China. A Fabry-Perot fiber sensor using agarose-coated microspheres achieves 3.109 nm/%RH (30-55% RH) and 2.029 nm/%RH (55-80% RH) sensitivity.

P2.61

Study on the performance calibration method of FBG accelerometer based on vibration table, Liang Xin, Zijie Sun, Wen Wang, Zhipeng Zhang, Xuan Xie, Youyi Zhang, Xu Li, Tigang Ning and Bingbing Zhang; *Beijing Satellite Manufacturing Co. , Ltd., China.* This study develops a vibration table calibration method for FBG accelerometers.

P2.62

Design of subwavelength grating waveguide devices for

optical gas sensing, Xu Li¹, Zhijian Mao¹, Guoxian Wu¹, Jiaqi Wang¹, Penghao Ding¹, Chuxian Tan¹, Yu Du¹, Youfu Geng¹, Xuejin Li¹ and Zhenzhou Cheng²; ¹Shenzhen Univ., China; ²Tianjin Univ., China. We proposed CO2 refractive index gas sensors that utilize silicon subwavelength grating waveguides as the sensing arm of Mach-Zehnder interferometers.

P2.63

Unbalanced Orthogonal Polarization Interrogated Optical Vector Analysis, Haoqi Du, Zhangjun Yu, Jun Yang and Yuwen Qin; *Guangdong Univ.of Tech., China.* We introduce an unbalanced orthogonal polarizationinterrogated OVA scheme that operates without active polarization control.

P2.64

Mode Decomposition and Characterization in Helical Side Core Fibers, Yue Xin, Jin Wen, Zhifeng Wang, Mengshi Zhu, Liang Zhang, Heming Wei and Fufei Pang; *Shanghai Univ., China.* We demonstrate an S² imaging method based on principal component analysis (PCA) that can effectively decompose and charac terize supermodes in helical side core fibers.

VIP Room 3, Track 1

10:30-12:00 W2A. Novel Fibers & Devices IV Presider: Weiging Gao, Hefei University of Technology, China

W2A.1 • 10:30 Invited



Wednesday, 30 July

Al-assisted non-invasive smart health monitoring system based on special optical fiber interferometer, Changyuan YU; The HK Polytechnic Univ., HK. We

review our recent work on Al-assisted non-invasive smart health monitoring system based on special optical fiber interferometer.

W2A.2 • 10:50 Invited

Femto-second laser direct inscribed fiber devices. Lin Ma: Shanghai Jiao Tong Univ., China.

VIP Room 4, Track 6

10:30-12:00 W2B. Measurement & Imaging IV Presider: Chunliu Zhao, China Jiliang University, China

W2B.1 • 10:30 Invited

Strain mapping by using fiberoptic sensing network for load Guofeng Yan: monitoring, Zhejiang Lab, China. In this presentation, a novel sensing

network was introduced for tri-axial strain mapping. 2D load reconstruction algorithm was developed and demonstrated.

W2B.2 • 10:50 Invited

Optical Fiber Sensing Technology for Ocean Parameters, Riging Lv; Northeastern Univ., China.

Room 205, Track 4

10:30-12:00 W2C. Optoelectronic Integration IV Presider: Junjia Wang, Southeast University, China

W2C.1 • 10:30 Invited



Research on Photoelectric Devices Enhanced by Thin Film/ Grating Microstructures, Heyuan Guan; Jinan Univ., China.

Room 206, Track 9

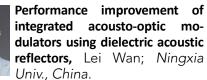
10:30-12:00 W2D. Quantum Photonics III Presider: Meihong Wang, Shanxi University, China

W2D.1 •10:30 Invited

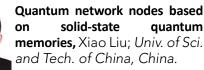


Quantum Photon Source in Lithium Niobate Nanowaveguide, He Lu: Shandong Univ., China.

W2C.2 • 10:50 Invited



W2D.2 • 10:50 Invited



W2A.3 • 11:10 ★

Frequency-evolution dynamics of the fast and wide swept semiconductor laser, Minzhi Xu, Yujia Li, Chaoze Zhang, Juntao He, Zechun Geng, Jindong Wang, Da Wei, Leilei Shi, Ligang Huang and Tao Zhu; Chongging Univ., China.

W2B.3 • 11:10

Optical fiber sensing for bridge cable states based on online fabricated FBG arrays, Chunliu Zhao; China Jiliang Univ., China.



W2C.3 • 11:10 Invited

Heterogeneous Integrated **Optical** Modulators, Juniia Wang; Southeast Univ., China.

W2D.3 • 11:10 Invited



Integrated and high-speed quantum key distribution, Lai Zhou; Beijing Academy of Quantum Info. Sci., China. We demonstrate a 2.5 GHz chip-

to-chip fully integrated quantum key distribution (QKD) system based on a TFLN platform.

Room 210, Special 1

10:30-12:00 W2E. Organic Optoelectronics IV Presider: Rongjun Xie, Xiamen University, China

W2E.1 • 10:30 Invited



Design, fabrication and applications of luminescent materials resistant to high-power-density optical excitation, Rongjun Xie; Xiamen Univ., China.

W2E.2 • 10:50 Invited



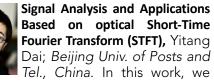
Controlling light in organic/ hybrid materials and devices. Shaocong Hou; Wuhan Univ., China. I will present our recent work on designing organic/

hybrid materials and devices based on light-matter interaction.

Room 211, Track 5 10:30-12:00

W2F. Optical Signal Processing II Presider: Wenting Wang, Beijing Institute of Technology, China

W2F.1 • 10:30 Invited



propose a broadband optical STFT system, achieving up to 256 frequency bins and 80 MHz frequency resolution.

W2F.2 • 10:50 Invited

Ultra-high-Q microring resonators and their applications in microwave photonic filters and optoelectronic oscillators, Yuan Yu; Huazhong Univ. of Sci. and Tech., China.

Room 212, Track 3

10:30-12:00 W2G. Optical Netwrok IV Presider: Lihua Ruan, Penachena Lab, China

W2G.1 • 10:30

Crosstalk-Aware Evolutionary Optimization of Task Mapping for Optical Network-on-Chip, Chen Zhao, Qiuyan Yao and Hui Yang; Beijing Univ. of Posts and Tel., China.

W2G.2 • 10:45

Resource Decoupling and Optimization for Elastic Optical Networks: A Dynamic W2H.2 • 10:50 Coordination Mechanism. Shenave Gona, Hui Yang, Qiuyan Yao, Wenxin Liu and Jie Zhang; Beijing Univ. of Posts and Tel., China.

W2G.3 • 11:00

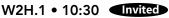
Cognitive Wavefront Prediction via Zernike Phase Forecasting Neural Network, Xinjie Zhang, Haoyu Zhang, Chaoxu Chen, Yuan Wei, Jiaxin Huang, Ziwei Li, Chao Shen, Junwen Zhang, Nan Chi and Jianyang Shi; Fudan Univ., China.

W2G.4 • 11:15

SDN-based Dynamic Cooperative Transmission Strategy for Satellite Networks with Hybrid Links, Miao Hao, Hui Yang, Qiuyan Yao, Zhao Li, Yun Teng and Jie Zhang; Beijing Univ. of Posts and Tel., China.

Room 215, Track 2

10:30-12:00 W2H. Optical Transmission IV Presider: Niangiang Li, Soochow University, China





Microresonator-Based Massive Bandwidth-Enhanced Chaotic Generation and Its Applications, Ning Jiang; Univ. of Electronic Sci. and Tech., China.

Harnessing Nonlinear Dynamics in Laser Systems: Advances in Optical Chaos. Computing. and **Communication,** Niangiang Li;

Soochow Univ., China.



Toward Secure and High-Speed Optical Networks Leveraging Digital Chaos, Zhouyi Hu; Beijing Jiaotong Univ., China. In this invited talk, we discuss

the security vulnerabilities of some types of optical networks, and review our recent progress in physical-layer security enhancements.

W2E.3 • 11:10 Invited



Selenium-Containing Purelv **Organic Room Temperature Phos**phorescence Emitters. Hui Tona: Changchun Inst. of Applied Chemistry, CAS, China, Several

metal-free small molecules and polymers incorporating seleniumcontaining aromatic units have been developed, demonstrating efficient RTP in film states.



W2F.3 • 11:10 Invited

Free-space terabit/s coherent optical links via platicon frequency microcomb, Wenting Wang; Beijing Inst. of Tech., China.





VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

Room 206, Track 9

W2A.4 • 11:25 🕇

Generation of mixed states of vortex beams in the few-mode fiber, Letian Gu, Huivi Guo, Zhi Wang and Yan-Ge Liu; Nankai Univ., China. This work proposes an allfiber scheme for generating vortex beam superposition states.

W2B.4 • 11:30

Highly sensitive pulse sensor based on fiber optic micro-ring for real-time monitoring of human exercise, Ying Wang, Qiang Ling, Zhangwei Yu and Daru Chen; Zhejiang Normal Univ., China. A pulse diagnostic device based on all-fiber optic structure is proposed for real-time monitoring of human exercise.

W2C.4 • 11:30 Invited



Silicon photonic RF self-interference cancellation chip for inband full-duplex communications, Xiuyou Han, Meng Chao, Yicheng Du, Xuan Li, Zerong Duan, Mingshan Zhao; Dalian Univ. of

W2D.4 • 11:30 Invited



Preparation and manipulation of optical hybrid entangled states, Meihong Wang; Shanxi Univ., China.

W2A.5 • 11:40 🕇

Wednesday, 30 July

Optimization of Six-Mode Photonic Lanterns for Mode Conversion in O-Band and toward 2 µm Wavelength Band, Wanyu Wu¹, Chaoyue Wang¹, Quandong Huang¹, Ou Xu¹, Sławomir Ertman², Tomasz R. Woliński², Perry Ping Shum³ and Xinyong Dong¹; ¹Guangdong Univ. of Tech., China. ²Warsaw Univ. of Tech., Poland; ³Southern Univ. of Sci. and Tech., sensor with a diameter of 125 µm China. Six-mode photonic lantern mode converters are designed and optimized for the O-band and toward the 2 µm band.

W2B.5 • 11:45

Multi-Point Temperature Monitoring in Food Using Embedded Fiber Bragg Grating Sensors: A Case Study with Mashed Potatoes, Lucas Cao¹, Rui Wu, Sabrina Abedin², Lidan Cao² and Xingwei Wang²; ¹Weston High School., USA; ²Univ. of Massachusetts Lowell, USA. This paper presents a Fiber Bragg Grating (FBG) designed to test heat distribution in food within an oven using mashed potatoes as the test subject.

W2C.5 • 11:50

Tech., China.

All-Optical Max-Pooling Operation with Integrated FP-SA Spiking Neuron, Yingjun Fang¹, Ning Jiang^{1,2}, Bingjie Xu³, Bingkun Liu¹, Zichun Zhao¹, Beikang Ren¹ and Kun Qiu¹; ¹Univ. of Electron. Sci. and Tech. of China; ²TianfuJiangxi Lab, China; ³National Key Lab of Secure Comm., China. We demonstrate an allmax-pooling optical operation architecture based on a Fabry-Perot laser with a saturable absorber.

W2D.5 • 11:50

An Intensity-Stable Pulse Source Based on **Optical Injection for High-Speed Quantum** Key Distribution, Wenxu Zhao¹, Tao Wang¹, Xun Zhou², Yixin Wang¹ and Jie Zhang¹; ¹Beijing Univ. of Posts and Tel, China: ²Wuhan Maritime Comm. Research Inst., China. Using optical injection, the laser intensity fluctuation was reduced from 0.137 to 0.009, and the optimal injection intensity of 0.6%-8% was obtained.

12:00-13:30 Lunch Break

Room 210, Special 1

Room 211, Track 5

Room 212, Track 3

Room 215, Track 2

W2E.4 • 11:30 Invited



Carbocation-Based resonance Narrowband Emitters, Shiyang Shao; Hainan Univ., This presentation China; focuses on Carbocation-doped

polycyclic emitters, which are a new family used for multi-resonance narrowband OLED devices toward ultrahigh-definition displays.

W2F.4 • 11:30

Multi- Phase noise suppression system based on MZI and electrical oscillator, Yitang Dai¹, Tong Yang¹, Yiwen Lu¹, Xinpeng Wang¹, Zhen Feng¹, Feifei Yin¹ and Ming Li²; ¹Beijing Univ. of Posts and Tel., China; ²Inst.of Semiconductors, CAS, China. We propose a phase noise suppression system using a MZI and oscillator to extract and suppress noise via feedforward

W2G.5 • 11:30

The Control of Time-Sensitive Network Traffic in Power Line Communication Channel System, Bowen Shi, Huibin Zhang and Jie Zhang; Beijing Univ. of Posts and Tel., China. We proposed a Posts and Tel., China. Our FPGA system combines TSN with power line communication, simplifying wiring and ensuring timely traffic, proven in noise ratio estimation. synchronized device tests.

W2H.4 • 11:30

Joint Modulation Format Identification and OSNR Monitoring using MT-LIN model, Meng Liang and Yugi Wu; Xi'an Univ. of multi-task model joint monitoring model modulation for format identification and optical signal-to-

W2F.5 • 11:45

Wideband Optical STFT with 256 Frequency

Bins, Xue Lan, Haoyan Xu, Shilong Chen, Kun Xu and Yitang Dai; Beijing Univ. of Posts and Tel., China. In this work, an optical short-time Fourier Transform based on dual optical frequency combs and channelization techniques is proposed

W2G.6 • 11:45

A Time-Frequency Resource Allocation Algorithm Using TFDM Architecture for Holographic Multimodal Data, Fansong Kong and Xin Wang; Beijing Info. Sci. and Tech. Univ., China. We propose a time-frequency resource allocation algorithm using the TFDM architecture for holographic multimodal data.

W2H.5 • 11:45

Real-time Unrepeatered Transmission of Single-Carrier 1.2Tb/s over 364.33km with Commercial transceiver and Optimized ROPA System, Zongtao He, Shujuan Sun, Meichen Xu and Jianjun Wu; Accelink Technologies Co. Ltd., China. We demonstrate a record unrepeatered transmission of single-carrier 1.2 Tb/s over 364.33 km utilizes MPCS DP-64QAM with commercial transceiver.

12:00-13:30 Lunch Break

VIP Room 3, Track 1

13:30-15:30 W3A. Novel Fibers & Devices V Presider: Bo Dong, Shenzhen Technology University, China

W3A.1 • 13:30 Invited



Broadband Fiber Optic Seismometer, Wentao Zhang; Inst. of Semiconductors, CAS, China.

VIP Room 4, Track 6

13:30-15:30

W3B. Measurement & Imaging V Presider: Wenjun Ni, South-Central Minzu University, China

W3B.1 • 13:30 Invited

Precision Photon Integration based tunable lasers and their applications in sensors, Xiangfei Chen; Nanjing Univ., China. Tunable lasers based on Precision Photon Integratio (@PIC) are

investigated and their applications in sensors are studied and discussed.

Room 205, Track 4

13:30-15:30 W3C. Optoelectronic & Integration V Presider: Ang Li, Nanjing Univ. of Aero. and Astro., China

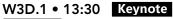
W3C.1 • 13:30 Invited



Chiplet based optoelectronic computing, Ang Li; Nanjing Univ. of Aero. and Astro., China.

Room 206, Special 3

13:30-15:30 W3D. 2D-materials Photonics I Presider: Yuan Liu & Fang Wang





Aerospace Intelligent Infrared Detector, Weida Hu; Shanghai Inst. of Technical Physics, CAS, China.

Wednesday, 30 July

W3A.2 • 13:50 Invited

2D-material-functionalzied fiber for sensing applications, Shengli Pu; Univ. of Shanghai for Sci. and Tech., China.

W3B.2 • 13:50 Invited

Deep learning enabled multimode fiber imaging and spectral imaging, Zhenming Yu; Beijing Univ. of Posts and Tel., China.



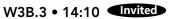
W3D.2 • 13:50 Invited

Controls in orientation, thickness, and stackings in 2D Semiconductor Epitaxy, Taotao Li; Nanjing Univ., China.

W3A.3 • 14:10



Forward stimulated Brillouin scattering in few mode fibers for temperature sensing, Liang Zhang; Shanghai Univ., China.



Ultrathin endoscope based on W3C.3 • 14:10 Invited optical fibers, Lipei Song; Nankai Univ., China. In this talk, we present our work on imaging with a few mode fiber and a thin fiber bundle based on computational imaging techniques to realize high-resolution imaging with small tip sizes.



Broadband and flat-top integrated electro-optic frequency combs on thin-film lithium **niobate platform.** Lei Shi:

Huazhong Univ. of Sci. and Tech., China.

W3D.3 • 14:10 Invited



Exciton emission in 2D transition metal dichalcogenides and its manipulation via heterogeneous integration, Xiao Wang; Hunan Univ., China.

Room 210, Special 1

13:30-15:30 W3E. Organic Optoelectronics V Presider: Fushan Li, Fuzhou University, China

W3E.1 • 13:30 Invited



Ultra-High Resolution Quantum Dot Light-Emitting Display, Fushan Li; Fuzhou Univ., China.

Room 211, Track 7

13:30-15:30 W3F. Ultrafast & Nonlinear III Presider: **Yan-Ge Liu**. Nankai University, China

W3F.1 • 13:30 Invited Ultrafast U-band fiber laser generation and the pulse dynamics, Chujun Zhao; Hunan Univ., China.

Room 212, Special 2

13:30-15:30 W3G. Machine Learning I Presider: Jian Zhao, Tianiin University. China

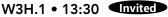
W3G.1 • 13:30 Invited



Intelligent control of ultrafast lasers, Xueming Liu; Southeast Univ., China.

Room 215, Track 8

13:30-15:30 W3H. Wireless Communication I Presider: Jing Xu, Zhejiang University, China





An Underwater Monitoring System Based on Underwater Wireless Optical Communication Machine Learning-Enhanced Signal Processing, Xu

Wang; Maynooth Univ., Ireland.

W3E.2 • 13:50 Invited



Direct Optical Patterning of Quantum Dot Light-Emitting **Diodes,** Ting Zhang; Ningbo Inst. of Materials Tech. & Eng., CAS, China.



W3F.2 • 13:50 Invited

Multiplexed Soliton Optical Combs in Kerr Frequency **Resonators.** Tianve Huang: China Univ.of Geosci., China.

W3G.2 • 13:50 Invited



Demonstration of a portable diffractive photon neural network system, Wenhua Gu; Nanjing Univ. of Sci. and Tech., China. This talk demonstrates a portable diffractive DPNN system and its fundamental functions, as a solid step conducted by the Optical Communitoward practical applications.

W3H.2 • 13:50 Invited



cations

University.

