2024 22nd International Conference on Optical Communications and Networks (ICOCN 2024)

Harbin, China 26-29 July 2024

Pages 1-441



IEEE Catalog Number: ISBN: CFP24OCN-POD 979-8-3503-6766-9

Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP24OCN-POD
ISBN (Print-On-Demand):	979-8-3503-6766-9
ISBN (Online):	979-8-3503-6765-2
ISSN:	2330-7986

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633 E-mail: curran@proceedings.com Web: www.proceedings.com



TABLE OF CONTENTS

Research on denoising of second harmonic signal in TDLAS based on BOA-VMD method	1
Xiang Zhu, Huacai Chen, Lifu Liu, Qiang Wu and Yugang Zhao	
A Magnetic Field Fiber Sensor Based on Side Hole Fiber Filled with Magnetic Fluid in Fiber Ring	4
Laser Cavity	4
Weihao Lin, Yifan Ye, Jie Hu, Fang Zhao, Jinna Chen, Li-Yang Shao and Perry Ping Shum	
Prediction of tidal flat settlement based on array displacement meter and mamba model	7
Chunying Xu, Chengyu Yang, Yongqiang Ge, Taoyu Wen, Keyan Xiao and Chuliang Wei	
Fiber Mach-Zehnder interferometer for simultaneous measurement of strain and temperature based	10
on misaligned peanut-shape structure	10
Yalong Wei, Wenyan Xu, Xue Liu, Ju Zhou, Yujia Zhao and Bing Wu	
Efficient Fluorescence Coupling Integrated Fiber Magnetometer based on Nitrogen Vacancy Centers	13
Yuhao Li, Li Xia and Junchang Huang	
A Flexible Pressure Sensor based on Chirped Fiber Bragg Grating Array for Vital Signs Monitoring	16
Chang Liu, Ziqi Liu, Juanli Li, Haoen Cai and Zhengyong Liu	
Three-dimensional vectorial magnetic field sensor based on magnetostrictive materials	19
Yan Zuo and Li Xia	
Double-layer secrecy optical communication system incorporating chaotic encryption and signal	22
covert transmission	22
Jiaxi Feng, Xinyi Li, Zhuolin Wen, Yuehua An, Xinyong Dong and Zhensen Gao	
Tapered Single-mode Optical Fiber pH Sensor coated with Hydrogel working at the dispersion	25
turning point	25
Xue Liu, Wenyan Xu, Yalong Wei, Ankang Chen, Jing Li, Dunyou Liang, Bing Wu and Yujia Zhao	
Analysis of Influencing Factors in Quantum Neural Network for Solving Classification Problem	28
Jing Wang, Meng Zhang, Jun-Sen Lai and Fang Li	
Principal Modes and Anti-principal Modes of Curved Multimode Fibers	31
Jiawei Xu, Lele He and Xiaosheng Xiao	
High-resolution spatial speckle reconstructive spectrometer based on random reflection	34
Zhipeng Guo, Long Zhang and Daoxin Dai	
Research on Submarine Cable Anchor Damage Monitoring Technology Based on a hybrid Brillouin	27
and Rayleigh Distributed Sensing System	37
Yining Zhang, Xiaohui Tang, Meng Xia, Yilong Huang, Zhenjin Cen, Yu Han, Hongwei Li and Yongkang	
Dong	
A GSST functionalized microring resonant cavity for photonic memory	40
Jianwu Yu and Yinping Miao	
Experimental Demonstration of Short-reach C-Band 44.112 Tbps Coherent Optical Transmission	42
with S- and L-Band Dummy Channels Based on PS-4096-QAM	43
Yutian Li, Feng Tian, Jianwei Zhou, Tianze Wu, Xiaolong Zhu, Qi Zhang, Qinghua Tian, Fu Wang, Zhipei	
Li and Xiangjun Xin	
Flexible Fiber Bragg Grating Array for Robotic Finger Tactile Sensing	46
Bo Dong, Zongyu Chen, Yulong Wang and Wobin Huang	
A Highly Efficient Unsupervised Recognition Method For Fiber-optic DAS With Spiking	40
Convolutional Neuron Network (SCNN)	49

Haibei Liao, Dengke Gan, Chenrui Xu, Huijuan Wu and Yunjiang Rao	
Intensity-interrogated hot-wire anemometer based on cobalt-doped fiber Bragg grating	52
Langzhe Du, Yuhan Tang, Pengbai Xu, Jun Yang and Xinyong Dong	
Weighted Blind Phase Search Algorithm for a PS-QAM Coherent Optical Communication System	55
Ya Zhou, Qi Zhang, Qihan Zhao, Yun Wang, Gang Xin, Xinyu Yuan, Yi Zhao, Feng Tian, Fu Wang,	
Qinghua Tian and Yongjun Wang	
Joint Optimization of Working and Protection Paths for RSA in Mixed-grid Optical Networks	58
Yaping Li, Zhijun Zhang, Peng Xie, Congying Zhang, Yuhang Liu, Xiaosong Yu and Yongli Zhao	
Positioning Approach in Fiber Vibration Sensing System Based on Time-Frequency Features	61
Zhenshi Sun, Hao Guo, Deyu Sun and Siyuan Li	
A Subset Quadratic Mapping PS-TCM Scheme Based on Huffman Coding	64
Qingdong Gong, Jinkun Jiang, Qi Zhang, Ran Gao, Xiangjun Xin, Xinyu Yuan, Qihan Zhao, Yi Zhao, Feng	
Tian, Qinghua Tian, Yongjun Wang and Fu Wang	
Secure Key Distribution Based on Dynamic Chaos Synchronization of Semiconductor Laser	(7
Networks	67
Meizhi Che, Ning Jiang, Anran Li, Huanhuan Xiong and Kun Qiu	
Single-polarization Hollow Core Antiresonant Fiber With Nested Cladding Tubes	70
Xiaotian Yao, Qiang Liu, Guangrong Sun, Shuhui Wei, Xinrui Li, Wei Liu, Jingwei Lv and Chao Liu	
Orbital Angular Momentum Erbium Doped Fiber Amplifier Based on Hybrid Cladding Ring-Core	= 2
Fiber	73
Shengxi Zeng, Jiaqi Wang, Jing Yang, Hu Zhang, Lixia Xi and Xiaoguang Zhang	
FPGA-Based Multi-Pulse Laser Ranging System	76
Lei Zhang, Qihao Huang, Tingting Lang and Yanqing Qiu	
A Brillouin amplified recirculating frequency shifter loop for generating high signal-to-noise ratio	
optical frequency comb	79
Yue Wang, Xiang Zhang, Yihan Wang, Yin Xu and Hualong Bao	
Numerical Study of Helical Multicore Fiber Based Shape Sensing with Arbitrary Twist Distribution	82
Xingyuan Ju, Mengshi Zhu, Liang Zhang, Heming Wei and Fufei Pang	
Realizing complex integrated reconstructive spectrometers using inverse approach	85
Ang Li and Shilong Pan	
Ultrathin silicon loop mirror reflector for 2D PtSe2-on-waveguide optical absorption enhancement	88
Guoxian Wu, Jiaqi Wang, Xu Li, Yingqi Xu, Hui Zhang, Zhijian Mao, Penghao Ding, Yu Du, Youfu Geng,	
Xuejin Li and Zhenzhou Cheng	
GN-Based Optimization of the Geometric Shaping Constellations for the Non-Linear Fiber Channel	91
Jiaxin Gong, Qi Zhang, Xiangjun Xin, Xinyu Yuan, Qihan Zhao, Yun Wang, Zhiqi Huang, Yi Zhao, Feng	
Tian, Qinghua Tian, Yongjun Wang, Lan Rao and Leijing Yang	
Cladding-Pumped 4-LP Erbium-Doped Fiber Amplifier with Low Modal Gain Variation	94
Lu Dai, Yuanpeng Ding, Lei Shen, Hongyan Shi, Jun Chu, Junjie Qi, Shiqi Zhou and Lei Zhang	
Genetic algorithm assisted power allocation in TFDMA passive optical networks	97
Jin Wang, Fan Yang, Huan Li, Zimin Hu, Feng Qin, Chaoer Wang, Mengjie Xu and Wanke Chen	
Sensing characteristics of long period fiber grating written in graded index fiber by CO2 laser	100
Hang Su, Yunqi Liu, Yuehui Ma and Chengbo Mou	
Simultaneous generation of optical frequency comb and microwave frequency comb utilizing a	
directly modulated laser	103
·	