A Way to Practical Implementation of Underwater Wireless **Optical Communication,** Jing Xu; Zhejiang Univ., China. This talk will mainly focus on the

prototype development and sea trial

Laboratory of

Zheiiana

W3E.3 • 14:10 Invited



Environmental Influences on Quantum Dot Emission Properties and Underlying Mechanisms, Haiyan Zhejiang Univ., China. This

study explores how water and oxygen atmospheres impact quantum dot emission properties, and reveals key mechanisms.



W3F.3 • 14:10 Invited

High Power Ultrafast Midinfrared Fiber Lasers and the Applications. Chunvu Guo: Shenzhen Univ., China. Multitypes of fluoride fiber modelocked lasers and MOPA systems at 3 µm have been demonstrated in our aroup.

W3G.3 • 14:10 Invited



Semantics-Enhanced Optical **Communications: Prospect and** Case Studies. Danshi Wana: Beijing Univ. of Posts and Tel., China.

W3H.3 • 14:10 Invited



Photonic reconfigurable technology for space TT&C: progress and challenges, Haifeng Yang; Southwest China Inst. of Electron. Tech., China.

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VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

Room 206, Special 3

W3A.4 • 14:30 Invited

W3A.5 • 14:50 Invited

Bismuth/Erbium



All fiber acousto-optic frequency shifter and its applications, Feng Gao; Nankai Univ., China. The progresses of all fiber acoustooptic frequency shifter are

Optical Fibre and Its Sensing

Yanhua

presented with its applications in heterodyne detection and hyper sampling imaging as examples.

W3B.4 • 14:30 Invited

W3B.5 • 14:50 Invited

High birefringent and low thermal sensitive photonicbandgap hollow-core fibers. Fei Yu; Shanghai Inst. of Optics and Fine Mechanics, CAS, China.



China.

waveguide-Ultra-high-speed integrated UTC photodetector beyond 200 GHz, Baile Chen; ShanghaiTech Univ., China.

Efficient and versatile on-chip

nonlinear applications based on

AlGaAsOI photonic integrated

Shanghai Jiao Tong Univ.,

Weigiang

W3D.4 • 14:30 Invited

Photodetectors for Weak Signals,



Fang Wang; Shanghai Inst. of Technical Physics, CAS, China. In this report, we present our approach to manipulating

opto-electronic co-localized fields to facilitate dark current suppression and enhance photocurrent in infrared detectors.

W3D.5 • 14:50 Invited



Xie:

High Performance Optoelectronic Devices Based on Compound Semiconductor Heterostructures, Jiang Wu; Univ. of Electron. Sci. and Tech.

of China, China.

Wednesday, 30 July

W3A.6 • 15:10 Invited

Flexible polymer fiber-optic sensors for robotic hand threedimensional tactile perception. Bo Dong, Yulong Wang, Zhuoiun Wang, Senpena

Zhang and Wobin Huang; Shenzhen Tech. Univ., China. We introduce our recent research achievements in flexible fiber-optic three-dimensional robotic hand tactile sensors.



Co-doped

Luo;

W3B.6 • 15:10 Invited

Speciality fiber photothermal spectrum for trace gas sensing, Wenjun Ni; South-Central Minzu Univ., China.

3D Printed On-fiber Microlens and

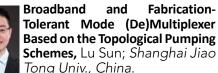
Its Applications, Dejun Liu;

Shenzhen Univ., China.

W3C.6 • 15:10 Invited

W3C.5 • 14:50 Invited

circuits,



W3D.6 • 15:10 Invited



Comprehensive Radiation Effect Tolerance in Carbon Nanotube Integrated Circuits, Maguang Zhu; Nanjing Univ., China.

15:30-16:00 Poster Session 3 & Tea Break



modulated

Room 210, Special 1

W3E.4 • 14:30 Invited

Surface reconstruction quantum dots and its activedisplay matrix Xingliang Dai; Zhejiang Univ., China.



photonic structures, Yong Zhang; Nanjing Univ., China. We report the fabrication of 3D nonlinear photonic structures through laser writing in lithium niobate crystals and their applications in manipulating the second-harmonic fields.

metasurfaces for advanced fiber

lasers, Lili Gui; Beijing Univ. of

Nonlinear optics in 3D nonlinear

Room 211, Track 7

Invited W3E.5 • 14:50



Impacts of Sidewall on the Luminous Characteristics of Weiiie Micro-LEDs. Guo; Xiamen Univ., Čhina. The sidewall treatment can

effectively alleviate the residual damage caused by dry etching and suppress the nonradiative recombination.

W3E.6 • 15:10 Invited



dot luminescence Quantum microspheres for Micro-LED Tongtong Xuan; displays, Univ., China. We Xiamen propose the construction of

areen and red QD luminescence microspheres with simultaneously high conversion efficiency of blue light and strong photoluminescence stability.



W3F.6 • 15:10 Invited

W3F.5 • 14:50 Invited

Spatiotemporally

Posts and Tel., China.

Ultrafast thin disk laser, Xing Liu; Shenzhen Tech. Univ., China.

W3G.6 • 15:10 Invited



All-Optical Nonlinear Activation Function Based on Graphene, Yifan Chen, Jian Zhao, Haowei Sha and Mingyu Chang; Tianjing Univ., China.

W3H.6 • 15:10

Advanced Modulation Formats for Longwave Infrared Free-space Optical Communication, Mengyao Han¹, Muguang Wang², Richard Schatz³, Yan-Ting Sun³, Lu Zhang⁴, Xianbin Yu⁴, Oskars Ozolins⁵, Ran Pang¹, Xiongyan Tang¹ and Xiaodan Pang; ¹China Unicom, China; ²Beijing Jiao Tong Univ., China; ³KTH Royal Inst. of Tech., Sweden; ⁴Zhejiang Univ., China; ⁵RISE Research Inst. of Sweden, Sweden.

15:30-16:00 Poster Session 3 & Tea Break

Room 212, Special 2

W3G.4 • 14:30 Invited

Array vortex light and its marine applications, Bo Guo; Harbin Eng. Univ., China.

Room 215, Track 8



Multi-hop routing for Underwater Wireless Communication, Yang Qiu; Southwest Minzu Univ., China.

W3G.5 • 14:50 Invited



Lab for Micro/Nanoscale Sensors and Systems, Daquan Yang; Beijing Univ. of Posts and Tel., China.

W3H.5 • 14:50 Invited



LED Layout Optimization Based on Improved PSO in Visible Light **Communication,** Jingyu Li, Jie Ma, <u>Jianfei Liu</u>, Jia Lu, Xiangye Zeng and Mingming Luo; Hebei Univ. of Tech., China.

P3.1

Design and Development of High-precision Fiber Optic Ocean Turbulence Two-dimensional Vector Sensor, Siyao Yang, Shun Wang, Kunhua Wen and Jun Yang; *Guangdong Univ. of Tech., China.* A fiber optic two dimensional vector shear flow sensor is developed.

P3.2

Research on Multi-Path Topology Link Routing Algorithm for RF Front-End Based on Machine Learning, Jing Ran, Chen Wang and Mengxue Liu; *Beijing Univ. of Posts and Tel., China*. We propose a unified system for RF front-end component configuration and signal routing using BPSO and MCTS.

P3.3

Performance-Enhanced Reservoir Computing System Based on Microring Resonators ultilizing Multi-Wavelength Parallel Processing, Buqian Zhai, Ning Jiang, Yingjun Fang, Bingkun Liu, Beikang Ren, Juanjuan Ru and Kun Qiu; Univ. of Electron. Sci. and Tech. of China, China. We numerically demonstrate a reservoir computing scheme based on silicon microring utilizing multiwavelength parallel processing.

P3.4

An OSNR monitoring-assisted EMD-based MFI method in optical fiber communication, Yi Zhao¹, Qi Zhang¹, Xiangjun Xin², Ran Gao², Qihan Zhao¹, Xinyu Yuan¹, Yun Wang¹, Zhiqi Huang¹, Fu Wang¹, Feng Tian¹, Yongjun Wang¹ and Qinghua Tian¹; ¹BUPT, China; ²BIT, China. An EMD-based modulation format identification method assisted by OSNR monitoring in optical fiber communication systems is proposed.

P3.5

Research on the Time-Frequency Hybrid MiMo CMA for Robust MDM Transmission, Weihong Yang, Feng Tian, Yutian Li, Chuanji Yan, Qi Zhang and Fu Wang; *Beijing Univ. of Posts and Tel., China.* We propose a timefrequency Hybrid Mimo CMA.

P3.6

Laplace Neural Operator for Nonlinear Equalization of PDM-16QAM Systems, Shaonan Hong, Yongjun Wang, Haifeng Yang, Lu Han, Hengda Gao and Qi Zhang; Beijing Univ. of Posts and Tel., China. The Laplace neural operator (LNO) is introduced to realize the nonlinear equalization of PDM optical fiber system.

P3.7

Athermal Wavelength Locking of V-cavity Laser using Arrayed Waveguide Grating, Jiajun Hu, Yangqi Wang and Jian-Jun He; Zhejiang Univ., China; Lightip Technologies (Hangzhou), Co., Ltd., China. Athermal wavelength locking of a V-cavity laser is demonstrated using dynamic drive current compensation with arrayed waveguide grating (AWG)-based feedback.

P3.8

Multi-level Key Supply Capability Aware Routing Algorithm Under Noise Attack in Multi-Domain Quantum Key Distribution Network (QKDN), Congying Zhang, Jingjing Liu, Xiaosong Yu and Yongli Zhao; *Beijing Univ. of Posts and Tel., China.* This paper proposed a multilevel key supply capability aware routing algorithm under noise attack in multi-domain quantum key distribution network.

P3.9

Improved performance of an atmospheric laser communication link with a reservoir computing based equalizer, Jiaqi Luo, Zhihao Zhao and Juanjuan Yan; *Beihang Univ., China.* A reservoir computing (RC)based equalizer is applied in an OOK IM/DD atmospheric laser communication link.

P3.10

Algorithmic Analysis on Compressive Sensing MIMO Radar Imaging Based on Optical Chaos, Xi Wang, Ning Jiang, Huanhuan Xiong, Chengmo Wang, Chuanjie Tang and Kun Qiu; Univ. of Electron. Sci. and Tech. of China, China. This paper proposes a compressive-sensing multiple-input multiple-output (CS-MIMO) radar system.

P3.11

In-Line Interferometer based on Silica Capillary and Tri-core Fiber for Curvature and Temperature Measurement, Fei Pan, Jie Cao, Mengjiao Ding, Mengying Hu, Ya'Nan Zhang and Yunhe Zhao; *Shanghai Maritime Univ.*, *China*. A hybrid in-line interferometer based on silica capillary and tri-core fiber is demonstrated for curvature and temperature measurement.

P3.12

E-Field-Controlled MUTC Photodetector with High-Speed and High-Saturation Performance, Xiaole Gong, Xiyue Zhang, Tonghui Li, Xiaofeng Duan, Kai Liu and Yongqing Huang; *Beijing Univ. of Posts and Tel., China.* An e-field-controlled modified uni-traveling carrier photodetector is proposed.

P3.13

High-speed Ge/GaAs MUTC-PD Design with a Comprehensive Method, Xiyue Zhang, Xiaole Gong, Kai Liu, Yongging Huang and Xiaofeng Duan; Beijing Univ. of Posts and Tel., China. A high-speed Ge/GaAs MUTC-PD is proposed with the combination of analytical and numerical method.

P3.14

Experimental Investigations of Differential Modulation and Detection in FSO, Hao Zhou, Zhenning Yi, Likui Lu, Jingyuan Wang, Jianhua Li, Zhiyong Xu and Jiyong Zhao; Army Engineering Univ., China. This study demonstrates the feasibility of the method based on differential modulation and detection (DMD) through experiments.

P3.15

Double Q-learning for secure routing in LEO satellite constellations, Junyi Zhang¹, Qi Zhang¹, Xiangjun Xin², Ran Gao², Fu Wang¹, Yi Zhao³, Ying Song³, Feng Tian¹, Yongjun Wang¹, Qinghua Tia¹n, Sitong Zhou¹ and Leijing Yang¹: ¹BUPT, China: ²BIT, China: ³Beijing Inst. of Ctrl. & Electron. Tech., China. A Double Q-learningbased distributed routing algorithm is proposed.

P3.16

A high-accuracy OSNR monitoring scheme in high-speed coherent optical fiber systems, Yungiu Xu¹, Qi Zhang¹, Yi Zhao¹, Qihan Zhao¹, Xinyu Yuan¹, Xiangyu Liu², Xiangjun Xin³, Ran Gao³, Fu Wang¹, Feng Tian¹, Yongjun Wang¹, Qinghua Tian¹, Sitong Zhou¹ and Leijing Yang¹; ¹BUPT, China; ²Beijing Inst. of Ctrl. & Electron. Tech., China; ³BIT, China. An OSNR monitoring scheme based on the Mean-Shift algorithm is proposed.

P3.17

Joint Simulation Design of Electrodes for High-Power and High-Bandwidth Photodetector, Mengyao Tan, Yongging Huang, Likang Gong, Shuhu Tan, Xiaofeng Duan and Xiaomin Ren; Beijing Univ. of Posts and Tel., China. The electrodes of the photodetector are designed using the co-simulation method.

P3.18

Design of 1.55 µm High-Power, Narrow-Linewidth and Low-RIN Distributed Feedback Laser, Xiaomin Huang, Yong Li, Zefeng Chen, Ruidong Liu and Yunjiang Jin; Sun Yat-sen Univ., China. The designed DFB laser shows an output power of 446 mW with far-field divergence angle of 13.6°×28°.

P3.19

Optimized Design of Transport Layer for High-Speed InGaAs/InAlAs Avalanche Photodiodes, Lingtong Yang, Tianlin Ma, Hangi Li, Yu Li, Xiaofeng Duan, Kai Liu and Yongging Huang; Beijing Univ. of Posts and Tel., China.

P3.20

Experimental Investigation of the Performance Dependence on the Well-Thickness of a Single-Well GaAs/AlGaAs Superluminescent Diode, Doudou Wu, Xiaomin Ren, Hao Liu, Qi Wang and Yongging Huang; Beijing Univ. of Posts and Tel., China. The performance dependence on the well-thickness of a single-well at 1925 fps with MTF>0.6. GaAs/AlGaAs superluminescent diode is experimentally investigated.

P3.21

Displacement Monitoring Method Based on Double Intensity Modulation Phase Detection, Xuegian Bai, Qingxin Shu and Jun Hu; Zhejiang Univ., China. This paper proposes a quasi-distributed displacement monitoring method based on double intensity modulation.

P3.22

Secure Transmission of Ultra-High-Order 16384QAM via Symbol Scrambling Based on Delta-Sigma Modulation, Shuhui Zhou¹, Jianguo Yu¹, Kaile Li², Zhanjiang Wang¹, Qiufei Song¹, Yuting Huang¹ and Tong Li¹; ¹BUPT, China; ²Xidian Univ., China. We propose a digital chaos-based symbol scrambling encryption scheme for ultra-high-order 16384-QAM-OFDM photonic THz system.

P3.23

Research on Crosstalk Characteristics of Multi-Core Fibers Under Dispersion Effects Based on Coupled-Mode Theory, Minjun Li¹, Lian Xiang² and Xiaodi You¹; ¹Soochow Univ., China; ²Shanghai Univ.of Electric Power., China. The transport laver in an InGaAs/InAlAs avalanche A nonlinear crosstalk model incorporating dispersion photodiode (APD) is optimized to improve bandwidth. effects is developed for weakly-coupled multi-core fibers.

P3.24

Design of an High-Speed Near-Infrared Hyperspectral Camera Using Prism-Grating Dispersion, Chengkai Song, Kun Yuan and Wenhang Zhou; China JiLiang Univ., China. Hyperspectral camera design integrating sensor ROI and P-G optics achieves 201 SWIR bands

P3.25

Hydrophobin HGFI - Integrated FPI with Vernier Effect for Sensitive Label - Free Detection of Dengue Virus Biomarker, Wenyu Wang, Lingyi Xiong, Shaoxiang Duan, Bo Liu, Hao Zhang, Wei Lin and Haifeng Liu; Nankai Univ., China. We propose and demonstrate a FPI biosensor with Vernier effect for label-free dengue NS1 protein detection.

P3.26

Design and implementation of timing board calibrator, Xiaoging Shen, Bin Qiu, Wei Xia, Dexuan Yang, Jue Wang and Junjin Chen; China Satellite Maritime Tracking and Ctrl. Dept., China. This article proposes the design of a timing board calibration instrument, introduces its software and hardware design methods.

P3.27

Research on Real-Time Classification Methods for Plastics on Industrial Conveyor Belts Based on Hyperspectral Imaging, Wenhang Zhou, Kun Yuan and Chengkai Song; China JiLiang Univ., China. Real-time hyperspectral sorting on conveyors: PLS-DA achieves 97.33% accuracy in 18.18ms.

P3.28

Experimental Investigation on Terahertz Reflection Characteristics of Metal Plates Covered with Plasma, Jinhai Sun, Zihao Liu, Yong-Qiang Liu, Xutao Zhang, He Cai, Liangsheng Li and Hongcheng Yin; National Key Lab of Scattering and Radiation, China. The reflection characteristics of a metal plate covered with plasma are investigated using a terahertz time-domain spectroscopy system.

P3.29

Analysis of Influencing Factors in Digital Image Recognition Based on Quantum Convolutional Neural Networks, Jing Wang, Meng Zhang, Junsen Lai and Fang Li; China Academy of Info. and Comm. Tech., China. This study conducts experimental validation on QCNN-based image recognition.

P3.30

Effect of Intense Pulsed Light Therapeutic Apparatus Pulse Energy on Pulse Waveform, Min Li, Chunzi Fang, Wen Li, Sanfei Wang, Jinghao Pan and Qiuyu Shan; Zhejiang Inst. of Medical Device Testing, China. Medical largescale IPL therapy equipment pulse width with the increase in pulse energy shows a linear broadening trend.

P3.31

Deep Learning-Based MIMO Precoding Network, Silu Fan and Xi Fang; Beijing Electron. Sci. and Tech. Inst., China. To address MMSE precoding's high complexity, we developed a DNN-precoder.

P3.32

Research on Intelligent Monitoring of Pipeline Events Based on **Φ-OTDR Distributed Fiber Optic Sensor**, Yutian Liu, Zijia Zhou and Hongdan Wan; Nanjing Univ. of Posts and Tel., China. This paper proposes a Φ -OTDRbased fiber optic sensor for monitoring pipeline blockages/leaks via vibration analysis.

P3.33

Micro-ring resonator based on silicon nitride, Fanghao Li¹, Zhibao Huang¹ and Tingting Lang²; ¹China Jiliang Univ., China; ²Zhejiang Univ. of Sci. and Tech., China. This paper designs a micro-ring resonator structure based on silicon nitride materials, and the structure's good resonant performance is verified through FDTD simulation results.

P3.34

Performance Analysis of ZF and MMSE Linear Precoding in Multi-user MIMO-OFDM Systems via Simulation, Silu Fan and Xi Fang; Beijing Electron. Sci. and Tech. Inst., China. This paper compares ZF and MMSE precoding in MU-MIMO-OFDM systems.

P3.35

CNN-Based Equalization for Turbulence Mitigation in FSO-OFDM Systems, Shun Lv and Lingxiao Liu; Beijing Electron. Sci. and Tech. Inst., China. This paper proposes a CNN-based intelligent equalization scheme to suppress atmospheric turbulence effects in FSO-OFDM systems.

P3.36

Research on Encryption and Decryption of Free Space Optical Communication Based on AES Algorithm with Continuous-Variable Quantum Key Distribution, Yilin Li, Silu Fan and Xi Fang; Beijing Electron. Sci. and Tech. Inst., China. This paper describes that continuousvariable quantum key distribution (CV-QKD) can securely generate keys for AES-CTR encryption.

P3.37

Frequency Offset Equalization for High-Speed FSO-OFDM Communication Systems, Lingxiao Liu; *Beijing Electron. Sci. and Tech. Inst., China.* This paper proposes a FOE and FOC method to estimate and compensate for frequency offsets in communication systems.

P3.38

Liquid Level Sensor Based on Tapered Side-hole Fiber, Fang Zhao¹ and Weihao Lin²; ¹Guangdong Polytechnic of Water Resources and Electric Engineering, China. A highly sensitive liquid level sensor based on a tapered side-hole fiber MZI structure was developed.

P3.39

The influence of the number of fiber bending turns on medical fiber terminal output spot characteristics, Shen Gao¹, Wen Li², Jinghao Pan² and Min Li²; ¹NMPA, China; ²ZJIMDT. The test results show that with the increase of the number of bending turns.

P3.40

Robustness of Deep Learning-Enabled OFDM-FSO Systems to Universal Adversarial Perturbation Attacks, Yuxiang Liu and Lingxiao Liu; *Beijing Electron. Sci. and Tech. Inst., China.* This paper proposes a robust detector for DLenabled OFDM-FSO system.

P3.41

Comparative Study on Measurement Accuracy and Stability in Quantitative Phase Imaging, Rongmiao Xue, Liwei Guo and Chen Liu; *China JiLiang Univ., China.* This study presents a direct comparison between digital holographic microscopy and diffraction phase microscopy for quantitative phase imaging.

P3.42

Silicon-on-Insulator Mach-Zehnder Interferometer Switch with 50 dB Extinction Ratio, Luyang Liu, Shiqi Zhang, Tongxin Yang and Lei Zhang; *Beijing Univ. of Posts and Tel., China.* We demonstrate a silicon photonic MZI optical switch on SOI.

P3.43

Simulation of TFBG Lateral Speckles and Spectral Reconstruction, Fuhong Lin, Shenqi Yang and Yang Zhang; Dalian Univ. of Tech., China. This paper introduces the simulation model of the transverse spot of the Tilted Fiber Bragg Grating.

P3.44

An encryption method for OFDM-PON based on Cellular Automaton-Activation Inhibition model, Songliang Tan, Qi Zhang, Yun Wang, Xiangjun Xin, Ran Gao, Fu Wang, Liang Yan, Xiangyu Liu, Zuolin Li, Feng Tian, Yongjun Wang, Qinghua Tian, Sitong Zhou and Leijing Yang; *BUPT, China.* An OFMD-PON chaotic encryption based on FE-Logistic Cellular Automata (FCA) and incorporating the Gierer Meinhardt Activation Inhibition model (GM) is proposed.

P3.45

Time Diversity-Based Enhancement Method for UV NLOS Communication System, Yanbing Leng, Fengyu Cao, Yuxuan Ai and Tao Yang; *Beijing Univ. of Posts and Tel., China.* We established an ultraviolet communication system to validate the improvement of time diversity on non-line-of-sight(NLOS) UV link

P3.46

A tunable color filter based on Phase-change Material Ge2Sb2Te5, Xingzhe Shi and Jinghao Qi; Yuncheng Univ., China. We report a tunable color filter composed of phase-change $Ge_2Sb_2Te_5$ thin film, silicon nitride thin film, and metal reflector.

P3.47

Optimization of temperature detection method based on FSI-FBG hybrid interferometer structure and Convolutional Neural Network, Yuanzi Wang, Cheng Zuo, Tengfei Wang, Jiatong Luo, Benli Yu and Xuqiang Wu; Anhui Univ., China. This paper presents a fiber temperature sensor with FBG embedded in FSI.

P3.48

Ultra-flat NIR-to-MIR all-fiber supercontinuum source pumped by dissipative-soliton-resonance pulses at 1.56 µm, Chengzhong Ling, Ruimin Li, Ding Niu, Zhuang Wang, Heping Li, Zhiyao Zhang and Yong Liu; *UESTC.*, *China*. We demonstrate an ultra-flat all-fiber supercontinuum source spanning from the nearinfrared to mid-infrared region with negligible pump residuals.

P3.49

Enhancing Fading Suppression by Optimized Waveform Power Allocation in Frequency Domain in Φ -OTDR, Mincong Deng¹, Liming Chen², Dongdong Zou³ and Fan Li¹; ¹Sun Yat-sen Univ., China; ²China Southern Power Grid, China; ³Soochow Univ, China. A probe pulse with a uniform power distribution in the frequency domain is designed.

P3.50

A unified model for analyzing the performance of groundto-air free-space optical communication systems, Zhihao Zhao, Wentao Gai, Yifan Yang, Zigian Wang, Jiagi Luo and Juanjuan Yan; Beihang Univ., China. A numerical model for analyzing the performance of a ground-to-air free-space optical communication system is developed.

P3.51

A Time-efficient Theoretical Model for Link Visibility Analysis in Dense LEO Constellation, Hai Yang, Jinwang Qian, Junling Sun, Qiuchun Jin and Pengge Ma;

Zhengzhou Univ. of Aero., China. A time-efficient theoretical model is proposed for a general walker dense I FO constellation.

P3.52

Flexible Tactile Sensor Based on thin-core Optical Fiber

MZI, Shengyou Huang, Kun Li, Jian Chen, Shenghui Shi and Binbin Luo; Chongqing Univ. of Tech., China. This paper proposes a tactile sensor based on a sandwiched thin-core fiber Mach - Zehnder interferometer (MZI) embedded in polydimethylsiloxane (PDMS).

P3.53

To Enhance the Accuracy of Laser Doppler Velocimeter by Adaptive Techniques, Fu Liu, Longcheng Han and Tongging Liao; Anhui Univ., China. Adaptive technology is introduced in the signal processing of the laser Doppler velocimete.

P3.54

Experimental Validation of Non-Line-of-Sight Ultraviolet Communication System Performance, Yuxuan Ai, Fengyu Cao and Yanbing Leng; Beijing Univ. of Posts & Tel., China. This paper conducts a theoretical analysis of the ultraviolet non-line-of-sight (UV-NLOS) communication link.

P3.55

An In-line MZI Based on Tapered Multimode Fiber For Salinity Measurement Inside Laser Cavity, Junjie Bai¹, Yichen Cheng¹, Zihan Huang¹, Yang Yang¹, Yuhui Liu², Fang Zhao² and Weihao Lin¹; ¹Xiamen Inst. of Tech., China; ²SUSTech, China. In this work, we proposed an inline Mach Zehnder interferometer for achieving salinity monitoring.

P3.56

Multi-Modal Visible-Infrared Image Registration and Fusion for Enhanced Railway Track Inspection, Jianhua Wang¹, Jun Tian², Ruiming Zheng², Hao Sun², Yunxu Sun* and Wei Liu*; ¹Guoneng Shuohuang Railway Development Co., Ltd., China; ²Harbin Inst. of Tech. Shenzhen, China. Proposes a registration and fusion framework for visible-infrared images in railway scenes

P3.57

3D Indoor Visible Light Positioning System Based on Improved Marine Predator Algorithm, Bangbi Hu, Jie Ma, Jianfei Liu, Jia Lu, Xiangye Zeng and Mingming Luo; Hebei Univ. of Tech., China. This paper proposes an IMPA-based 3D visible light positioning system using IMU to handle receiver tilt.

P3.58

Third-order Sparse Volterra Equalizer based Nonlinear Suppression Method for High-Capacity 64/256QAM WDM PDM CO-GFDM system, Xi Fang, Lingyu Liu, Yunzhang Wang and Silu Fan; Beijing Electron. Sci. and Tech. Inst., China. A novel sparse Volterra equalizer (SVE) based nonlinear suppressing method is proposed.

P3.59

Modified Uni-Travelling-Carrier Photodiode With Step-Doping Collector Layer, Tengda Liu, Kai Liu, Xiaofeng Duan, Yongging Huang, Xiaomin Ren and Qi Wang; Beijing Univ. of Posts & Tel., China. We design the MUTC-PD with a step-doping collector layer to alleviate its maximal frequency response.

P3.60

A Mach-Zehnder interferometer ammonia sensor coated with Ti3C2TX/polyaniline composite film, Lijun Li, Erao Liang, Xingxia Wang, Jun Zhao, Xin Mao, Tianxiang Zhang and Jianwei Zhang; Shandong Univ. of Sci. and Tech., China. This paper proposes and demonstrates a high-sensitivity optical fiber ammonia (NH₃) sensor based on the Mach-Zehnder interferometer (MZI) principle.

P3.61

Real-Time Phase Noise Compensation for Frequency Sweeping Laser Source in Optical Frequency Domain Reflectometry, Haowei Sun, Jiageng Chen, Yanming Chang and Zuyuan He; *Shanghai Jiao Tong Univ.*, *China.* We propose a real-time phase noise compensation method for frequency sweeping laser source.

P3.62

Real-Time Anomaly Detection for Submarine Cables Based on Multivariate CUSUM, Chunying Xu¹, Jianrong Chen¹, Jingqi Fang¹, Keyan Xiao¹, Yuhong Xu¹, Chuliang Wei¹ and Jiawang Chen²; ¹Shantou Univ., China; ²Donghai Lab, China. This paper proposes a real-time submarine cable monitoring method.

P3.63

WGAN-based satellite laser communication networks channel modeling, Qian Wang, Yu Sun, Junde Lu, Jiaxin Zheng, Lanling Chen, Jianyu Shi, Jie Shi, Yang Yang, Shuo Jiang and Jun Qin; *Beijing Info. Sci. and Tech. Univ., China.* In this paper, we propose the first application of Wasserstein GAN (WGAN) to model inter-satellite laser channels.

P3.64

Predictive Modeling of Core Strain in OPGW Cables Using Long Short-Term Memory Networks, Yifeng Zhu, Chengyu Liu, Chengliang Zhang and Meng Xia; *China Southern Power Grid Co., Ltd., China.* This study uses LSTM to predict OPGW fiber core strain from 10 months' data.

P3.65

Optical fiber thermal anemometer by using GaAs film based Fabry-Pérot interference, Yuke Dong¹, Xinyong Dong¹, Yuming Dong², Qiang Wang¹, Xingyu Zhang² and Zhiyuan Chen²; ¹Guangdong Univ. of Tech., China; ²Shenzhen Inst. of CAS, China. An optical fiber thermal anemometer by attaching a GaAs thin film on the end-face of an optical fiber.

VIP Room 3, Track 1

16:00-18:00 W4A. Novel Fibers & Devices VI Presider: Hualona Bao, Soochow University, China

W4A.1 • 16:00 Invited



Novel Fluorotellurite Glass Fibers and Their Applications, Guanshi Qin; Jilin Univ., China.

VIP Room 4, Track 6

16:00-18:00

W4B. Measurement & Imaging VI Presider: Wenjun Zhou, China Jiliana University, China

W4B.1 • 16:00 Invited

Fiber-Optic Acoustic Sensor with Spiral-beams Supported Diaphragm for Sound Source Tracking, <u>Jiajun Tian,</u> Yanzhi Lv, Yuhao Xue and Aoxue Zhang; Harbin Inst.of Tech., China.

Room 205, Track 4

16:00-18:00 W4C. Optoelectronic Integration VI Presider: Lijun Wang, Hangzhou Institute of Xidian, China

W4C.1 • 16:00 Invited



Co-Optical Package Based on Glass Substrate. Lijun Wang; Hangzhou Inst. of Xidian Univ., China.

Room 206, Special 3

16:00-18:00 W4D. 2D-materials Photonics II Presider: Weida Hu & Xuetao Gan

W4D.1 • 16:00 Keynote



3D integration of 2D transistor via van der Waals lamination. Yuan Liu: Hunan Univ., China.



Wednesday, 30 July

Carbon nanotube mode-locked Erbium doped fiber lasers, Chengbo Mou; Shanghai Univ.,

W4B.2 • 16:20 Invited

Development of a High-Precision Demodulation System for Fiber-**Optic Current Sensors,** Qianyue Ma, Mei Sang, Qingrui Yang, Yupeng Wang, Xiaomei Zheng,

Junfeng Jiang, Zhenzhou Cheng and Qun Han; Tianjin Univ., China.

W4C.2 • 16:20 Invited



Heterogeneously integrated photonic devices based on microtranfer printing, Liang-jun Lu; Shanghai Jiao Tong Univ,

W4D.2 • 16:20 Invited



Graphene-Based Optoelectronic Conversion Towards High Performance and Intelligence. Xingzhan Wei; Chongging Inst. of Green and Intelligent Tech.,

CAS, China. We will introduce some interesting phenomena such as polaritytunable photovoltage-driven and effects.

W4A.3 • 16:40 Invited

China.



Vortex Optical Fiber Laser Based on Internal Optical Oscillatory with High-gain Silica Fiber, Jianxiang Wen; Shanghai Univ., China. A vortex optical fiber

based on internal optical laser oscillatory with high-gain silica fiber was presented in the report.



W4B.3 • 16:40 Invited

Research Progress on Signal Demodulation Technology of Interferometric Optical Fiber Sensors, Xuqiang Wu; Anhui Univ., China.

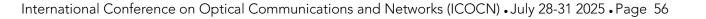
W4C.3 • 16:40 Invited

Flexible Bioinspired Photodetector Array with Integrated Nanostructures for Multidimensional Sensing, Lan Li; Westlake Univ., China.

W4D.3 • 16:40 Invited



Exciton transport and ultrafast dynamics in 2D energy landscape, Pengfei Qi; Nankai Univ., China.



Room 210, Special 1

16:00-18:00 W4E. Organic Optoelectronics VI Presider: Zugang Liu, China Jiliang University, China

W4E.1 • 16:00 Invited



High-resolution patterning of quantum dots for light-emitting device application, Hailong Hu; Fuzhou Univ., China. This study focuses on the increasing

demand of high-resolution patterning of quantum dots.

W4E.2 • 16:20 Invited



Shaping the Emission Spectra of Perovskite QDs for Wide-Color Gamut Display with Photon **Recycling,** Guijun Li; Shenzhen Univ., China.

W4F.2 • 16:20 Invited

Room 211, Track 7

W4F. Ultrafast & Nonlinear IV

Technoloav University, China

W4F.1 • 16:00 Invited

China.

Presider: Junging Zhao, Shenzhen

16:00-18:00

Pulse Splitting Induced by Higher-Order Saturable Absorption Effects in Fiber Lasers, Xingliang Li; Hebei Normal Univ., China.

Application of Nonlinear Collision

Dynamics in Photonic Crystal

Fibers, Hua Yang; Hunan Univ.,

W4G.2 • 16:20 Invited

Reservoir Computing and Deep Learning in Few-Mode Fiber **Optical Communications, Feng** Wen: Univ. of Electronic Sci. and Tech. of China, China.

W4H.2 • 16:20 Invited

Experimental Demonstration of High-Spectral-Multi-band Efficiency transmission System, Feng Tian; Beijing Univ. of Posts and Tel., China. The multi-band transmission

Wednesday, 30 July system experimental is demonstrated.

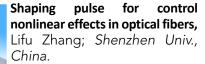
W4E.3 • 16:40 Invited



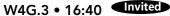
Critical Issues in the Electrohydrodynamic Inkjet Printing for fabrication of color conversion layer of Micro-LEDs, Yue Lin; Xiamen Univ., China. We

introduce new techniques that has been developed in our research group recently.

W4F.3 • 16:40 Invited







Al-aided broadband Terahertz communication towards 6G. Wen Zhou; Fudan Univ., China.

W4H.3 • 16:40 Invited



Integrated Sensing and Communication in Optical Fiber-Based Access Networks, Junwei Zhang; Sun Yat-sen Univ., China.

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16:00-18:00 W4G. Machine Learning II Presider: Wen Zhou, Fudan University, China

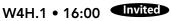
W4G.1 • 16:00 Invited



Optical Fiber Eavesdropping Detection Technology Based on Artificial Intelligence, Yajie Li; Beijing Univ. of Posts and Tel., China.

Room 215, Track 2

16:00-18:00 W4H. Optical Transmission V Presider: Nan Cui. Beijing Univ. of Posts and Tel., China





Orthogonal offset carrier-assisted detection of multiplexed asymmetric twin-SSB signals,

Jiahao Huo: Univ. of Sci. and Tech. Beijing, China.

VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

W4A.4 • 17:00 Invited



Broadband mid-infrared fiber lasers and their applications, Jianfeng Li; Univ. of Electronic Sci. and Tech. of China, China.

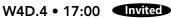


Optoelectronic hybrid microfiber long-period grating sensor, Li-Peng Sun; Jinan Univ., China.

W4C.4 • 17:00 Invited Broadband and Reconfigur-able

Dual-Mode Optical Switch with Low Power-Consumption. Xibin Wang; Jilin Univ., China.

Room 206, Special 3





Liquid lasers using colloidal quantum dots, Kaifeng Wu; Dalian Inst. of Chemical Physics, UCAS, China. We report liquid lasing from colour-tunable (red.

orange, green and blue) alloyed core/shell QDs with impeded Auger recombination.

W4A.5 • 17:20 Invited



Stable Single-Frequency Laser and Frequency Comb from a Brillouin Cavity, Hualong Bao; Soochow Univ., China.



W4B.5 • 17:20 Invited

physical precision quantity measurement. Zhilin Xu: Tech., China.

W4C.5 • 17:20

Fiber optic interferometers for Innovative Self-Heating Driven Ultra-Wideband Tunable DFB Laser Array, Yagiang Fan, Zhenxing Sun, Yue Zhang, Huazhong Univ. of Sci. and Yuan Lv, Haolin Xia, Jingxuan Zhang, Zhenzhen Xu, Wenxuan Wang, Rulei Xiao and Xiangfei Chen; Nanjing Univ., China. An ultra-wideband DFB laser array with matrix grating, enhances selfheating and increases the singlechannel current tuning range to 5.8 nm.