Xiaohong Lan, Yang Jiang, Jing Xu, Shuangyi Linghu, Qiong Zhang, Jinjian Feng, Qianyou Long, Yunkun	
Luo, Hui Zhang and Tingyi Jiang	
A SnF Scheduling Method for HFL over Edge Computing Power Optical Network	106
Jia Zhang, Xiao Lin, Zhixiang Hong, Guiping Wu, Jun Li, Zhen Chen, Weiqiang Sun and Zhilan Lou	
Investigation of brightness, chromaticity, and color gamut by using different wavelengths of blue light	
excitation on quantum dot color conversion layers for the development of next-generation micro-LED	109
displays	
Bing-Han Wu, Chun-Yu Chang, I-Yun Hsieh, Kuan-An Chen, Hidek Kuroda, Hung-Chen Kou, Chih-Jung	
Chen and Chun-Yu Li	
Pre-Calculated Space-Ground Multi-Dimensional Structure (P-SGMDS): Disaster-Resilient	112
Survivability Design in Terrestrial-Satellite Optical Networks (TSON)	112
Xin Li, Yu Liu, Feiyang Ruan, Daixuan Li, Lu Zhang, Jingjie Xin and Shanguo Huang	
Design of High-Power Heterogeneously Integrated III-V-on-Silicon Distributed Feedback Lasers	115
Qing Ge, Jun Wang, Shuaicheng Liu, Hao Zhai, Yongqing Huang and Xiaomin Ren	
HRV Related to Mental Fatigue Obtained Based on MZI-BCG Cushion	118
Liufeng Zhu, Yifei Feng, Yi Liu, Bo Hu, Wei Xu, Xinge Feng, Lina Liu and Ying He	
Silicon On-chip Computational Spectrometer With 32-channel Meta-structures	121
Zeruihong She, Lei Zhang, Hongren Tan and Kai Wang	
Bulk-structured Ti2AIC for mode-locked pulses generation in an all-normal dispersion fiber laser	124
Kang Zhang, Guoyu Li, Fei Xie, Li Li and Lili Liang	
Design of machine vision crystal detection system	127
Di Zhao, Bin Mao, Yang Ning, Jingfan Wang and Luqi Huang	
Ultrahigh-repetition-rate pulse in a dissipative fiber ring cavity by ultrafast ignition	130
Jingmin Liu, Xu Chen, Junjie Jiang and Xia Yu	
High-speed optical signal identification scheme based on multidimensional fractal	133
Hanyu Zhang, Qi Zhang, Zhiqi Huang, Qihan Zhao, Gang Xin, Yun Wang, Yi Zhao, Feng Tian, Fu Wang,	
Qinghua Tian and Yongjun Wang	
A Greenhouse Gas Emissions-aware RSA Scheme Combined with Deep Deterministic Policy	10.6
Gradient in Optical Networks	136
Zheng Duan, Chenyu You, Shan Yin, Xueyu Fan, Kaiwen Liu and Shanguo Huang	
Femtosecond Laser inscribed Bragg gratings in Planar Lightwave Circuit with Low	120
Polarization-Dependent Loss	139
Jiajun Guan, Zhihao Cai and Changrui Liao	
Time Domain Demodulation Algorithm for Current Transformers Based on Saganc Interferometer	142
Xiaodong Yin, Yuzhuo Chen, Feng Zhou, Junchang Huang, Haoliang Hu, Yi Zhao and Li Xia	
Experimental Demonstration of Power over Fiber for Power Grid Application	145
Zemian Zeng, Changna Chen, Xiaosheng Lin, Wei Chen, Jianping Li and Yuwen Qin	
Pricing Strategy for Computing Tasks in Computing Power Networks: A Non-cooperative Sequential	1.40
Game Strategy	148
Jiaxing Guo, Jing Zhu, Wanping Wu, Yahui Wang, Yingbo Fan, Yajie Li, Yongli Zhao and Jie Zhang	
Experimental Analysis of Correlation Properties in Transition States of Raman Random Fiber Laser	151
Longqun Ni, Yifei Qi, Xingyu Bao and Zinan Wang	
Nonlinear Compensation based on Bidirectional Temporal Convolutional Network in Underwater	1
Visible Light Communication System	154

Yunkai Wang, Yuning Zhou, Zengyi Xu, Li Yao, Jifan Cai, Zhilan Lu, Haoyu Zhang, Xianhao Lin, Fujie Li,	
Zhiteng Luo and Nan Chi	
Impact of Waist Diameter on Glucose Sensing with MZI-Based Nonadiabatic Tapered	157
Micro/Nanofibers	137
Bo Cai, Ju Zhou, Jie Gao, Jie Shi, Feng Peng and Xiaojun Cui	
The small deformation assessment of the integrated fiber optic by the speckle field changes using	160
Siamese neural network	160
Anton Bryansky, Georgii Grigorev, Andrei Velichko, Xingyu Wei and Jian Xiong	
Inverse Design of Compact Silicon Dual-mode Demultiplexer and Power Splitter	163
Yi Xu, Enge Zhang and Lei Zhang	
Research on pH sensor based on micro-nano fiber modified with calcium alginate hydrogel	166
Yang Yang, Zhijun Wang, Binbin Luo, Xue Zou, Shenghui Shi and Mingfu Zhao	
Digital Twin of All Optical AND Logic Gate Based on Deep Learning	169
Ruoting Liu, Xin Li, Feiyang Ruan, Jingjie Xin, Shubo Qi and Shanguo Huang	
High sensitivity magnetic field sensor composed of magnetic field stretching material Terfenol-D and	
FPI	172
Chao Jiang, Zihao Guo and Simei Sun	
Frequency-domain Optimization of Signal Waveform Shaper in High-speed Optical Communication	
Systems considering ADC Quantization Noise	175
Zheng Liu, Tiegen Liu, Yunfan Zhang, Ji Qi, Fengyuan Tian, Jian Zhao and Tianhua Xu	
Designing mode conversion metasurface based on simulated annealing and genetic algorithms	178
Zhaodong Hao, Dengke Xing and Jianfei Liu	
Experimental Demonstration on Modified CAZAC Matrix-based Precoding for OFDM/QNSC	181
Mengwen Pan, Jing Yan, Ying Wu, Shuang Wei, Yuang Li, Mingrui Zhang, Yongli Zhao, Yajie Li and Jie	-
Zhang	
A high response bandwidth DAS system based on optical loop modulation	184
Yanyang Lei, Jinglin Sui, Zhang Xiong, Tianfu Li and Yongkang Dong	101
Research on High-impedance Characteristics of Coplanar Waveguide Electrodes in Photodiodes	187
Fuyao Liu, Xiaofeng Duan, Tonghui Li, Xiaowei Yang, Yongqing Huang and Kai Liu	10,
Observations of Switchable Polarization Temporal Kerr Cavity Solitons	190
Hongbo Zheng, Tianye Huang, Xiang Li, Jing Zhang, Zhichao Wu and Perry Ping Shum	190
A Machine Vision Method for Automated Cutting of Basins	193
Zhinan Zhao, Qihao Huang, Tingting Lang and Yanqing Qiu	175
Research on Automatic Identification of FBGs Being Forced Laterally in Series Connection with 3	
FBGs	196
Bangguan Liao, Chunbo Ji, Shuyi Huang, Mengting Yao and Yansong Qiao	
Silicon Integrated Computational Spectrometer With Cascaded Add-drop Micro-ring Resonators	199
Kai Wang, Zeruihong She, Hongren Tan, Lei Zhang and Tianyue Zhang	177
OSNR Equalization for Extended Bands Based on Online-trained Model	202
Han Li, Wu Liu, Zhiyi Zhong, Tiangian Zhang and Ming Luo	202
	205
Temperature monitoring and electrical fault warning methods of three-core submarine cables	205
Yining Zhang, Xiaohui Tang, Meng Xia, Xuexin Du, Xin He, Yu Han and Hongwei Li Miguo graduometer with a Boom Splitting Natural with Distributed All page Miguo ring Deconstance	200
Micro-spectrometer with a Beam Splitting Network with Distributed All-pass Micro-ring Resonators	208
Hongren Tan, Kai Wang, Zeruihong She, Tianyue Zhang and Lei Zhang	

A Machine Learning-Based Indoor Visible Light Positioning System	211
Zhe Bing, Zhenliang Dong, Xing Wang, Yanzhe Sun, Ting Yang and Ping Wang	
Adaptive Transceiver Design for High-capacity Multi-modal Free-space Optical Communications	214
Zhouyi Hu and Li Pei	
A Machine Learning Approach for Laboratory Safety Monitoring under Extreme Conditions	217
Meiyong Xu, Zhenni Han, Anlu Wan, Shitong Meng, Qian Zhang, Song Chen, Jian Wan and Kaimin Wang	
Fabrication of high-speed photodiode with monolithic integrated InP microlens	220
Xiaowei Yang, Xiaofeng Duan, Kai Liu and Yongqing Huang	
Assessment of the Definition Variation Rule for Three-dimensional Light Field Displays	223
Kaixin Shi, Xunbo Yu and Jinhong He	
Impact of analogue-to-digital converters on multi-channel digital nonlinearity compensation in 200	226
Gbits/s/λ polarization-multiplexed QAM transmission systems	220
Yunfan Zhang, Tiegen Liu, Cenqin Jin, Zheng Liu, Ji Qi, Tongyang Xu, Mingming Tan, Jian Zhao and	
Tianhua Xu	
Numerical Analysis of Photonic Lanterns for the Fabrication via Pull-cone and 3D Printing	229
Wanyu Wu, Wanting Ji, Guanhua Wang, Ou Xu, Quandong Huang and Xinyong Dong	
Structural soliton molecules in spatiotemporal mode-locking Yb-doped fiber laser	232
Huijie Li, Xingliang Li, Mengmeng Han and Shumin Zhang	
Indoor High Precision LED Visible Light Positioning Based on Binaural Effect Algorithm	235
Huimeng He, Ting Yang, Ping Wang, Hetong Wang and Fengyuan Shi	
Low congestion-based routing algorithm in optical network on chip	238
Junji Feng, Daqing Meng, Qiuyan Yao, Hui Yang and Jie Zhang	
Fiber optical borehole seismometer and its application in earthquake monitoring	241
Guoheng Qi, Wenzhu Huang and Wentao Zhang	
6-mode SDM transmission over 960 km with a reach extension of 5 times enabled by a 6M-EDFA	244
Tao Xu, Yanze Wang, Minghao Liu, Yaping Liu, Zhiqun Yang, Wenhao Li, Wei Li, Cheng Du, Zhanhua	
Huang and Lin Zhang	
Low Complexity Blind Phase Search for Coherent Optical Communication	247
Wenna Pang, Fei Wang, Qi Zhang, Ran Gao, Zhipei Li, Chenchen Wang, Yi Cui, Qi Xu, Xinyu Yuan, Huan	
Chang and Xiangjun Xin	
Sensitivity Enhancement of Fiber-optic Curvature Sensor	250
Fang Lin, Xiaotong Yang, Shuai Wang and Jiuru Yang	
Research on Effective Separation Method of Multi-Molecule Composite Absorption Spectrum Based	253
on Modulation Technology	233
Xiangyu Zhong, Qing Shi, Buqiang Zhang, Yulu Zhang, Xiaoying Liu, Gui Meng, Huiwen Niu, Wenbo Shao	
and Jianfa Zhou	
A fiber optic temperature and strain sensor based on few-mode fiber grating	256
Chengchen Liu and Changqing Huang	
Dispersion Compensating Fiber for OAM Modes	259
Yang Yue and Wenpu Geng	
Real-Time Human Sleep Conditions Monitoring with Optical Fiber Interferometer Based on A Novel	262
Machine Learning Method	262
Qing Wang, Ke Li, Xiang Wang, Jing Zhou and Changyuan Yu	
Multicore fiber-tip nanoforce probes with temperature compensation	265