W4C.6 • 17:35

Advances in Sub-THz Uni-Traveling-Carrier Photodiodes and System Integration, Wenjun Zhou; China Jiliang Qingtao Chen¹ and Huijuan Niu²; ¹Polytech Montréal, Canada;²Liaocheng Univ., China. This paper reviews the design of sub-terahertz uni-travelingcarrier photodiodes and their integration prospects in photonics-based wireless systems.

W4D.5 • 17:20 Invited



Broadband and large-depth terahertz modulation by selfmonolayer silver assembly nanoparticle arrays, Wei'en Lai; Hefei Univ. of Tech., China.

Wednesday, 30 July

W4A.6 • 17:40

FDML laser dispersion measurement by using MZI, Yang Xiao¹, Kenneth Kin-Yip Wong², Jigiang Kang² and Yunxu Sun¹; ¹Harbin Inst. of Tech., China; ²The Univ. of Hong Kong, HK. Here, we proposed a dispersion measurement method of FDML laser by using MZI.



W4B.6 • 17:40 Invited

Interferometric Diffuse Optics for Measuring Cerebral Blood Flow with High Brain Specificity, Univ., China.



W4D.6 • 17:40

Terahertz-band Switchable Broadband Perfect Absorber, Huijuan Niu, Jungiang Zhang and Can Gu; Liaocheng Univ., China. We have designed a discrete complementary broadband perfect absorber that operates in two distinct modes.

18:30-21:00 Conference Banguet & Awards Ceremony

Room 210, Special 1

Room 211, Track 7

Room 212, Special 2

Room 215, Track 2

W4E.4 • 17:00 Invited



Green synthesis of InP quantum dots and application, Zugang Liu; China Jiliang Univ., China.



and

W4F.4 • 17:00 Invited

devices and their optical sensing Yat-sen Univ., China.

Beam cleanup with power scaling

in multimode fiber via nonlinear

effects, Tianfu Yao; National

Univ. of Defense Tech., China.

Recently, novel laser designs

based on beam cleanup effect in pure

passive fiber have been developed.

W4G.4 • 17:00

Integrated nonlinear photonic A Blockchain-based Multi-factor Trusted Access Control Scheme for Optical applications, Bin Zhang; Sun Communication Cross-domain Prediction, Yinyu Hou, Cui Zhang, Qiuyan Yao, Hui Yang and Jie Zhang; Beijing Univ. of Posts and Tel., China.

W4G.5 • 17:15

End-to-End Modeling of FSO Communication Systems with QNSC Encryption under Different Turbulence Conditions, Zihao Zhang¹, Yanwen Zhu¹, Xun Zhou², Xiaogang Wang², Yixin Wang¹ and Jie Zhang¹; ¹Beijing Univ. of Posts and Tel., China.

W4G.6 • 17:30

High-Speed coherent 2×400 Gbps 16QAM **Optical Transmission enabled by TCN based** nonlinear equalizer, Lanling Chen, Jie Shi, Yu Sun, Junde Lu, Jiaxin Zheng, Jianyu Shi, Yang Yang, Shuo Jiang and Jun Qin; Beijing Info. Sci. and Tech. Univ., China.

W4G.7 • 17:45

Raman rapid diagnosis of tumor pathology based on spectral-image fusion intelligent method, Minjie Zhou, Wenbo Mo and Shuang Ni; China Academy of Engineering Physics, China.

W4H.4 • 17:00 Invited



Harnessing Advanced Laser Interferometry for Integraged **Vibration Sensing and Coherent** Transmission using Wide-Linewidth Telecom Lasers, Xueyang Li; Pengcheng Lab, China.

Research on architecture and

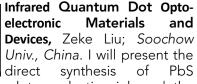
algorithm of ultra-high-speed

PON systems, Tao Yang; Beijing

Univ. of Posts and Tel, China.



W4E.5 • 17:20 Invited



quantum dot conductive ink and the fabrication of photoelectric conversion devices.

W4E.6 • 17:40 Invited



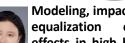
Direct in situ Photolithography of Perovskite Quantum Dots, Gaoling Yang; Beijing Inst. of Tech., China. We develop a direct in situ photolithography

technology to pattern perovskite quantum dots with excellent fluorescence uniformity.

W4F.6 • 17:40 Invited

W4F.5 • 17:20 Invited





W4H.5 • 17:20 Invited

W4H.6 • 17:40 Invited Modeling, impact evaluation, and equalization of polarization effects in high baud rate optical fiber communication system, Nan Cui; Beijing Univ. of Posts and Tel, China.

18:30-21:00 Conference Banquet & Awards Ceremony

VIP Room 3, Track 1

08:00-10:00 Th1A. Novel Fibers & Devices VII Presider: Jingjing Zheng, Beijing Jiaotong University, China

Th1A.1 • 08:00 Invited



Artificial intelligence algorithm for demodulation of fiber optical Guaniun Wang: sensors. Hainan Univ., China.

VIP Room 4, Track 6

08:00-10:00

Th1B. Measurement & Imaging VII Presider: Shun Wang, Guangdong University of Technology, China

Th1B.1 • 08:00 Invited Synthesis of astigmatic nonuniformly correlated beams. Jiayi Yu; Shandong Normal Univ., China.

Room 205, Track 4

08:00-10:00

Th1C. Optoelectron Integration VII Presider: Xin Li, Beijing University of Posts and Telecommunications, China

Th1C.1 • 08:00 Invited



High-Speed and Large-Capacity All-Optical Matching System for Photonic Firewall, Xin Li; Beijing Univ. of Posts and Tel., China.

Room 206, Special 3

08:00-10:00 Th1D. 2D-materials Photonics III Presider: Jiang Wu & Xiao Wang

Th1D.1 • 08:00 Keynote



Second Harmonic Generation from Centrosymmetric Graphene Induced by Interfacial Charge Doping, Xuetao Gan, Northwestern Polytechnical Univ., China.

Th1A.2 • 08:20 Invited



Study on Improving the Performance of FBG by Laser **Cladding Metalization Mounting.** Bangguan Liao; Tiangong Univ,

China. The FBG was mounted through laser cladding, and the performance comparison study was conducted.

Th1A.3 • 08:40 Invited

Preliminary exploration of cross core sensing characteristics of multi-core optical fibers, Mei Sang; Tianjin Univ., China. This paper proposes a novel

refractive index sensor based on crosscore coupling in multi-core fibers.

Th1B.3 • 08:20 Invited

Th1B.1 • 08:40 Invited

applications in LiDAR imaging.

fractal

Mid-infrared data encryption based on computational temporal ghost imaging, Han Wu;

Fractal superconducting nano-

wire single-photon detectors and

their applications in LiDAR

imaging, Xiaolong Hu; Tianjin

Univ., China. I will present our

superconducting nanowire

Th1C.2 • 08:20 Invited Effect of Weakly Correlated



Experimental Verification and Application in High-Quality GaAs/Si Heteroepitaxial Growth, Yidong Zhang Xiaomin Ren, Qi Wang, Hao Liu and

Yongging Huang; Beijing Univ. of Posts and Tel., China.

Th1C.3 • 08:40 Invited



The Structural Design and Device Fabrication of Low-Dimensional Metal Halide Optoelectronic Materials, Yigiang Zhang; Zhengzhou Univ., China. This

recent progress in high-performance talk focuses on the structural design and device fabrication of low-dimensional single-photon detectors and their metal halide optoelectronic materials.

Th1D.2 • 08:20 Invited



Controllable synthesis and applications of low dimensional optoelectronic materials. Shenghuang Lin and Haoran Mu; Songshan Lake Materials

Lab, China.

Th1D.3 • 08:40 Invited



Design of ultra-broadband highefficiency metalens based on a single-layer plasmonic metasurface with hybrid dispersion, Yong-Qiang Liu, Chen Qi,

Jiazhi Wang and Jinhai Sun; National Key Lab of Scattering and Radiation, China.

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Room 210, Special 1

08:00-10:00

Th1E. Organic Optoelectronics VII Presider: **Baomin Xu.** Southern Univ. of Sci. and Tech., China

Th1E.1 • 08:00 Invited



Interfacial Engineering for Highly–efficient Perovskite Solar **Cells**, Yang Li; Shihezi Univ., China. This presentation highlights the application of

interfacial materials in enhancing the performance and stability of PSCs.

Th1E.2 • 08:20 Invited



High efficiency 2T Perovskite/ CIGS tandem device for commercial applications, Yong Peng; Wuhan Univ. of Tech., China.

08:00-10:00

University, China

Th1F.1 • 08:00 Invited

ThF.2 • 08:20 Invited

High-resolution magnetic field measurement based on photoelectric hybrid links, Ming Deng; Chongging Univ., China. This Report reports a temperatureinsensitive magnetic field measurement svstem based on photoelectric oscillation links.

Room 211, Track 5

Research on the Performance

Taiyuan Univ. of Tech., China.

Distributed

Th1F. Optical Signal Processing III

Improvement of

Presider: Ming Deng, Chongging

Th1E.3 • 08:40 Invited



Fabrication technologies perovskite solar cells towards mass production, Baomin Xu; Southern Univ. of Sci. and Tech., China. I will give a short

overview about fabrication technologies China. of PSCs towards mass production developed in our group.

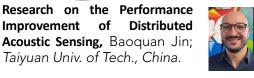
Th1F.3 • 08:40

of Flat microwave frequency comb generation based on stimulated Brillouin scattering. Jinjian Feng, Yang Jiang, Jing Xu, Xiaohong Lan, Jiancheng Yu, Hui Zhang, Tingyi Jiang and Yu Wu; Guizhou Univ.,

Room 212, Special 4

08:00-10:00 Th1G. Optical Biosensors I Presider: Yang Ran, Jinan University, China

Th1G.1 • 08:00 Invited



Optical Fiber Bio-Sensors in Real-Life Contexts. Francesco Chiavaioli; National Research Council of Italy, Italy. Here an overview of most fascinating

examples of optical fiber bio-sensors in real-life contexts is provided.

Th1G.2 • 08:20 Invited



Th1H.2 • 08:20 Invited



FPGA Implementations of PAM-4 Lite-DSP Receiver for IM/DD optical data links, Jinlong Wei; Peng Cheng Lab, China. FPGA implementations of

real-time high-speed PAM-4 receiver digital signal processing architecture with complexity ultra-low is demonstrated.

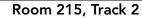
Th1H.3 • 08:40

Real-time 32×Single-carrier 800 Gbit/s with 128 GBaud PCS-16QAM signals transmission over 3000 km amplified only by EDFA, Chuangye Wang¹, Yakun Hu², Shikui Shen², He Zhang², Zelin Wang², Jun Luo³, Xinvan Zhou³, Jun Wu³, Hongyan Zhou³, Guangguan Wang², Xiongyan Tang² and Min Zhang⁴; ¹China Unicom Network Comm. Co., Ltd., China.

Th1G.3 • 08:40

Optical fiber detection and treatment for clinical applications, Yunyun Huang; Jinan Univ., China.

microcavity



08:00-10:00 Th1H. Optical Transmission VI Presider: Jinlong Wei, Pena Chena Lab. China

Th1H.1 • 08:00 Invited



VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

Room 206, Special 3

Th1A.4 • 09:00 Invited



Multifunctional imaging using single multimode fiber, Zhong Wen; Zhejiang Univ., China. We present a single-fiber phase method imaging using

frequency modulation.



vibration measurement through China.

Th1C.4 • 09:00

Sensitivity-enhanced fiber-optic Design of a fast-tuning reflective element for external cavity laser resonance, Shuling deflection amplification structure, Hu, Xiang Zhou and Binzhi Qi; Beihang Qi Zhang; Shanghai Univ, Univ, China. An integrated external cavity feedback element suitable for onchip lasers has been proposed.

Th1C.5 • 09:15

Recent Progress in Theoretical Design for Sub-THz Uni-Traveling-Carrier Photodiodes, Huijuan Niu¹, Qingtao Chen², Kai Liu³, Fiber Long-Period Xiaofeng Duan³, Yongging Huang³ and Chenglin Bai¹; ¹Liaocheng Univ., China. Univ., We propose novel sub-THz MUTC photo-detectors with waveguide and vertical designs, achieving hiah responsivity, high output power, and wide bandwidth under low bias.

Th1C.6 • 09:30

Research on the widening method of sensing measurement range based on Recent Research on Sensitivity CMRR, Yuxia Song¹, Xiangxu Wei¹, and Stability Enhancement in Jiamei Gu², Mingyu Li¹, Tuo Chen¹ and Interferometric Jian-Jun He²; ¹Changchun Univ. of Sci. and Tech., China. This paper proposes a Guangdong Univ. of Tech., method based on a cascaded microring resonator structure to calculate the free spectral range and shifts in the spectrum envelope.

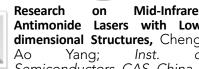
Th1D.4 • 09:00 Invited



In-sensor dynamic computing and sensing/wireless communication integration, Yuekun Yang¹, Chen Pan², Shi-Jun Liang¹ and Feng Miao¹; ¹Nanjing Univ.,

China; ²Nanjing Univ. of Sci. & Tech., China. In-sensor dynamic computing can be used for accurate detection of dim targets.

Invited Th1D.5 • 09:20



Mid-Infrared Antimonide Lasers with Lowdimensional Structures. Chenaof Semiconductors, CAS, China.

Th1A.5 • 09:20 Invited



Center-Assisted Ring-Core Fibers and their Mode Degeneracy Manipulating Characteristics, Jingjing Zhena; Beijing Jiaotong Univ., China. Several

center-assisted ring-core fibers are proposed for the spatially degenerate mode control of LPmn mode groups.



Th1B.5 • 09:20 Invited Multicore

Gratings, Yunhe Shanghai Maritime China.

Zhao;

Th1A.6 • 09:40

Thursday, 31 July

Cavity optomechanical sensors using fiberoptic devices, Qiang Zhang and Yongmin Li; Shanxi Univ., China. We introduce our recent works on cavity optomechanics.

Th1B.6 • 09:40 Invited

China.

Tone Fiber-Optic Sensors. Shun Wang;

Th1D.6 • 09:40 Preparation of composite nanoparticle films and their optical characterization in the terahertz band, Hao Yu and Yongliang Li; Changchun Univ. of Sci. and Tech., China.



Th1B.4 • 09:00 Invited

Room 210, Special 1

Room 211, Track 5

Th1E.4 • 09:00 Invited



Functional Layer Regulation and Low-Temperature Properties of Perovskite Solar Cells, Yuving Hao; Taiyuan Univ. of Tech., China. We propose a

modification strategy of streptomycin sulfate for SnO2. And we propose an additive strategy of polyacrylonitrile to enhance the low-temperature performance of PSCs.

Th1E.5 • 09:20 Invited



Smart Fiber with Overprinted Patterns to Function as Chip-like Multi-threshold Logic Switch Circuit, Xing Fan; Chongging Univ., China. Herein, we

presented a smart fiber with multilayers of overprinted patterns, composed of many small units with 0.3 mm long to function as a 1D array of chip-like multithreshold logic-switch circuit.

Th1E.6 • 09:40 Invited



Passivation strategie and interface engineering for highly efficient perovskite solar cells, Xueging Xu; Guangzhou Inst. of Energy Conversion, China.

This review focuses on passivation strategies, and interface engineering to overcome these hurdles.

Th1F.4 • 08:55

A simple photonic approach for joint measurement of frequency and angle-ofarrival, Xiaohong Lan, Yang Jiang, Jing Xu, Jiancheng Yu, Jinjian Feng, Yunkun Luo, Qianyou Long, Hui Zhang, Tingyi Jiang and Yu Wu; Guizhou Univ., China.

Th1F.5 • 09:10

Robust and High-speed Polarization Modulation Based on Nonreciprocity of Lithium Niobate Modulator for Quantum **Key Distribution,** Zexu Wang¹, Huaxing Xu², Bo Liu³, ¹Feifei Yin, ¹Kun Xu and ¹Yitang Dai; ¹Beijing Univ. of Posts and Tel., China; ²China Academy of Electron. and Info. Tech., China; ³National Univ. of Defense Tech., China.

Th1F.6 • 09:25

Optoelectronic Oscillator Based on Ultra-High Q Sapphire Oscillator, Yi Zhou, Yuan Yu and Xinliang Zhang; Huazhong Univ. of Sci. and Tech., China.

Th1F.7 • 09:40

Optical Sequence Pattern Recognition of 4symbol OOK Signal for Photonic Firewall, Xuejian Jiang¹, Jiawen Zhang¹, Jiabin Cui¹, Yanxia Tan², Huashun Wen³ and Yuefeng Ji¹; ¹Beijing Univ. of Sci. and Tel., China: ²China United Network Comm. Co., Ltd., China; ³Nankai Univ., China.

Th1G.4 • 09:00 Invited Light-controlled bio-microrobot, Hongbao Xin; Jinan Univ., China.

Room 212, Special 4



Th1G.5 • 09:20 Invited

Th1G.6 • 09:40 Invited

of biochemical detection.

Stretchable multimodal photonic

sensor for wearable healthcare

Biochemical sensing with micro-

nano optical fibers. Jinhui Yuan:

Beijing Univ. of Posts and Tel.,

China. This report will

introduce the relevant research

results of micro-nano fibers in the field

Guo:

monitoring, Jinajina

Beihang Univ., China.

Th1H.4 • 08:55

Real-Time Breakpoint Localization by Stokes Assisted Forward-Propagation **Communication,** Jialing Liu¹ and Zhun Huang²; ¹China Yangtze Power Co., Ltd, China; ²Accelink Technologies Co. Ltd.

Room 215, Track 2

Th1H.5 • 09:10

Fiber Eavesdropping Detection with Anti-Interference in Coherent Optical Transmission, Yuyuan Liang¹, Yuang Li¹, Shuang Wei¹, Haokun Song², Yajie Li¹ and Jie Zhang¹; ¹Beijing Univ. of Posts & Tel., China; ²China Mobile Group Design Institute Co., Ltd., China.

Th1H.6 • 09:25

Physics-Guided Sparse Modeling for Multimode Fiber Channels with Minimal Parameters, Haifeng Yang, Yongjun Wang, Chao Li, Lu Han, Hengdao Gao, Shaonan Hong and Qi Zhang; Beijing Univ. of Posts & Tel., China.

Th1H.6 • 09:40

Experimental Demonstration of Optical Fiber Authentication Based on Rayleigh Backscattering Fingerprints Extracted by **OTDR,** Yifan He, Shuang Wei, Yuang Li, Yuyuan Liang, Yajie Li, Yongli Zhao and Jie Zhang; Beijing Univ. of Posts & Tel., China

10:00-10:30 Poster Session 4 & Tea Break

Thursday, 31 . July

P4.1

Design of Weakly Coupled Two-Mode Hollow-Core A High-Sensitivity Differential Pressure Optical Fiber Antiresonant Fiber With Waterdrop-Shaped Nested Tubes, Jingmin He, Hu Zhang, Jiagi Wang, Xiaoguang Zhang and Lixia Xi; Beijing Univ. of Posts & Tel., China. We propose a weakly coupled two-mode waterdropshaped nested antiresonant fiber

P4.2

Miniaturized optical fiber displacement probe with largecollection-angle, Chengpin Wu, Leiming Wu, Xikai Hou, Jiagi Zhu and Xinyong Dong; Guangdong Univ. of Tech., China. This work proposes fiber optic displacement sensing probe with a common optical path Michelson interferometer.

P4.3

An Ultra-Wideband Tunable DFB Semiconductor Laser with **Compact Structure,** Yagiang Fan, Yuan Lv, Zhenxing Sun, Haolin Xia, Jingxuan Zhang, Wei Yuan, Yuechun Shi, Yan Wang, Pengfei Xu and Xiangfei Chen; Nanjing Univ., China. This work presents a compact 8×1 DFB laser array with high performance.

P4.4 Multi-physics Simulation-Driven Thermal Distribution Optimization and Ultra-High-Power Reliability Design of Anti-Resonant Fibers, Xiaomei Zheng, Qun Han, Yupeng Wang, Qingrui Yang, Junfeng Jiang and Zhenzhou Cheng; Tianjin Univ., China. This study focuses on the simulation of thermal distribution and optimization in such applications.

P4.5

Airflow Velocity Sensor Based on the Vernier Effect, Zuhao Liao, Bo Han, Zhiyuan Liu, Taiwen Li, Jiafu Xu and Yanan Zhang: Northeastern Univ., China, A highsensitivity optical fiber flow velocity sensor based on Vernier effect is proposed.

P4.6

Analysis of the Thermal Sensitivity of the Resistivity of Titanium Nitride, Yi Xu, Shiqi Zhang and Lei Zhang; Beijing Univ. of Posts & Tel., China. We report the thermal sensitivity of the resistivity and the fuse current density of the TiN heater on SOI.

P4.7

Robust Coarse Tracking via Adaptive Resizing of Reception Spot in Satellite Laser Communications, Shengda Wang, Lingyun Ke, Nan Cui, Hu Zhang and Xiaosheng Xiao; Beijing Univ. of Posts & Tel., China. We propose an enhanced coarse tracking approach for acquisitionpointing-tracking system in satellite laser communication scenarios.

P4.8

Ultra-wideband, multi-frequency, blind-spot-free frequency hopping signal generation based on single optical frequency comb, Zilong Zhou, Hua Zhou, Tao Pu, Yang Liu, Jin Li, Jilin Zheng and Xiaolong Zhao; Army Eng. Univ. of PLA, China. By tuning the frequency shifting range to match the comb spacing of the comb, it is possible to achieve ultraoptical wideband

P4.9

A Data Augmentation Method Based on Time Domain Convolutional Mask Network for improved event recognition in *Q***-OTDR**, Yi Shi, Jie Chen, Qizhi Liu, Zihao Sun and Chuliang Wei; Shantou Univ., China. We propose a data augmentation method using a timedomain convolutional mask network.

P4.10

Operando monitoring the chemical polymerization with a fiber grating-based sensor, Yan Zhou¹, Wenjun Zhou², Changyu Shen² and Rui-Pin Chen¹; Zhejiang ¹Sci-Tech Univ., China; ²China JiLiang Univ., China. We present that a fiber grating-based sensor is capable to monitor the full polymerization in a hydrogel.

P4.11

KAN Enhanced CNN-BiLSTM for Accurate Modeling of Optical Fiber Channels, Shaonan Hong, Yongjun Wang, Haifeng Yang, Lu Han, Hengda Gao and Qi Zhang; Beijing Univ. of Posts & Tel., China. This paper proposes a hybrid model combining Kolmogorov-Arnold Network (KAN), CNN and Bi-LSTM for fiber channel modeling.

P4.12

Sub-Nyquist Single-Pixel Image Transmission under Turbulent Channels, Haixia Feng¹, Ting Zhang², Yongyuan Wang³³, Junjie Wu, Yongye Qiu³ and Kaimin Wang³; ¹Sanda Univ., China; ²Jiangxi Univ. of Fin. & Econ., China; ³USST. We evaluate the performance of various sub-Nyquist single-pixel computational ghost imaging schemes under non-Kolmoaorov atmospheric turbulence channels.

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P4.13

Research on Integrated Suppression Methods for Multi-Source Noise in Weak Fiber Bragg Grating Arrays, Lifan Li, Hantao Li and Xiaoyang Hu. This paper demonstrates a tri-mode noise suppression method for weak FBG arrays.

P4.14

Quantum Secure in Flexible Optical satellite Network: State-of-the-Art and Challenges, Guan Wang¹, Nan Feng² and Youjian Zhao¹; ¹Tsinghua Univ., China; ²The 54th Research Inst. of CETC, China. We described the applicability of quantum key distribution (QKD) over the optical satellite network to provide the secure scalability and the flexibility.

P4.15

Prediction of Polarization Mode Dispersion Using a Chaoticmutation-PSO-BP Neural Network, Shirui Zhang, Xianfeng Tang, Zhihan Li, Lixia Xi and Xiaoguang Zhang; *Beijing Univ. of Posts & Tel., China.* Neural network is successfully used to establish the relationship between polarization mode dispersion (PMD) and weather factors.

P4.16

A Subcarrier-Number-Multiplied Light Source Enabled by a Novel Recirculating Frequency Shift Loop Structure, Shuonan Duan, Jie Zhang, Wentao Dai, Chunfeng Ge and Zhaoying Wang; *Tianjin Univ., China.* A novel optical recirculating frequency shift loop combining single-sideband modulation and higher-order modulation is proposed.

P4.17

Harmonic Fiber Bragg Gratings for Wearable Optical Sensing Applications, Xu Yue, Yang Ran, Zhuo Zhang and Yu Huang; Jinan Univ., China. We developed a wearable optical sensor based on higher-order harmonic fiber Bragg gratings (FBGs).

P4.18

Selective Ethanol Sensing based on Nile Red Functionalized

Fiber Bragg Grating, Shijie Li¹, Yiwei Li², Yuchen Wang², Zhenheng Xu¹, Yuehuan Lin¹, Jiaming Zhang¹, Teng Tan² and Baicheng Yao²; ¹China Southern Power Grid Co., Ltd., China; ²UESTC, China. A novel highsensitivity and selective ethanol sensor based on Nile Red coated micro-FBG is reported.

P4.19

Real-time Monitoring of Human Heart Rate Utilizing DAS, Shaojun Zhang¹, Yulin Zhang² and Chungang Liu³; ¹Heilongjiang Univ. of Chinese Medicine, China; ²Qiandongnan Prefecture People's Hosp., China; ³CSPC-NBP Pharmaceutical Co., Ltd., China. We demonstrated the real-time monitoring of human heart rate using the DAS.

P4.20

Physics-Informed Neural Networks for Fast and Accurate Optical Simulation and Design, Wenbo Zhang, Haibo Wang, Zhemg Lee, Guanju Peng and Zongze Li; *Tianjin Univ., China.* We propose a fast, accurate DNN method using physics-based residual of Maxwell's equations as loss function to simulate and design photonic devices without traditional solvers.

P4.21

Bidirectional dual-comb fiber laser based on a novel fourport circulator and hybrid mode-locking, Shijie Li¹, Zhangru Shi², Mingjun Wang², Guoyuan Cai¹, Yaqian Zhao¹, Weixun Zhang¹ and Bowen Li¹; ¹China Southern Power Grid Co., Ltd., China; ²UESTC, China. We generated a bidirectional single-cavity dual-comb fiber laser.

P4.22

Cross-Arrayed Optical Micro/Nanofibers for Multiaxial Tactile Force Sensing, Kun Li, Shengyou Huang, Wenyi Li, Xue Zou, Decao Wu and Binbin Luo; *Chongqing Univ. of Tech., China.* This study presents a multiaxial tactile sensor using cross-arrayed micro/nano optical fibers embedded in PDMS.

P4.23

Nonlinearity Mitigation in a 32APSK Visible Light Communication System Utilizing Windowed Single Carrier Frequency Domain Equalization, Xiangdong Zhang, Zhuoran Hu, Zhe Feng, Zhiwu Chen and Nan Chi; Fudan Univ., China. A VLC system using circularly polarized light and polarization diversity employs a novel WSCFDE pre-equalization.

P4.24

Label-free specific detection of microplastics via fiber microcavity sensor functionalized with aptamer, Yicong Ma, Lingyi Xiong, Shaoxiang Duan, Bo Liu, Hao Zhang, Changjin Li, Fan Jia, Wei Lin and Haifeng Liu; Nankai Univ., China. The aptamer-functionalized fiber-optic microcavity sensor specifically detects polystyrene nanoplastics (0.02 - 0.1% (w/v)) in water.

P4.25

Multi-sensor spatio-temporal attention network for fault Ultralong Waveguide Grating for optical phased array, diagnosis of wind turbine, Chunying Xu, Fuchang Chen, Livu Chen, Yunan Liu, Yuhong Xu and Zhan Lian; Shantou Univ., China. A wind turbine fault classification method based on multi-sensor spatio-temporal attention network (MSSTANet) is proposed.

P4.26

Highly Sensitive Curvature Sensor based on Helical Long-Period Gratings in Elliptical-Core Fiber, Ya'Nan Zhang, Ruichen Dai, Mengying Hu, Yan Jiang, Fei Pan and Yunhe Zhao; Shanghai Maritime Univ., China. A highly sensitive curvature sensor based on elliptical-core fiber helical long-period grating is proposed.

P4.27

Design and Optimization of Glass-Based Optical Waveguide **Directional Couplers,** Zhenzhen Wang, Guoliang Chen and Guigi Wang; Xidian Univ. Hangzhou Inst. of Tech., China. A directional coupler is designed on a glass substrate, enabling control over the propagation of optical waveguide modes for 1550nm communication light.

P4.28

Resource Allocation Based on Traffic Engineering and Spectrum Window Prioritization in Power Backbone Elastic **Optical Networks,** Chunying Wang¹, Zhiyuan An¹, Lijie Wu¹, Lei Sheng¹, Huifang Liu¹, Xiaohan Cui², Shaobo Qin² and Ruijie Zhu²; ¹State Grid Henan Electric Power Info. & Tel. Co., ²Zhengzhou Univ., China. This paper proposes a traffic engineering and spectrum window prioritization algorithm in power backbone elastic model for intent extraction in LEO satellite networks. optical networks.

P4.29

Yanging Qiu¹, Panxiang Jin¹ and Tingting Lang²; ¹China Jiliang Univ., China; ²Zhejiang Univ. of Sci. and Tech., China. This paper presents a waveguide grating antenna (WGA) serving as a radiation element for optical phased arrays (OPA)

P4.30

Microsphere-Based Fiber-Optic Magnetic Field Sensor Utilizing Whispering Gallery Mode and Fabry-Perot Cavity, Xiaoshan Guo and Xinling Tong; Wuhan Univ. of Tech., China. This paper presents a novel fiber-optic magnetic field (MF) sensor integrating dual sensing modes of whispering gallery mode (WGM) and Fabry-Perot interferometer (FPI).

P4.31

Dynamic Thermal Error Mitigation in Laser Diode Testing via Automated Interval Control, Zegi Zhu, Quankang Chen and Xiaolong Zhang. This paper proposes an automated test system that enhances data consistency by introducing controlled cooling intervals between measurements.

P4.32

An Intent Extraction Method for LEO Satellite Networks Based on a Rotational Position Encoding BERT Model, Weikang Zhou¹, Qi Zhang¹, Gengyu Li², Hongyuan Zhang², Fu Wang¹, Feng Tian¹, Yongjun Wang¹, Qinghua Tian¹, Sitong Zhou¹ and Leijing Yang¹; ¹BUPT, China; ²China Academy of Space Tech., China. This paper proposes a RoPE and BiLSTM-enhanced BERT

P4.33

Stable 532nm laser output based on Hansch-Couillaud technology, Miaomiao Jin¹, Shuling Hu¹, Bing Li², Jiagi Yu², Nan Li² and Jianguo He²; ¹Beihang Univ., China; ²CAS, China. A stable output of 532nm laser based on the Hansch-Couillaud frequency doubling ring cavity is achieved.

P4.34

Miniaturized fiber photoacoustic spectroscopy for ppblevel in-situ dissolved gas detection, Haojie Liu, Jun Ma and Bai-Ou Guan; Jinan Univ., China. An optical fiber micro-gas cavity based photoacoustic spectroscopy is proposed for fast dissolved gas sensing.

P4.35

Design and Simulation of an Anti-Resonant Hollow-Core Fiber Fabry–Pérot Etalon for Precision Wavelength Calibration, Xingwang Cao¹, Tongjun Liu², Huigi Ye² and Dong Xiao²; ¹Nanjing Univ. of Posts and Tel. China;., ²Nanjing Inst. of Astro. Optics & Tech., CAS, China. A brand new anti-resonant hollow-core fiber Fabry-Pérot etalon for astronomical wavelength calibration is constructed.

P4.36

Performance Studv of Compressive Perception Computational Ghost Imaging for Underwater Transmission, Meiyong Xu¹, Lan Xiang², Yongye Qiu², Junjie Wu², Yongyuan Wang², Ting Zhang³ and Kaimin Wang²; ¹BUPT, China; ²Univ.of Shanghai for Sci.& Te., China; ³Jiangxi Univ. of Fin.& Econ., China. We investigate the underwater transmission performance of compressive perception computational ghost imaging schemes.

P4.37

Miniature Czerny-Turner Spectrometer, Zhihui Fu¹, Zhuoyang Liu² and Tingting Lang²; ¹Hangzhou Dianzi Univ., China; ²Zhejiang Univ. of Sci. and Tech., China. This study develops a miniaturized Czerny-Turner fiber-optic spectrometer covering visible and nearinfrared bands for portable spectral analysis..

P4.38

Deformation sensor based on tapered dispersion compensated fiber and silicone rubber, Huiling Huang and Chao Jiang; Hubei Normal Univ., China. A sandwich structure consisting of single-mode fiber (SMF), dispersion compensation fiber (DCF), and SMF is constructed.

P4.39

SFC Deployment Algorithm for Satellite Networks Based on

MLP and PPO, Yanxiang Wang¹, Qi Zhang¹, Furong Chai¹, Dandan Sun¹, Xiao Feng², Yi Zhao³, Fu Wang¹, Feng Tian¹, Xiujuan Qing¹, Qinghua Tian¹ and Yongjun Wang¹; ¹BUPT, China; ²China Electron. Tech. Taiji ³, China. A deployment method based on Multi-Laver Perceptrons (MLP) and Proximal Policy Optimization (PPO) is proposed.

P4.40

An efficient deep learning strategy for non-invasive optical fiber sensor monitoring of ECG signal reconstruction from ballistocardiogram, Kaili Yang¹, Xiuyuan Wang², Wei Xu² and Changyuan Yu³; ¹2nd People's Hosp. of Changshu, China; ²The HK Polytechnic Univ., HK; ³Suzhou Univ. of Tech., China. In this paper, we established a noninvasive optical fiber sensor and a novel deep learning model for mapping BCG waveforms to ECG.

P4.41

Projection Technology and Comparative Analysis of Lens current status of ultra-short throw projection OFDR. technology.

P4.42

A Visual Method for Locating Stoves, Fanghao Li¹, Qimeng Tao¹, Haibin Zhang², Shaosheng Tang² and Tingting Lang²; ¹China Jiliang Univ., China; ²Zhejiang Univ. of Sci. and Tech., China. This paper presents contour extraction and pixel calculation.

P4.43

High sensitivity hydrogen gas sensor based on PDMS-Pt coated microrod., Zhenheng Xu¹, Shuya Yuan², Yanhong Guo¹, Weixun Zhang¹, Jiaming Zhang¹, Shijie L¹i, Teng Tan² and Baicheng Yao²; ¹China Southern Power Grid Co., Ltd., ²Univ. of Electron. Scie. and Tech. of China, China. We design PDMS-Pt coated microrod cavity, based on this device, ppb-level detection of hydrogen neural networks is proposed. gas is demonstrated.

P4.44

High-resolution gas sensing based on graphene-coated Dshaped fiber in an active F-P Cavity, Yagian Zhao¹, Yutong Li², Yuchen Wang², Shengrong Liu¹, Yuehuan Lin¹, Qiancheng Lv¹, Yanhong Guo², Teng Tan² and Baicheng Yao²; ¹China Southern Power Grid Co., Ltd., China; ²Univ.of Electron. Sci. and Tech. of China., China. A gas sensor based on graphene-functionalized Dshaped active Fabry-Pérot cavity is proposed.

P4.45

Current Development Status of Ultra Short Throw Purity characterization of mixed mode groups in a directional mode convertor using OFDR method, Structure Performance, Fanghao Li¹, Huanxin Liu¹ and Mingming Luo, Caiyun Wang and Jianfei Liu; Hebei Tingting Lang²; ¹China JiLiang Univ., China; ²Zhejiang Univ. of Tech., China. We propose a characterization Univ.of Sci. and Tech., China. This paper reviews the for mode purity in a directional mode convertor using

P4.46

Design of an On-Chip Microcavity Isolator Baesd on Exceptional Point in Gain-Loss Grating Structure, Yutong Li, Teng Tan and Baicheng Yao; Univ. of Electro. Sci. and Tech. of China, China. This paper proposes an optical isolator structure, based on exceptional pointinduced nonreciprocal transmission.

P4.47

Spatial-temporal Feature Fusion-Based Brillouin Frequency Shift Extraction in BOTDA System, Caojun Zhang, Liang Zhang, Yu Chen, Weiyu Pan, Wenzhi Wang, Jie Min, Feng Qian, Mengshi Zhu, Heming Wei and Fufei Pang; Shanghai Univ., China. A spatial-temporal feature fusion model involving pseudo-video denoising and

P4.48

Ultra-broadband 1950-nm dual-comb fiber laser for photoacoustic spectroscopy, Zhenheng Xu¹, Xu Yin¹, Shijie Li¹, Zhiming Gu¹, Yuting Tan¹, Zixiang Meng² and Bowen Li²; ¹China Southern Power Grid Co., Ltd., China; ²Univ. of Electron. Sci. and Tech. of China, China. This work proposes a 1950 nm dual-comb fiber laser prototype with 7 kHz repetition-rate difference and 100 nm bandwidth.