Cong Xiong, Caoyuan Wang, Wei Ji and Limin Xiao	
Inverse-design of random fiber laser with saddle-shaped spectrum	268
Yifei Qi, Xingyu Bao, Longqun Ni, Zhenyu Ye, Jing Zhang, Pan Wang, Runnan Guan and Zinan Wang	
Terabit Single-Ended Coherent Receiver Using a Partial 3×3 Coupler	271
Yixiao Zhu, Xiansong Fang, Lina Man, Fan Zhang and Weisheng Hu	
Regional Resilient Routing Algorithm for LEO Satellite Network	274
Hongjing Tang, Qi Zhang, Yuanfeng Li, Xiangjun Xin, Weiying Feng, Wensheng Yu, Furong Chai, Meng	
Sun, Fu Wang, Yongjun Wang and Qinghua Tian	
Embedded Flexible Shape Cable for Marine Exploit Applications	277
Tao Tan, Quan Chai, Ye Tian, Shan Shi and Jianzhong Zhang	
Carboxyl-free synthesis of red InP/ZnSe/ZnSeS/ZnS quantum dots with narrow full width at half	280
maximum	280
Chun Deng, Peiqing Cai and Zugang Liu	
NBench: A Comprehensive SDN Controller Benchmarking Suite	283
Yikun Li, Baokang Zhao, Yuxiang Hu and Jinyou Dai	
Modulation format recognition based on statistical and amplitude features	286
Zhiqi Huang, Qi Zhang, Yun Wang, Bailiang Jiang, Feng Tian, Fu Wang, Qinghua Tian, Yongjun Wang	
and Xiangjun Xin	
Key Technologies for the Next Generation Coherent Passive Optical Network	289
Qiuyan Yao, Nan Feng, Daqing Meng, Hui Yang and Jie Zhang	
Space-Time Coordinated Scheduling Approach in Computing Power Optical Networks	292
Guiping Wu, Xiao Lin, Huihuang Lin, Zhixiang Hong, Jia Zhang, Jun Li, Zhen Chen, Weiqiang Sun and	
Zhilan Lou	
Viewpoint Rotation Prediction based Resource-Efficient Holographic Type Communication in EON	205
enabled 6G RAN	295
Xin Wang, Chengyuan Zhang, Yafei Wang and Xuehua Li	
The influence of medical fiber bending on laser spot distribution of out terminals	298
Min Li, Jinghao Pan, Gao Shen, Sanfei Wang, Jiayi Qu, Jiabao Qi and Jie Huang	
Harnessing the potential of advanced large vision models to enhance the detection of optoelectronic	201
imaging signals	301
Dunyou Liang, Xin Chang, Feng Peng, Bing Wu, Xiaojun Cui, Xin Zuo, Jianchao Ma and Guoyu Zhang	
Research on OAM multiplexing system based on atmospheric turbulence channel	304
Shengyan Li, Rong Ma, Dongfang Wu, Xinning Lu, Yijiong Zhang, Wei Song, Jian Wan and Kaimin Wang	
Dimensional Evolutions: Essential Understanding of the Electron-states Architectures	307
Xiaomin Ren and Ren Ren	
Multiparameter sensing via multiresonant analysis of tilted fiber Bragg grating	310
Meihui Zhang, Wenjun Zhou and Changyu Shen	
Temperature response analysis of intelligent OPPC cable core based on finite element simulation	313
Wenping Xie, Ming Nie, Yongchun Liang, Xiaoyu Luo, Yu Han, Hongwei Li and Xiaohui Tang	
Numerical simulations of spatial coherence factors for interferometric multimode speckles	316
Wenjun Zhou and Yihang Lu	
Vortex Fiber Laser Based on Twisted High Concentration Doped Active Fiber	319
Yinghui Lu, Jianxiang Wen, Ying Cao, Yan Wu, Fufei Pang, Yanhua Luo and Tingyun Wang	
Novel meandering coplanar waveguide electrodes for enhancing the bandwidth of avalanche	322