P4.49

Wavelength scanning high-sensitivity surface plasmon resonance (SPR) sensor operating in 1550nm band, Zisheng Zhang¹, Jiamei Gu¹, Mingyu Li² and Jianjun He¹; ¹Zhejiang Univ., China; ²Changchun Univ. of Sci. and Tech., China. A high-sensitivity 1550nm-band Kretschmann-configured SPR sensor is demonstrated.

P4.50

Overview of filterless optical networks over multiple applications: Opportunities and Challenges, Guan Wang, Nan Feng and Youjian Zhao; *Tsinghua Univ., China; The 54th research Inst. of CETC, China.* We propose some opportunities and challenges in the optical satellite network.

P4.51

Photonics-Based Image Enhancement and Semantic Segmentation for Railway Obstacle Detection Under Low-Light Conditions, Chaohui Zhang¹, Ruiming Zheng², Jun Tian², Hao Sun², Yunxu Sun* and Wei Liu*; ¹Guoneng Shuohuang Railway Development Co., Ltd, China; ²Harbin Inst. of Tech. Shenzhen, China. This study proposes a physics-guided GAN with adaptive band selection to enhance low-light/infrared images.

P4.52

A detection signal phase encoder, Junfeng Ren¹, Ping Li¹, Chenyang Ma², Zhengyang Xie² and Zheng Zheng²; ¹Beijing Inst. of Tech., China; ²Beihang Univ., China. A phase encoder generator based on a microwave photonic method is designed for phase encoding of single-frequency signals, linear frequency-hopping signals, and pulsed signals.

P4.53

Optical centroid ellipses beyond polarization ellipses, $\ensuremath{\mathsf{Jia}}$

Cheng, Liang Fang, Jinman Chen, Yingjie Zhou, Fan Fan, Lili Miao and Chunjun Zhao; *Hunan Univ., China.* We introduce centroid ellipses that are geometrically mapped from optical orbital angular momentum superpositions on modal Poincaré sphere by coaxial interference.

P4.54

Multi-strategy resource allocation method for satellite networks based on Lyapunov optimization, Chenxu Lu¹, Qi Zhang¹, Xiangjun Xin², Ran Gao², Xiangyu Liu³, Junqing Wu³, Feng Tian¹, Yongjun Wang¹, Qinghua Tian¹, Sitong Zhou¹ and Leijing Yang¹; ¹BUPT, China; ²BIT., China. A Lyapunov optimization-based multistrategy resource allo-cation method for satellite networks is proposed.

P4.55

Tunable Second-Order Microring Resonator with Asymmetric MZI-Based Coupling for Broadband Flat-Top Attenuation, Tao Song, Yu Zhang, Lei Zhang and Xu Yang; Beijing Univ. of Posts and Tel., China; The 54th Research Inst. of China Electron. Tech. Group Corp., China. We demonstrate a tunable second-order microring resonator with MZI-based coupling control.

P4.56

Fiber Channel Modeling via Transformer with Linear Attention and Rotary Position Encoding, Shiyu Dong, Yongjun Wang, Haifeng Yang, Hengda Gao, Shaonan Hong and Qi Zhang; *Beijing Univ. of Posts and Tel., China.* This paper presents a fiber channel model based on Transformer with kernel-based linear attention and rotary position encoding.

P4.57

Hybrid Multiplexed Wavelength Conversion Based on Cascaded SHG/DFG in Aperiodically Poled LN Waveguides, Yihao Jian, Junmin Zou, Zhihao Fang and Shiming Gao; *Zhejiang Univ., China.* An TFAPLN waveguide is presented for wavelength conversion of wavelengthmode hybrid multiplexed signals.

P4.58

All-Optical Image Encryption Using Incoherent Diffractive Neural Networks, Wenbo Zhang¹, Haibo Wang², Zhemg Lee¹, Guanju Peng³ and Zongze Li⁴; ¹Tianjin Univ., China; ²Shanghai Inst. of Satellite Eng., China; ³Huawei Tech. Ltd., China; ⁴Pengcheng Lab, China. We demonstrate that spatially incoherent diffractive deep neural networks can perform arbitrary complex-valued linear transformations.

P4.59

Laser Phase Noise Measurement Using Self-Homodyne Detection and I/Q Demodulation, Yawen Chen, Kunqian Yang, Min Xue and Shilong Pan; *China Nanjing Univ.* of Aero. and Astro., China. A laser phase noise measurement method based on self-homodyne detection and I/Q demodulation is proposed and experimentally demonstrated.

P4.60

Optical Next-Generation Reservoir Computing Enabling Continuous Forecasting of Atmospheric Turbulence Phase, Yifan Wang, Kaiteng Cai, Dongye Xu, Shaoyang Li, Zehui Lu, Wei Lin, Shaoxiang Duan, Hao Zhang, Haifeng Liu and Bo Liu; *Nankai Univ., China.* A scheme for predicting atmospheric turbulence phase using optical Next Generation Reservoir Computing is proposed and experimentally validated.

Poster Session 4 (10:00-10:30)

P4.61

Research on 3D Path Planning Method Combining QRRT* and CHOMP, Fanghao Li, Yi Wang and Tingting Lang; ¹China JiLiang Univ., China; ²Zhejiang Univ. of Sci. and Tech., China. This paper proposes a novel 3D path planning method that effectively combines QRRT* and CHOMP to efficiently generate smooth and collisionfree trajectories.

P4.63

Service Deployment Across Intelligent Computing Centers via Joint Computing Power and Spectrum Trading, Chenwei Cui and Yongcheng Li; Soochow Univ., China. This paper proposes service deployment algorithms across intelligent computing centers.

P4.65

Study on Sensing Technology Based on LRSPR-FPI Coupling,

Xikai Hou, Leiming Wu, Chengpin Wu, Jiaqi Zhu and Xinyong Dong; *Guangdong Univ. Tech., China*. This work proposes a coupled optical fiber sensor that integrates Long-Range Surface Plasmon Resonance (LRSPR) with a Fabry – Pérot Interferometer (FPI).

P4.62

Efficiency Enhancement of Perovskite Solar Cells via Benzylisothiocyanate Passivation, Zhiwen Li, Zugang Liu and Xin Yao; *China JiLiang Univ.*, *China*. This study innovatively employs benzyl isothiocyanate as a novel passivator to perform surface passivation on the abundant defects of 3D perovskite, achieving significant reduction in defect density.

P4.64

Adhesive free packaging method for high stability fiber MEMS sensors based on laser fusion bonding, Haojun Lin, Mei Sang, Shuang Wang, Hongyu Liu, Xuesong Xiang, Junfeng Jiang and Tiegen Liu; *Tianjin Univ., China.* This article proposes a glue free packaging method for fiber MEMS sensors based on laser fusion, which has good data measurement stability.

VIP Room 3, Track 1

10:30-12:00 Th2A. Novel Fibers & Devices VIII Presider: Hu Zhang, Beijing Univ. of Posts and Tel., China

Th2A.1 • 10:30 Invited



Optical fibers and waveguide technology, Xianguang Yang; Jinan Univ., China. The cuttingedge waveguides research of polymer fiber, aggregation-

induced emission fiber, and lotus root fiber. These microfibers act as passive, active and hybrid optical waveguides.

Th2A.2 • 10:50 Invited



Multiband rare-earth doped multimode fiber amplifier, Hu Zhang; Beijing Univ. of Posts and Tel., China.

Th2A.3 • 11:10

China.

Thursday, 31 July

Research on the Application of Hollow Core Fiber in the Construction of Power grid, Li

Deng¹, Bozhong Li¹, Jun Wu², Tong Chen¹, Hongyan Zhou², Yang Li¹, Peng Li², Jun Chu², Yong Xiang², Lei Zhang², Zhiyi Guo¹, Lixin Gu² and Jie Luo²; ¹State Grid Info. & Te. Branch,. China; ²YOFC,

VIP Room 4, Track 6

10:30-12:00

Th2B. Measurement & Imaging VIII Presider: Guoging Wang, Shenzhen Inst. of Info. Tech., China

Th2B.1 • 10:30 Invited

Key Technologies and Applications for High-Precision Large-Scale Rapid 3D Measurement. Yan Shi; China Jiliang Univ., China.

Fiber optic microcavity multi-

parameter sensing technology

fiber optic microcavity multi-

Ultrafast Single-pixel Imaging

based on Compressive Sensing

Guoging Wang¹, Yuan Zhou², E

Du¹, Xingguan Li¹, Jun He³ and

Diffraction.

In-fiber

Chao Wang⁴; ¹Shenzhen Inst.of Info.

parameter sensing technology and

applications in the fields of operando

monitoring of lithium-ion batteries and

Room 205, Special 1

10:30-12:00 Th2C. Organic Optoelectronics X Presider: **Zhijun Ning**, ShanghaiTech University, China

Th2C.1 • 10:30 Invited



High-performance perovskite semiconductor direct X-ray detection and imaging, Yanliang Liu: Shenzhen Inst. of Advanced Tech. CAS, China.

Room 206, PDP

Th2D. Post-Deadline Papers I Presider: Yunhe Zhao, Shanghai Maritime University, China

Th2D.1 • 10:30 🛣

Experimental demonstration of 800Gbit/s self-coherent transmission based on S-band flexible OFC, Xiaolong Zhu, Feng Tian, Xiangjun Xin, Qi Zhang, Haipeng Yao, Qinghua Tian, Fu Wang, Sitong Zhou, Jianwei Zhou and Yutian Li; Beijing Univ. of Posts and Tel., China.

Th2C.2 • 10:50



based on chiral materials,

latest progress in circularly polarized light detectors based on chiral materials.

Th2C.3 • 11:10 Invited

Colloidal quantum dot based upconversion photodetector, Zhiiun Nina: ShanahaiTech Univ., China.

Th2D.2 • 10:45 🕁

Circular polarized light detector Lightweight Neural Network for FBGs Overlapping Spectrum Separation, Longzhen Qiu; Hefei Univ. of Zhengyong Liu, Chaorui Zhang, Jun Hao, Tech., China. We reported our Zigi Liu and Jing Li; Sun Yat-sen Univ., China.

Th2D.3 • 11:00 🕁

QoT-Aware Deep Reinforcement Learning for Dynamic RMSA in EONs, Yixin Wang, Haojie Wang and Jie Zhang; Beijing Univ. of Posts and Tel., China.



Th2B.2 • 10:50 Invited

infrasound measurement.

Th2B.3 • 11:10 Invited

and

Tech., China.

10:30-12:00

Room 210, Special 1

10:30-12:00 Th2E. Organic Optoelectronics VIII Presider: Lian Duan, Tsinghua University, China

Th2E.1 • 10:30 Invited



Narrowband Emitters for OLEDs with BT 2020 Color Gamut, Lian Duan; Tsinghua Univ., China.

Room 211, Track 5

10:30-12:00 Th2F. Optical Signal Processing IV Presider: Jianghai Wo, Jinan University, China

Th2F.1 • 10:30 Invited

Photonics-assisted radar detection and recognition for small targets, Pei Zhou; Soochow Univ., China.

Room 212, Speical 4

10:30-12:00 Th2G. Optical Biosensors II Presider: Francesco Chiavaioli, National Research Council of Italy

Th2G.1 • 10:30 Invited



Fiber-optic theranostics, Yang Ran; Jinan Univ., China.

Room 215, Track 2

10:30-12:00 Th2H. Optical Transmission VII Presider: Kaihui Wang, Fudan University, China

Th2H.1 • 10:30 Invited

Th2H.2 • 10:50 Invited

Low-Power



Key techniques for high-speed optical coherent communications, Jing Zhang; Univ. of Electronic Sci. and Tech. of China., China.

Design of Low-Complexity and

Processing Circuits for Optical

Communication, Kaihui Wang;

Fudan Univ., China.

Digital

Th2E.2 • 10:50 Invited



Deep-blue MRTADF-OLED with Narrowband Emission Towards BT.2020 Standard. Runda Guo. Hanrui Su, Shan Huang and Lei Wang; Huazhong Univ. of Sci.

and Tech., China. It demonstrated strategy advances the design development of deep-blue MR-TADF emitters meeting the BT.2020 color standard.

Th2E.3 • 11:10 Invited



recovery of pulsed signals based on non-Colloidal quantum-well lightemitting diodes. Baiquan Liu: synchronized linear optical sampling. Sun Yat-sen Univ., China. Chengda Huo, Feng Tian, Chuanji Yan, Herein, device engineering in Qi Zhang, Yongjun Wang, Qinghua Tian, colloidal guantum well LEDs Fu Wang and Meng Qiu; Beijing Univ. of

have been comprehensively discussed. Posts and Tel., China.

Th2F.2 • 10:50 Invited

Th2F.3 • 11:10

Chip-scale photonic integrated multifunctional microwave radar, Jianghai Wo; Jinan Univ., China.



Th2G.2 • 10:50 Invited The integration of cytosensing and therapy using the fiber opticbased LSPR. Zewei Luo: Sichuan Univ., China. A novel sandwich laver of PDA/AuNPs/PDA, coated around the Ω -shaped fiber optic $(\Omega$ -FO) was designed.

Th2G.3 • 11:10 Invited



Ultra-low detection limit optical biochemical sensor based on AuNPs enhanced fiber surface plasma, Changyu Shen; China Jiliang Univ., China.

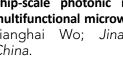
Th2H.3 • 11:10 Invited



High-speed low-cost IM/DD short-reach optical interconnects enabled by advanced DSP. Zhaopeng Xu; Pengcheng Lab, China.

Thursday, 31 July

Signal



Repetition frequency extraction and

VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Special 1

Room 206, PDP

Th2A.4 • 11:25

Based on Nonlinear Polarization Rotation and Power Amplification, Jing Zhang, Feng Tian, Jianwei Zhou, Xingyu Wu, Qi Zhang, Qinghua Tian, Fu Wang and Chuanji Yan; Beijing Univ. of Sci. and Tel., FUNA Technology CO., Ltd., China. In China. An NPR-based mode-locked this paper, a comprehensive multi-TDFL centered at 1895 nm was experimentally demonstrated.

Th2A.5 • 11:40

Transmission and Characteristics of Rectangular Pulses, Danyang Wang, Enfan Zhou, Lei Huang, Boxin Li, Yi Liu, Dongfang Jia, Chunfeng Ge, Zhaoying Wang and Tianxin Yang; Tianjin Univ., China. This paper investigated the effects of transmission the rectangular pulse evolution based manner. on a passively mode-locked erbiumdoped fiber laser.

Th2B.4 • 11:30

Mode-Locked Thulium-Doped Fiber Laser Comprehensive Performance Assessment of Coherent **Φ-OTDR** Implementation **Schemes,** Chunye Liu¹, Jialin Jiang² and Zinan Wang¹; ¹Univ. of Electronic Sci. and Tech. of China, China; ²Chongging dimensional performance evaluation for phase-demodulated Φ -OTDR is conducted.

Th2B.5 • 11:45

Optical-Amplification Smart insoles: Monitor sole pressure based on surface array Fiber Bragg Grating, Yihao He, Qiang Ling, Chenning Tao, Zhangwei Yu and Daru Chen; Zhejiang pressure based on surface array fiber

Th2C.4 • 11:30 Invited Low-Voltage Flexible Organic Transistors for Sensing and Memory Applications, Zhigang Yin; Chongging Univ., China.

Th2C.5 • 11:50

Position Prediction Method for Fiber **Disturbance Based on Semiconductor Laser** Reservoir Computing, Nian Fang and Yiwen Shen; Shanghai Univ., China. A Normal Univ., China. An intelligent disturbance position prediction method insole system for monitoring foot is proposed based on a regression model of semiconductor laser reservoir fiber parameters and the gain of the gratings. This system can analyze gait in computing and time-domain feature erbium-doped fiber amplifier (EDFA) on a portable, cost-effective and real-time extraction for an in-line Sagnac distributed optical fiber sensing system.

Th2D.4 • 11:15 🙀

Demonstration of Hierarchical SDN-based Hybrid Forwarding-Negotiation Relay Strategy for End-to-End Key Provisioning in Satellite Quantum Key Distribution Networks, Jingjing Liu, Xiaosong Yu, Yuan Cao, Avishek Nag, Yongli Zhao and Jie Zhana: Beijing Univ. of Posts & Tel., China.

Th2D.5 • 11:30 🕁

831 Gbps Optical Interconnect for Data Centers Based on PDM-WDM Visible Light Communication System, Zhilan Lu, Xinyi Liu, Yunkai Wang, Zengyi Xu, Chao Shen, Junwen Zhang and Nan Chi; Fudan Univ., China.

Th2D.6 • 11:45 🙀 1550nm linear cavity spatiotemporal modelocked laser based on tapered fiber saturable absorber, Xiuguan Li, Wengi Ma, Yi Qin and Guijun Hu; Jilin Univ., China.

12:00-13:30 Lunch Break

Room 210, Special 1

Room 211, Track 5

Room 212, Special 4

spectroscopy and imaging for

photoacoustic

Room 215, Track 2

Th2E.4 • 11:30

Novel printable hole-transport materials for large-scale flexible organic light emitting diodes, Hao Yan and Hong Meng; Peking Univ. Shenzhen Graduate School, China. In this study, we synthesized a novel printable hole transport material (HTM) HT-1, addressing critical challenges in current OLED technology.

Th2E.5 • 11:45

Regulation of energy band and luminescence properties in lead halide perovskite materials via lattice strain. Bo Qiao; Beijing Jiaotong Univ., China. The lattice strain was regulated. Their electrical structure, formation energy and ion migration activation energy were calculated.

Th2F.4 • 11:25

Th2F.5 • 11:40

Spurious-Free Dynamic Range Measurement for Optical Coherent Transmission Links, Lin Yuan, Kungian Yang, Min Xue and Shilong Pan; Nanjing Univ. of Aero. and Astro., China. A spurious-free dynamic range (SFDR) measurement method is proposed for optical coherent transmission links.

Time-frequency information processing

method for negative signal-to-noise ratio

signal based on microwave photonic real-

time spectrum system, Qinggiong Tan,

Boyang Ni, Yu Zhang, Dan Zhu, Rontian

Jiang, Yehui Qin and Shilong Pan;

Nanjing Univ. of Aero. and Astro., China.

A waveform extraction and time-

frequency information processing method

for negative signal-to-noise ratio signal

spectrum system is proposed and

experimentally demonstrated.

Th2G.4 • 11:30 Invited Fiber-optic



Jinan Univ., China. The fusion of fiber-optic sensing with photoacoustic effect brings new possibilities advance to the photoacoustic spectroscopy and imaging techniques.

Th2G.5 • 11:50

Soft Hands Integrated with Fiber Bragg Grating for Surface Recognition and Reconstruction, Lingyu Wang, Yang Li, Yiwen Tang, Wentao Zhu, Qiang Ling and Zhangwei Yu; Zhejiang Normal Univ., China. A soft robotic hand with fiber Bragg gratings demonstrates highprecision surface recognition and reconstruction by capturing object features and generating an isomorphic based on microwave photonic real-time depiction.

Th2H.4 • 11:25

Multi-Objective Marine Predator Routing in MEO-LEO Cross-Layer Satellite Optical biomedical applications, Jun Ma; Networks, Xiaoke Sun¹, Haicheng Li¹, Yanyan Xie¹, Pengfei Lv², Zihao Qin¹, Lei Shi¹, Bin Liu¹ and Ruijie Zhu¹; ¹Zhengzhou Univ., China; ²Songshan Lab, China. We propose an improved multi-objective routing method based on marine predator algorithm in MEO-LEO cross-layer satellite optical networks.

Th2H.5 • 11:40

QoS-Guaranteed Energy-Efficient Routing in Satellite Optical Networks, Shaobo Qin, Zihao Qin, Lilong Zhou, Yinghao Tong, Yanyan Xie, Haicheng Li, Xiaoke Sun and Ruijie Zhu; Zhengzhou Univ., China. This paper proposes a QoS-guaranteed energy-efficient routing algorithm in LEO satellite optical networks.

12:00-13:30 Lunch Break

VIP Room 3, Track 1

13:30-16:00 Th3A. Novel Fibers & Devices IX Presider: Cong Zhang, Guangdong University of Technology, China

Th3A.1 • 13:30 Invited



High performance fusion splicing technology for anti-resonant hollow-core fiber, Cong Zhang; Guangdong Univ. of Tech., China. We briefly reviewed our

progress in the fusion splicing of hollow core fiber (HCF) and proposed a new type of heterogeneous fusion splicing and fast homogeneous fusion splicing technology.

Th3A.2 • 13:50 Invited



Dispersion turning point shift of interferometric fiber sensor based on spatial frequency conversion, Xiaohui Fang; Guangzhou Univ., China.

Th3A.3 • 14:10 Invited



Completely quantifying and reconstructing fiber-based higherorder modal group evolution on SU(4) Poincaré hypersphere by centroid geometric mapping,

Liang Fang; Hunan Univ., China.

VIP Room 4, Track 6

13:30-16:00

Th3B. Measurement & Imaging IX Presider: Yunlong Zhu, Harbin Engineering University, China

Th3B.1 • 13:30 Invited

Th3B.2 • 13:50 Invited

improved

scheme with

Th3B.3 • 14:10

procedure.

Unlocking the ionic transport dynamics of Li(Na)-ion batteries via operando optical fiber grating spectroscopy, Fu Liu; Northwestern Polytechnical Univ., China.

modified

High-Sensitivity Microbend Sensor Based

on Light Cones in Coreless Fiber. Yu Zhona,

Lei Chen, Junhua Huang, Lina Ma, Shiqi

Hu, Chao Shen, Ying Chen, Yaofei Chen,

Gui-Shi Liu, Yunhan Luo and Zhe Chen;

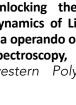
Jinan Univ., China. This study reveals

eigenmode expansion (EME) challenges causality in multimode waveguides.

Room 205, Track 4

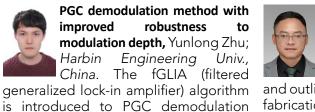
13:30-16:00 Th3C. Optoelectronic Integration VIII Presider: Yin Xu, Soochow University, China

Th3C.1 • 13:30 Invited



silicon waveguide filter enabled by low-loss phase change material, Yin Xu; Soochow Univ., China. We propose a nonvolatile and erasable silicon waveguide filter based on the low-loss phase change material Sb2Se3.

Th3C.2 • 13:50 Invited



filterina

Co-packaged optics based on glass substrate, Guoliang Chen; XiDian Hangzhou Inst. of Tech., China. This paper discusses advanced CPO technologies and outlines future directions for design, fabrication using femtosecond laser and glass.

Th3C.3 • 14:10

Detection characteristics of multi-sensor in railway scenes, Yuqiang He¹, Hao Sun², Zhicheng Han², Jinyao Guo², Yunxu Sun* and Wei Liu*; ¹Guoneng Shuohuang Railway Development Co., Ltd., China; ²Harbin Inst. of Tech. Shenzhen, China

Room 206, PDP

13:30-16:00 Th3D. Post-Deadline Papers II Presider: Yunhe Zhao, Shanghai Maritime University, China

Th3D.1 • 13:30 🙀

On-chip nonvolatile and erasable Wavelength-Swept Green Random Laser for Beam Steering, Wenwen Cheng, Jun Ye, Lei Du, Siyu Chen, Yanzhao Ke, Jiangming Xu, Jinyong Leng and Pu Zhou; National Univ. of Defense Tech., China.

Th3D.2 • 13:45 🙀

Kilowatt-Level Narrow-Linewidth Cascaded Raman Fiber Laser Enabled by Stochastic Grating Feedback, Xiulu Hao, Bangwen Yin, Shanmin Huang, Chenchen Fan, Tianfu Yao, Jinyong Leng, Bing Lei and Pu Zhou: National Univ. of Defense Tech., China.

Th3D.3 • 14:00 🙀 **Cluster Target Detection with Broadband** Microwave Photonic MIMO Radar. Yuewen Zhou, Fangzheng Zhang and Shilong Pan; Nanjing Univ. of Aero. and Astro., China.

Room 210, Special 1

13:30-16:00 Th3E. Organic Optoelectronics IX Presider: Wei Chen, Huazhong Univ. of Sci. and Tech., China

Th3E.1 • 13:30 Invited



Stability Study of Inverted Perovskite Solar Cells. Wei Chen: Huazhong Univ. of Sci. and Tech., China.

Room 211, Track 7

13:30-16:00 Th3F. Ultrafast & Nonlinear V Presider: Lili Miao, Hunan University. China

Th3F.1 • 13:30 Invited

Strong THz generation and its application in vibrational induced emission. Lu Sun: Nankai Univ., China. The talk will introduce the THz generation studies from filamentation and the fluorescence

change induced by strong THz pulses.

Room 212, Special 4

13:30-16:00 Th3G. Optical Biosensors III Presider: Hongbao Xin, Jinan University, China

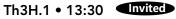
Th3G.1 • 13:30 Invited



Characterization of Selenium-Containing Metallodrugs, Li Ma; Jinan Univ., China.

Room 215, Track 8

13:30-16:00 Th3H. Wireless Communication II Presider: Yi Wang, China Jiliang University, China





The role of microcavity photonics in the construction of nextgeneration measurement standards, Yi Wang; China Jiliang University, China.

Th3E.2 • 13:50 Invited

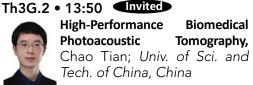


Interface engineering for perovskite solar cells, Jinbao Zhang; Xiamen Univ., China.



Th3F.2 • 13:50 Invited

Single-shot full-field characterization over femtosecond pulses via linear spectral interferometry, Guoging Pu; Shanghai Jiao Tong Univ., China



Th3H.2 • 13:50

Biomedical

Tomography,

High-resolution

Dual-Mode Index Modulation Aided FBMC for Opitcal Wireless Communications, Xuan Chen, Minghua Cao, Yue Zhang and Huigin Wang; Lanzhou Univ. of Tech., China.

Th3E.3 • 14:10 Invited



Defect Engineering via Ag and Na Co-doping in Wide-Bandgap CIGS: From Interfacial Suppression to Bulk Enhancement, Weimin Li; Shenzhen Inst. of Advanced

Tech., CAS, China. We propose a Nadepletion strategy (30% lower than the standard Aq-alloyed CIGS Na baseline) under Ag doping.

Th3F.3 • 14:10 Invited

spatiotemporal **High-energy** mode locked laser via multitransverse-mode division control technique, Wengi Ma; Jilin Univ., China. We propose а

transverse mode division control technique using a mode MUX/DEMUX to independently control dispersion.

Th3G.3 • 14:10 Invited



Quantitative Functional Photoacoustic/Ultrasound Microscopy. Jingyi Zhu; City Univ.of Hong Kona, HK.

Dual-modal

We have developed a dual-mode high-resolution quantitative functional photoacoustic/ultrasound microscopy.

Th3H.3 • 14:05

Evaluation of Performance and Device Complexity of Simplified Coherent Free-Space Optical Communication for Inter-Satellite Link, Zigi Tang, Penghao Luo, Guojin Qin, Fang Dong, Yingjun Zhou, Junwen Zhang, Nan Chi, Jianyang Shi and Ziwei Li; Fudan Univ, China; Shanghai Engineering Research Center of Low-Earth-Orbit Satellite Comm. and Applications, China.

VIP Room 3, Track 1

VIP Room 4, Track 6

Room 205, Track 4

Room 206, PDP

Th3A.4 • 14:30

Passive Q-switched mode-locked Yb-doped Fiber Laser based on Nonlinear Polarization Rotation, Jianwei Zhou, Feng Tian, Jing Zhang, Jue Wang, Yutian Li, Chuanji Yan, Qi Zhang, Qinghua Tian, Fu Wang and Xingyu Wu; Beijing Univ. of Posts & Tel., China. We report a Yb-doped fiber laser based on NPR, and conducts a detailed study.

Th3A.5 • 14:45

Dual-Wavelength Switchable Square-Wave Passively Mode-Locked Erbium-Doped Fiber Laser in the L Band, Yi Liu, Dongfang Jia, Lei Huang and Boxin Li; Tianjin Univ., China. An L-band dual-wavelength switchable. passivelv mode-locked erbium-doped fiber laser based on figure-9 cavity is reported.

Th3A.6 • 15:00

Impact of splicing parameters on the performance of periodically spliced fiber grating sensor, Min Li, Wenbin Luo and Renlai Zhou; Harbin Engineering Univ., China. We investigate the influence of splicing parameters on the performance of periodically spliced fiber grating sensor.

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L-band Ring-core Erbium/ytterbium Codoped Fiber Amplifier Supporting Orbital Angular Momentum Modes, Jiaqi Wang, Hu Zhang, He Wen, Shengxi Zeng and Xiaoquang Zhang; BUPT, China. A ringcore erbium-ytterbium co-doped fiber amplifier is proposed to amplify 10 orbital angular momentum modes.

Th3B.4 • 14:25

plasmon resonance effect utilizing hollowcore negative curvature fiber, Weixuan Zhang¹, Yuwei Qu², Jingao Zhang¹, Zefeng Li¹, Lan Rao¹, Kuiru Wang¹ and Jinhui Yuan¹; ¹BUPT, China; ²Hengshui Univ., China. A hollow-core negative curvature fiber refractive index sensor based on surface plasmon resonance effect is proposed.

Th3B.5 • 14:40

Highly sensitive methane sensor based on ZIF-8/PDMS functionalized Fabry-Perot interferometer, Rujun Zhou, Qiang Ling, Zhangwei Yu and Daru Chen; Zhejiang Normal Univ., China. A highly sensitive methane sensor is proposed.

Th3B.6 • 14:55

A Non-Destructive Detection Method for Heterogeneous OPGW Cables Based on Backpropagation Neural Network. Jing Song¹, Xiaowei Ding¹, Fei Cheng¹, Xuvang Chen¹, Qichao Ru² and Yi Xiao²; ¹Zhejiang HuaYun Electric Power Eng. Design & Consult. Co., Ltd., China; ²Shanghai Maritime Univ., China.

Th3B.7 • 15:10

OPGW Testing Under Diverse Stimulated Factors Using Convolutional Neural Networks, Jing Song¹, Xiaowei Ding¹, Fei Cheng¹, Li Chen¹, Yi Xiao² and Qichao Ru²: ¹Zheijang HuaYun Electric Power Eng. Design & Consult. Co., Ltd., China; ²Shanghai Maritime Univ., China.

Th3C.4 • 14:25

A refractive index sensor based on surface Simulation of Intrinsic Timing Jitter in Inhomogeneous NbN Nanostrip Photon Detectors, Chang Xu and Xiaolong Hu; Tianjin Univ., China. We simulate photontriggered vortex dynamics in an inhomogeneous NbN nanostrip.

Th3C.5 • 14:40

High-Accuracy Operando Monitoring of State of Charge for Lithium Battery Based on Distributed Fiber Bragg Grating and Machine Learning, Kang Yang, Guoyu Li, Yan Li, Shuo Liang and Sumei Jia; Handan Univ., China. Multi-point temperature monitoring is achieved in real time and gas pressure.

Th3D.4 • 14:15 🕁

Heterogeneously Integrated Thin-Film Lithium Niobate Modulator for Reducing Half-Wave Voltage, Jun Xue, Xiaofeng Liu, Ou Xu, Di Peng, Shuoyang Qiu, Xinyong Dong, Yuwen Qin and Quandong Huang; Guangdong Univ. of Tech., China.

Th3D.5 • 14:30 🙀

Ultra-broadband Mode Switch based on **Cascaded Multimode Interference Couplers,** Kedi Peng, Bin Xiao, Kaijian Zhang, Jiagi Ran, Ou Xu, Di Peng, Shuoyang Qiu, Xinyong Dong, Yuwen Qin and Quandong Huang; Guangdong Univ. of Tech., China.

Room 210, Special 1

Th3E.4 • 14:30 Invited



Stable organic SAM materials for perovskite photovoltaics, Chuanjiang Qin; Changchun Inst. of Applied Chemistry, CAS, China.



Th3F.4 • 14:30 Invited

Room 211, Track 7

Ultrafast optical response and efficient wavelength conversion in epsilon-near-zero thin film, Lili Miao; Hunan Univ., China.



Th3G.5 • 14:50 Invited

Room 212, Special 4

Room 215, Track 8

Th3H.4 • 14:20

PCR

Low Encryption Penalty LEO-to-Earth Secure Laser Communication Based on Quantum Noise Stream Cipher, Ziyan Chen, Yajie Li, Kongni Zhu, Yuang Li, Shuang Wei, Yongli Zhao and Jie Zhang; BUPT, China.

Th3H.5 • 14:35

A Ground Testing System for Spaceborne ATP Systems Based on Dynamic Spot Tracking, Diyue Pang, Gaofei Sun, Xu Guo and Wei Wang; Changchun Univ. of Sci. and Tech., China

Th3H.6 • 14:50

An Edge-Aware Graph Attention and Transformer Network for LEO Satellite **Optical Networks Traffic Prediction**, Zihao Qin¹, Shaobo Qin¹, Pengfei Lv², Yajuan Qin¹, Yanyan Xie¹, Xiaoke Sun¹ Haicheng Li¹ and Ruijie Zhu¹; ¹Zhengzhou Univ., China; ²Songshan Lab, China.

Th3H.7 • 15:05

Distributed Cross-Domain Service Function Chains Deployment in Satellite Optical **Networks,** Haicheng Li¹, Xiaoke Sun¹, Yixiang Zhang¹, Pengfei Lv², Kecai Chen¹, Yanyan Xie¹ and Ruijie Zhu¹; ¹Zhengzhou Univ., China; ²Songshan Lab, China.

Th3F.5 • 14:50 Planar chiral resonant metasurfaces in both linear and nonlinear regime, Zi-Lan Deng, Xin Li and Meng-Xia Hu; Jinan Univ., China.

Th3F.6 • 15:05

Quantum Noise Calculation in a Soliton Microcomb with Over 1000x Computational Speedup, Xinran Wang, Zhe Kang and Jijun He; Nanjing Univ. of Aero. and Astro., China.

Th3F.7 • 15:20

Vector fractional-soliton in an erbiumdoped fiber laser, Wenbin Luo, Ye Li and Renlai Zhou; Harbin Engineering Univ., China.

Th3F.8 • 15:35

Pulsating soliton with synchronized and unsynchronized resonant dispersive waves, Mengmeng Han, Xingliang Li and Shumin Zhang; Harbin Normal Univ., China.



DNA detection.

cardiovascular diseases assessment, Lili Liang; Handan Univ., China. We demonstrated fiber biosensors with simplified

Label-free Fiber optic sensors for DNA detection, Jiale Xie, Kai

Zhang and Hongdan Wan; Nanjing Univ. of Posts and Tel., China. Tapered two-mode

fiber interferometer with diameter a of

12.5 μ m is fabricated for label-free

nanomaterial modification and bioprobe functionalization for myocardial biomarker detection, wearable fiber optic pulse wave detectors, etc.