photodiode

Tonghui Li, Yu Li, Ke Li, Kai Liu, Yongqing Huang and Xiaofeng Duan	
A Hybrid Ant Colony Optimization and Tabu Search Algorithm for Routing Optimization in LEO	325
Satellite Networks	323
Yifan Xu, Yuanfeng Li, Qi Zhang, Sun, Feng, Li, Zhao, Chai, Tian, Wang, Tian, Yang and Wang	
LED Strip Quality Detection Based on OpenCV	328
Hao Liu, Qihao Huang, Honglin Liu and Tingting Lang	
Broadband Wavelength Conversion for Mode-Division-Multiplexing Signals in a Width-Modulated	331
Quasi-Phase-Matching Multimode Silicon Waveguide	551
Yi Zhao, Chenjing Zhang and Shiming Gao	
An Efficient and Trustworthy Sharing Scheme for Multi-domain Optical Resources Based on	334
Blockchain	554
Chen Zhang, Hui Yang, Cui Zhang, Jun Li, Qiuyan Yao and Jie Zhang	
Linearized microwave photonic image-reject mixer based on polarization multiplexing	337
Zhao Zhang, Dan Zhu, Jiewen Ding, Xianqin Ke, Yu Sun and Shilong Pan	
Fiber Bragg Grating Sensing System Utilizing Fast and Wideband REC-DFB Laser Array	340
Yaqiang Fan, Pan Dai, Jingxuan Zhang, Yuan Lv, Haolin Xia, Kaichuan Xu, Yu Wang, Jiacheng Wang,	
Yuan Liu, Feng Wang and Xiangfei Chen	
Coherent pulse compression ranging based on an acousto-optic frequency shifting loop	343
Quanyang Zhang and Juanjuan Yan	
Two-photon polymerization 3D-printing for fabricating tall structures on optical fiber tips	346
Monika Halendy, Sławomir Ertman, Jan Pindor and Tomasz Woliński	
Co-generated Brillouin lasers in a graphene overmodal microresonator for multispecies gas detection	349
Teng Tan, Ning An, Yiwei Li, Hao Zhang, Yupei Liang and Baicheng Yao	
Measurement Method of Laser Linewidth Based on Short-Delayed Self-Heterodyne Michelson	
Interferometer	352
Shaojie Li, Zhewen Ding, Xiangliang Zheng, Lin Yin, Chunlian Zhan and Chunliu Zhao	
Linearly Polarized Mode Demultiplexing Hybrid based on Multi-Plane Light Conversion	355
Jie Xiang, Jianping Li and Yuwen Qin	
Directional antenna UAVs networking algorithm based on on-demand-weighted clustering	358
Ruoqi Zheng, Qi Zhang, Xiangjun Xin, Tonggang Zhao, Furong Chai, Feng Tian, Fu Wang, Qinghua Tian,	
Leijing Yang, Yuanfeng Li, Meng Sun and Yongjun Wang	
Graphere/MoS2 film based optical fiber microcavity relative humidity sensor	361
Bo Dong, Senpeng Zhang, Zhuojun Wang and Wobin Huang	
Research on a method of flow noise suppression for optical fiber hydrophone towed array	364
Liqiu Wang, Haozhe Xu, Yingsong Huang and Hanfeng Xu	
Online learning Raman Scattering Coefficient for C+L Band Transmission Based on WOA algorithm	367
Zanshan Zhao, Weiguang Xing, Guanjun Gao, Weiming Gan, Chun Zhang, Peng Liu and Haoyu Wang	
Intensity-interrogated hot-wire anemometer based on narrow-linewidth laser and cobalt-doped fiber	
Bragg grating	370
Qiang Wang, Xinwei Zhao, Pengbai Xu, Jun Yang and Xinyong Dong	
Lightweight DenseNet for Submarine Cable Anchor Damage Event Classification	373
Chunying Xu, Jingqi Fang, Xinjie Wu, Yu Zhou, Jianrong Chen and Chuliang Wei	