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А		Suxuan Cao	-	P2.37, P1.29	Liangtao Chen	-	W1H.2, W1H.3
Sabrina Abedin	- W2B.5	Xingwang Cao	-	P4.35	Liming Chen	-	P3.49
Yuxuan Ai	- P3.45, P3.54	Yaoyu Cao	-	Tu3D.2	Ling Chen	-	W4G.6, P3.63, P1.40
Zhiyuan An	- P4.28	Yihui Cao	-	W1B.8	Liyu Chen	-	P4.25
Jose Azana	- W1F.1	Yuan Cao	-	Th2D.4, P1.27	Na Chen	-	P2.45
Р		Zhenjin Cen	-	P2.11	Pengshi Chen	-	W1C.5
В	- 4 4 6	Furong Chai	-	P4.39	Qingtao Chen	-	W4C.6, Th1C.5
Dexin Ba	- P1.16	Yutong Chai	-	W1G.3	Quan Chen	-	P1.6
Chenglin Bai	- Th1C.5	Huan Chang	-	P1.52, P2.20	Quankang Chen	-	P4.31
Junjie Bai	P1.21, P1.24, P2.30,	Jinyong Chang	-	Tu3D.1	Ruifeng Chen	-	P1.7
-	P3.55	Mingyu Chang	-	W3G.6	Rui-Pin Chen	-	P4.10
Xueqian Bai	- P3.21	Yanming Chang	-	P3.61	Shanshan Chen	-	W1B.8, P1.12
Yiming Bai	- P2.56	Junxian Chao	-	P1.40	Shengchao Chen	-	W1B.4
Hualong Bao	- W4A.5	Meng Chao	-	W2C.4	Shilong Chen	-	W2F.5
Yangang Bi	- Tu3E.2	Antai Chen	-	P1.48	Siyu Chen	-	Th3D.1, Tu3F.5
Ryszard Buczynski	- Tu3A.2	Baile Chen	-	W3C.4	Siyuan Chen	-	P2.12, P2.52
С		Changqing Chen	-	W1E.6	Tong Chen	-	Th2A.3, W1C.5, P2.8
Chi Cai	- P2.11	Chaoxu Chen	-	W1H.1, W2G.3, W1F.7	Tuo Chen	-	Th1C.6
Guoyuan Cai	- P4.21	Daru Chen	-	W2B.4, Th2B.5, Th3B.5	Wei Chen	-	Th3E.1
Haiwen Cai	- W1H.1	Fuchang Chen	-	P2.9, P4.25	Wen Chen	-	W1F.3
He Cai	- P3.28	Guoliang Chen	-	Th3C.2, P2.29, P4.27	Xiangfei Chen	-	W4C.5, W3B.1, P4.3
Kaijun Cai	- P2.30	Jiageng Chen	-	W1B.6, P3.61	Xiaoliang Chen	-	Tu3G.1
Kaiteng Cai	- P4.60	Jian Chen	-	P3.52	Xuan Chen	-	Th3H.2
Mengru Cai	- W1G.3, W1G.4	Jianrong Chen	-	P3.62	Xuyang Chen	-	Th3B.6
Shen Cai	- P1.40	Jiawang Chen	-	P3.62	Yanan Chen	-	P2.56
Yifan Cai	- P1.23	Jie Chen	-	P2.49, P2.33, P4.9	Yaofei Chen	-	Th3B.3
Yuancheng Cai	- Tu3H.5	Jiefei Chen	-	W1D.6	Yawen Chen	-	P4.59
Zongyang Cai	- W1C.7	Jiewei Chen	-	P1.47	Yifan Chen	-	W3G.6
Bingyao Cao	- P1.44	Jing Chen	-	P2.44	Ying Chen	-	Th3B.3
Fengyu Cao	- P3.45, P3.54	Jinman Chen	-	P4.53	Yu Chen	-	P4.47
Jie Cao	- P3.11	Junjin Chen	-	P3.26	Yuting Chen	-	P1.32
Junfeng Cao	- Tu3G.3	Junsong Chen	-	Tu3H.4	Yutong Chen	-	W1C.5
Lidan Cao	- W2B.5	Kecai Chen	-	Th3H.7	Yuzhuo Chen	-	P2.32
Lucas Cao	- W2B.5	Keng Chen	-	P2.30	Zefeng Chen	-	P3.18
Minghua Cao	- Th3H.2	Lanling Chen	-	W4G.6, P3.63	Zhe Chen	-	Th3B.3
Qiuyang Cao	- P1.62	Lei Chen	-	Th3B.3	Zhenxing Chen	-	Tu3F.6
Shuang Cao	- P2.42	Li Chen	-	Th3B.7	Zhihong Chen	-	W1B.1
5							

Zhiwu Chen Zhiyuan Chen Ziyan Chen Fei Cheng Jia Cheng Wenwen Cheng Yafeng Cheng Yichen Cheng Yijie Cheng Zhenzhou Cheng Mohamed Cheriet	 P2.53, P4.23 P3.65 Th3H.4 Th3B.6, Th3B.7 P4.53 Th3D.1, Tu3F.5 P2.21 P1.21, P3.55 P1.62 W4B.2, P4.4, P1.11, P1.2, P2.28, P2.62 W1G.5 	Ning Deng Ruonan Deng Zi-Lan Deng Decheng Ding Junqiao Ding Lei Ding Mengjiao Ding Muchen Ding Penghao Ding Xiaowei Ding Zhewen Ding	 Tu3G.5 Tu3D.5 Th3F.5 P1.55 Tu3E.3 P1.33, P1.34, P1.35, P1.37 P3.11 P2.1 P2.28, P2.62 Th3B.6, Th3B.7 P2.60 	Lei Du Yicheng Du Yu Du Lian Duan Maosheng Duan Shaoxiang Duan Shenxing Duan Shuonan Duan Xiaofeng Duan	 Th3D.1, Tu3F.5 W2C.4 P2.28, P2.62 Th2E.1 P2.7 P3.25, P4.24, P4.60 P1.10 P4.16 Th1C.5, P2.31, P3.13, P2.23, P2.36, P3.12, P3.59, P1.58, P3.17, P3.19, P1.9
Nan Chi	Th2D.5, W1H.1, W1H.2, - W1H.3, W2G.3, W1F.7, Th3H.3, P2.53, P4.23	Zirui Ding Bo Dong Boyu Dong	- P2.26 - W3A.6 - W1H.2, W1H.3, W1F.7	Zerong Duan E	- W2C.4
Francesco Chiavaioli	- Th1G.1	Fang Dong Jianji Dong	- Th3H.3, P2.41 - Tu2C.4	Sławomir Ertman	Tu3A.4, W2A.5, W1C.6, W1C.7, W1C.8, Tu3D.4
Jun Chu	- Th2A.3, P2.8	Lei Dong	- P2.21	F	
Tao Chu	- Tu2C.3	Ruifang Dong	- P2.41	Chenchen Fan	- Th3D.2
Chenwei Cui	- P4.63	Shiyu Dong	- P4.56	Enbo Fan	- W1B.2
Jiabin Cui	- Th1F.7		Th3D.4, Th3D.5, W2A.5,	Fan Fan	- P4.53
Nan Cui	- W4H.6, P4.7, P1.8		W1C.6, W1C.7, W1C.8,	Gang Fan	- P1.4
Xiaohan Cui	- P4.28	Xinyong Dong	- W1B.7, Tu3D.4, P2.13,	-	P2.24, P3.58, P2.50,
D		, - 0 - 0	P2.35, P1.18, P1.42, P1.56, P3.65, P4.65	Silu Fan	- P3.31, P3.34, P3.36
Daoxin Dai	- Tu2C.1	Yifei Dong	- P2.9	Xing Fan	- Th1E.5
Ruichen Dai	- P4.26	Yongkang Dong	- Tu2B.1, P1.61, P1.16	Xinye Fan	- P2.25
Tingge Dai	- P2.39	Yuke Dong	- P3.65	Yaqiang Fan	- W4C.5, P4.3
Wentao Dai	- P4.16	Tuke Dong	W1B.8, P1.10, P1.12,	Yunlu Fan	- W1B.8, P1.12
Xiaoshuang Dai	- Tu3B.4	Yuming Dong	- P1.56, P3.65	Chunzi Fang	- P3.30
Xingliang Dai	- W3E.4	Ze Dong	- W1H.4, P2.48, P1.52	Jingqi Fang	- P3.62
Vitore Dei	W2F.1, W2F.4, W2F.5,	Ze Dong	P1.33, P1.34, P1.35,	Liang Fang	- Th3A.3, P4.53
Yitang Dai	- Th1F.5	Ziming Dong	- P1.37	Nian Fang	- Th2C.5
Hao Deng	- P1.3	Jinchao Dou	- Tu3B.4	Wenjing Fang	- P2.25
Li Deng	- Th2A.3, P2.8	Changlong Du	- P1.2	Xi Fang	P2.24, P3.58, P2.50,
Mincong Deng	- P3.49	E Du	- Th2B.3	-	P3.31, P3.34, P3.36
Ming Deng	- Th1F.2	Haoqi Du	- P2.63	Xiansong Fang Xiaohui Fang	- Tu3D.6 Th3A.2

Yingjun Fang Zhihao Fang Zili Fang Haixia Feng Jianfeng Feng Jinjian Feng Xiao Feng Zhe Feng Zhen Feng Zhen Feng Hongyan Fu Zhihui Fu Ziyi Fu G Wentao Gai Xuetao Gan Feng Gao Guanjun Gao Hengda Gao Hengdao Gao Shen Gao Shiming Gao Vieiqing Gao Chuan Ge Chunfeng Ge	 W2C.5, P3.3 P4.57 P2.2 Tu3H.4, P4.12 P2.55 Th1F.3, Th1F.4 P4.30, P4.14 P4.39 Tu2F.2 P2.53, P4.23 W2F.4 Tu2H.5, W1C.4, W1B.5, P1.7 P4.37 Tu3F.6, P2.21 P3.50 Th1D.1 W3A.4, P2.10 P2.7 P2.18, P2.19 P4.11, P3.6, P4.56 Th1H.6 W1H.4, P2.43, P2.4, P3.16, P2.12, P2.52, P3.4, P3.44, P2.46, P1.52, P2.20, P1.4, P4.54, P3.15 P3.39 Tu3F.3, P4.57 W1A.3 P1.40, P2.44 Th2A.5, Tu3F.7, P4.16 	Youfu Geng Zechun Geng Huaping Gong Likang Gong Miao Gong Shengye Gong Xiaole Gong Can Gu Jiamei Gu Letian Gu Letian Gu Lixin Gu Rentao Gu Wenhua Gu Zhiqun Gu Bai-Ou Guan Heyuan Guan Heyuan Guan Peng Guan Mo Guang Lili Gui Bingli Guo Bo Guo Chunyu Guo Dong Guo Huiyi Guo Jingjing Guo Jingshu Guo Jingshu Guo Jingashu Guo Kunda Guo Shuai Guo	 P2.28, P2.62 W2A.3 P2.60 P3.17 P1.6 P2.21 W2G.2 P1.50 P3.13, P3.12 W4D.6 Th1C.6, P4.49 W2A.4 Th2A.3 Tu3G.2 W3G.2 P4.48 P2.22 Tu1A.4, P4.34 W2C.1 P1.16 Tu3G.2 W3F.5 Tu3G.4 W3F.3 P1.52 W2A.4 Th1G.5 P1.31 Th3C.3 P3.41 P2.26 Th2E.2 P1.62 	Xinxing Guo Xu Guo Yanhong Guo Zhiyi Guo H Bo Han Dahai Han Jiaxu Han Lei Han Lili Han Longcheng Han Lu Han Mengmeng Han Mengyao Han Qungyu Han Qungyu Han Qun Han Xinyu Han Xinyu Han Xiuyou Han Yaqi Han Yuzhe Han Jiayi Hao Jun Hao Miao Hao Xiulu Hao Yuying Hao Zijian Hao Chengcheng He Jianguo He	 P2.41 Th3H.5 P4.44, P4.43 Th2A.3, P2.8 P2.6, P4.5, P2.40 P2.47 Tu2G.4 W1C.1, W1C.2 P2.59 P3.53 Th1H.6, P2.18, P4.11, P2.19, P3.6 Th3F.8 W3H.6 W1H.2 W4B.2, P4.4 P1.63 W2C.4 W1C.4 P2.59 Th3C.3 P1.52 Th2D.2 W2G.4 Th3D.2 Th1E.4 P2.39 P2.32 P1.19 P4.33 TU3C.1, Th1C.6, P3.7, P4.49
Chuan Ge	- P1.40, P2.44	Manlin Guo	- P2.26 - Th2E.2	-	Tu3C.1, Th1C.6, P3.7,

Juntao He Peichen He Peiran He	- W2A.3 - P1.20 - P2.60	Xiaolong Hu Xiaoyang Hu Xiaqian Hu	 Th3C.4, Th1B.3 P4.13 P2.57 	Yongqing Huang	Th1C.2, Th1C.5, P2.31, P2.56, P3.13, P2.23, - P3.20, P2.36, P3.12,
Xin He Yifan He Yihao He Yihua He Yuqiang He Zongtao He Zuyuan He Jun Hong Shaonan Hong Weijie Hong	 P1.61 Th1H.7 Th2B.5 P1.24, P2.30, P2.34 Th3C.3 W2H.5 W1B.6, P2.38, P3.61 P1.20 Th1H.6, P4.11, P3.6, P4.56 P2.47 	Xuemeng Hu Yakun Hu Yimin Hu Yinyin Hu Zhijia Hu Zhouyi Hu Zhuoran Hu Zonghai Hu Nan Hua Chenxingyu Huang Chufeng Huang	 P2.21 Th1H.3 W1H.7 P1.31 W1A.4 W2H.3 P2.53, P4.23 W1D.5 Tu3G.3 W1C.4 W1F.3 	Yong-Zhen Huang Yu Huang Yunyun Huang Yuting Huang Yuxiang Huang Zhenlin Huang Zhibao Huang Zhipi Huang Zhiqi Huang Zhun Huang	 P3.59, P1.58, P3.17, P3.19, P1.9 Tu3C.2 W1C.4, P4.17 Th1G.3 P3.22 Tu3A.3 P1.1 P3.33 P2.12, P2.52, P3.4, P1.4 Th1H.4
Yang Hong Yifan Hong Yiming Hong Shaocong Hou Weigang Hou	 P1.64 P1.40, P2.44 P1.44 W2E.2 Tu2G.3 	Dongmei Huang Huiling Huang Jiaxin Huang Junchang Huang Junhua Huang	 Tu2F.6 P4.38 W2G.3 P2.32 Th3B.3 	Zihan Huang Zihe Huang Ziming Huang Chengda Huo Jiahao Huo	 P1.21, P3.55 Tu3A.1 P1.1 Th2F.3 W4H.1
Xikai Hou Yangfei Hou Yinyu Hou Bangbi Hu Guijun Hu	 P4.2, P4.65 P1.50, P2.59 W4G.4 P3.57 Th2D.6, Tu2H.3 	Lei Huang Ligang Huang Mingyue Huang	 Th2A.5, Th3A.5, Tu3F.7 W2A.3, W1C.3 P2.42 Th3D.4, Th3D.5, W2A.5, W1C.6, W1C.7, W1C.8, 	J Wanting Ji Wei Ji Yuefeng Ji	 P2.13 Tu2F.1 Tu3G.2, Th1F.7
Hailong Hu Jiajun Hu Jiawen Hu Jun Hu Meng-Xia Hu	- W4E.1 - P3.7 - P2.27 - P3.21 - Th3F.5	Quandong Huang Rui Huang Shan Huang	 W1B.7, Tu3D.4, P2.13, P1.18 P2.42 Th2E.2 W1G.3, W1G.4, P1.39, 	Dongfang Jia Fan Jia Sumei Jia Yihao Jian Chao Jiang	 Th2A.5, Th3A.5, Tu3F.7 P4.24 Th3C.5 P4.57 P2.42, P1.5, P4.38
Mengying Hu Qiang Hu Shiqi Hu Shuling Hu Weida Hu	 P4.26, P3.11 P1.63 Th3B.3 TH1C.4, P4.33 W3D.1 	Shanguo Huang Shanmin Huang Shengyou Huang Tianye Huang Wenjie Huang	 P2.17, P1.25 Th3D.2 P3.52, P4.22 Tu3F.6, W3F.2, P2.21 W1G.7 	Hao Jiang Jialin Jiang Junfeng Jiang Meilei Jiang	 P1.27 Th2B.4 Tu3B.4, W4B.2, P4.4, P4.64 P2.55
Weisheng Hu Xiaofang Hu	W1H.7, Tu3D.3, Tu3D.6, P1.57 - P1.4	Wobin Huang Xiaomin Huang Xiaowei Huang	- W3A.6 - P3.18 - P2.11	Ning Jiang Qinran Jiang	W2H.1, W2C.5, P1.14, P3.10, P3.3 P1.26

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Tong Li	- P3.22	Yong Li	- P3.18	Zuhao Liao	- P2.6, P4.5, P2.40
Tonghui Li	- P3.12	Yongcheng Li	- P4.63	Bogiang Lin	- P1.24, P2.34
Wanrong Li	- W1F.4	Yongliang Li	- Th1D.6	Fuhong Lin	- P3.43
Weimin Li	- Th3E.3	Yongmin Li	- Th1A.6	Guangkuo Lin	- P2.44
Wen Li	- P3.30, P3.39	Yu Li	- P3.19	Haojun Lin	- P1.15, P4.64
Wenyi Li	- P4.22	Yuanfeng Li	- P2.4	Jingyu Lin	- P1.40
, Xian Li	- P2.27	Yuang Li	- Th1H.5, Th1H.7, Th3H.4	Mingrui Lin	- P2.20
Xiang Li	- Tu3F.6, P2.21	Yujia Li	- W2A.3, W1C.3	Shangbo Lin	- P2.22
Xiaolan Li	- P2.15	-	Th2D.1, Th3A.4, W1H.5,	Shenghuang Lin	- Th1D.2
N	Th1C.1, Th3F.5, P1.39,	Yutian Li	- P3.5	Wei Lin	- P3.25, P4.24, P4.60
Xin Li	P2.17, P1.25	Yutong Li	- P1.24, P4.46, P4.44		P1.21, P1.24, P2.30,
Xingliang Li	- W4F.2, Th3F.8	Zefeng Li	- Th3B.4, P2.54	Weihao Lin	- P2.34, P3.38, P3.55
Xingquan Li	- Th2B.3	Zeyu Li	- P1.64	Yue Lin	- W4E.3
Xiuquan Li	- Th2D.6	Zhao Li	W1G.6, W2G.4, W1B.6,	Yuehuan Lin	- P4.44, P4.18
Xu Li	- P2.28, P2.61, P2.62	Zhao Li	- P2.55	Chengzhong Ling	- P3.48
Xuan Li	- W2C.4	Zhi'en Li	- W1C.1, W1C.2	Oiong Ling	Th2G.5, W2B.4, Th2B.5,
Xuejin Li	- P2.28, P2.62	Zhihan Li	- P4.15	Qiang Ling	- Th3B.5
Xueyang Li	- W4H.4	Zhihui Li	- P2.44	Baiquan Liu	- Th2E.3
Xun Li	- Tu3C.3	Zhinoi Li	W1H.4, P2.14, P1.52,	Bi-Heng Liu	- Tu2D.4
Yahao Li	- W1C.6, W1B.7, Tu3D.4	Zhipei Li	- P1.36	Bin Liu	- Th2H.4
Valla Li	W4G.1, Th1H.5, Th1H.7,	Zhiwen Li	- P4.62	Bingkun Liu	- W2C.5, P3.3
Yajie Li	- Th3H.4	Zikang Li	- P2.4	Bo Liu	Th1F.5, P3.25, P4.24,
Yan Li	- Th3C.5	Ziwei Li	- W1H.1, W2G.3, Th3H.3	bu Liu	- P4.60
Vangli	Th1E.1, Th2G.5, Th2A.3,	Zongze Li	- P4.58, P4.20	Changning Liu	- P1.41
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Ye Li	- Th3F.7	Erao Liang	- P3.60, P2.3	Chuanjiang Liu	- P2.56
Yi Li	- P1.17	Lili Liang	- Th3G.6, Tu3D.2	Chungang Liu	- P4.19
Yicai Li	- P2.45	Meng Liang	- W2H.4	Chunye Liu	- Th2B.4
Yicheng Li	- W1F.5	Shi-Jun Liang	- Th1D.4	Dejun Liu	- W3B.5
Yifei Li	- P1.3	Shuo Liang	- Th3C.5	Fu Liu	- Th3B.1, P3.53
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Yigang Li	- P1.37	Yuyuan Liang	- Th1H.5, Th1H.7	Haifeng Liu	- P3.25, P4.24, P4.60
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Yiru Li	- P2.54	Bangquan Liao	- Th1A.2	Haojie Liu	- P4.34

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