Fault Diagnosis for Power Backbone Networks based on Graph-Gated Knowledge Graph	376
Chunying Wang, Zhilei Wang, Lijie Wu, Yan Liu, Huifang Liu and Ruijie Zhu	
Key Secure Technologies for Optical Satellite Network	379
Guan Wang, Nan Feng and Youjian Zhao	
An Integrated Optical Fiber Sensor for Simultaneous Measurement of Temperature and Salinity	202
Based on Sagnac Loop and TFBG	382
Yuhui Liu, Weihao Lin, Xuming Zhang and Li-Yang Shao	
Identification of Soft Failure in Laser Frequency Stability for Coherent Point-to-multipoint Passive	205
Optical Networks	385
Feng Qin, Chaoer Wang, Huan Li, Zimin Hu, Mengjie Xu and Wanke Chen	
Broadband achromatic terahertz metalens	388
Panxiang Jin, Qihao Huang, Tingting Lang and Yanqing Qiu	
Broadband Chaotic Microcomb Parallel High-speed Random Bit Generation Based on Phase	391
Modulation and Dispersive Component	391
Anran Li, Ning Jiang, Meizhi Che, Huanhuan Xiong, Qiang Zhang, Yingjun Fang, Bo Xu and Kun Qiu	
ZIF-8 thin films synthesized via chemical vapor deposition technique and its application for gas	394
sensing	394
Jin Wang, Bo Wei, Shakespear Takudzwa Samu, Min Deng, Mingxiang Zhou and Yunqing Lu	
An Enhanced Encoding Method for Photonic Spiking Neural Network Based on the VCSEL-SA	397
Yupeng Zhang and Nianqiang Li	
hot-wire anemometer using cobalt-doped fiber based Mach-Zehnder interferometer	400
Xinwei Zhao, Qiang Wang, Pengbai Xu, Jun Yang and Xinyong Dong	
Forward Brillouin Sensor With High Spatial Recognition and Multiplexing Positioning Capabilities	402
For Flow and Bubble Detection	403
Li Tianfu, Chen Chao, Zhang Gaoyu, Lei Yanyang, Xiong Zhang and Dong Yongkang	
Mechanism and Optimal Working Conditions of Photoelectric Frequency Down-conversion Based on	100
Photodetectors	406
Mingxi Yang, Yongqing Huang, Jihong Ye, Xuejie Wang, Shuhu Tan and Xiaomin Ren	
Cost-efficiency and low latency oriented reliable deployment for TDM-PON based 5G RAN in power	409
distribution network	409
Jing Jiang, Peizhe Xin and Aihua Liu	
High Q factor Fano resonances on dielectric metasurfaces with Si, GaAs and GaN units	412
Zixuan Ling, Yusen Wang and Zonghai Hu	
Weighted BIRCH Algorithm for Probabilistic Shaping 64QAM Coherent Optical Communication	415
System	715
Lingzhi Zou, Qi Zhang, Qihan Zhao, Yun Wang, Gang Xin, Zhiqi Huang, Xinyu Yuan, Feng Tian, Qinghua	
Tian, Fu Wang and Yongjun Wang	
Routing, Modulation Level and Spectrum Assignment Considering Energy Consumption in	418
C+L-bands Optical Network	-110
Kaiwen Liu, Chenyu You, Shan Yin, Xiaodong Liu, Mengru Cai and Shanguo Huang	
Compact vector bending sensor based on hole-assisted optical fiber	421
Jing Yang, Peng Ye, Shan Gao, Ping Li, Zheng Zhu, Jinhui Shi and Chunying Guan	

Research on the Cascaded KP4 and Zipper Codes Based on Optimized Sliding Window Decoder	424
Qianhui Guo, Feng Tian, Ze Dong, Qi Zhang, Ran Gao, Biao Luo, Qinghua Tian and Fu Wang	
High-Speed Wideband Wavelength-Swept DFB Laser Array Based on REC Technique	427
Yuan Lv, Pan Dai, Haolin Xia, Yu Wang, Jiacheng Wang, Yaqiang Fan, Jingxuan Zhang, Yuan Liu, Feng	
Wang and Xiangfei Chen	120
Microwave photonic radar with flexible tuning multiband LFM signal generation	430
Jie Yu, Zheng Wang, Haoyan Xu, Xukai Ji, Feifei Yin, Yitang Dai and Kun Xu	
Advanced Bragg Grating Vector Wind Speed Sensor Applied in the Power Industry	433
Shaohua Chen, Yunhu Liu, Yuan Liu, Kunpeng Ji, Rihan Hai, Dengfeng Li, Lamei Li and Cuixian Guo	
Gap Phase-shifted Fiber Bragg Grating and Its Application	436
Yuanhong Yang, Liangya Du, Lin Lu, Yan Xiong, Siyuan Liu, Weichun Fu, Qin Zhao, Li Yuan and Yanpeng Wu	
A Spectral-Efficient Coherent RoF Link for 5G Millimeter-Wave Transmission	439
Zhuoxuan Chen, Huixing Zhang, Aijun Wen and Wei Zeng	
InP-Based HEMT with Dual δ -doped Layers Achieving Fmax of 1.43 THz	442
Tianlin Ma, Xiaofeng Duan, Tonghui Li, Xiaole Gong, Kai Liu and Yongqing Huang	
Numerical investigation of 2 µm all polarization-maintaining mode-locked fiber laser	445
Renlai Zhou, Ni Feng, Zirui Yuan and Huiting Tang	
Secure Coherent Optical Communication System Based on Dual-Loop Electro-Optic Feedback Phase	
Encryption	448
Xinyi Li, Jiaxi Feng, Zhuolin Wen, Yuehua An, Xinyong Dong and Zhensen Gao	
Liquid Level Measurement by Using Waist-enlarged Fusion Taper in No-core Fiber	451
Shiwei Liu, Yudong Wang, Wenzhao Liu and Hongyan Fu	
Intelligent Service-Oriented Graph Representation-Assisted High-Efficiency Fine Grain Grooming	
for OSU-Based OTN	454
Tiankuo Yu, Hui Yang, Qiuyan Yao, Jie Zhang, Mohamed Cheriet and Pan Hui	
On-demand scheduling of computing power resources based on deterministic delay guarantees	457
Yunyu Zhang, Hui Yang, Qiuyan Yao and Jie Zhang	
Enhancement of Manhole Low-light Images Based on improved EnlightenGAN	460
Qiang Liu, Guo Cheng, Xiang Zhu, Zhu Chen and Huacai Chen	
Enhancing Data Collection in Wide-Area Internet of Things A Comprehensive Low-Overhead	
Approach	463
Anyi Li, Bin Zhang, Wei Peng, Yuwei Xu, Baokang Zhao, Qin Xin and Feng Zhao	
Enhanced Device Performance of FAPbBr3-based Inverted Light-Emitting Diodes with Sulfobetaine	466
Wanru Yuan, Qianmin Dong, Junjie Si and Zugang Liu	
Nonlinear Impairment Mitigation Based on Full-Link Physically Interpretable E2E Optimization	460
Framework for over 300-Gbps IM/DD Transmission	469
Huayuan Qin, Zhongya Li, Yang Ji, Guoqiang Li, Boyu Dong, Sizhe Xing, Jianyang Shi, Ziwei Li, Chao	
Shen, Nan Chi and Junwen Zhang	
A calibration method for linear displacement sensors based on operating temperature	472
Jingfan Wang, Bin Mao, Hui Liu, Di Zhao, Luqi Huang, Fei Feng and Wei Zhou	
Advanced ROPA Scheme for Unrepeatered 100G Transmission System	475
Gaofeng Wu, Lihong Li, Lei Wang, Gui Sang, Xianqin Li and Wenhua Gu	
The design and optimization of focal shift in focusing grating mirrors	478

Qian Wang, Junjing Huang, Xiaofeng Duan, Kai Liu and Yongqing Huang	
BP Neural Network Assisted Optical Fiber Sensor for High-Precision Demodulation of Salinity and	401
Temperature	481
Kunyang He, Liangliang Cheng, Lirong Ren and Ya-Nan Zhang	
Multi-dimensional Resource Measurement Modeling Based on Entropy Weight Method in	484
Computing Power Optical Networks	404
Huiying Sang, Zhichao Yang, Lijie Wu, Chunying Wang, Yan Liu, Kai Li, Xiaojie Hou, Zhicun Sun and	
Ruijie Zhu	
Multi-channel Acoustic Detection with Polarization Hole Burning Effect in Multi-Wavelength	487
Erbium-Doped Fiber laser	-107
Mengxuan Zhu, Cheng Zhou and Jiajun Tian	
A Multi-Agent Routing Algorithm with Trajectory Prediction for Highly Dynamic UAV Networks	490
Ziyi Zhao, Qi Zhang, Yuanfeng Li, Xiangjun Xin, Jianxin Ma, Meng Sun, Yi Zhao, Furong Chai, Feng Tian,	
Fu Wang, Qinghua Tian and Yongjun Wang	
High-performance 1×2 optical switch based on Ge2Sb2Se4Te1-assisted racetrack micro-ring	493
Xuanyi Chen and Yinping Miao	
Cadmium sulfide coated micro-nano fiber optic sensor for ammonia gas sensing	496
Yutong Sun, Yong Zhao and Yanan Zhang	
Laser Performance of DBR Fiber Lasers Packaged	499
Yuxia Zheng, Jianxiang Wen, Yongtao Chen, Zhaoyu Chen, Yanhua Luo, Fufei Pang and Tingyun Wang	
Observation of Bound Noise-Like Pulses in an Yb-Doped Fiber Laser	502
Xingliang Li, Mengmeng Han, Huijie Li and Shumin Zhang	
An automatic multiplexing circular polarimetric instrument for high-sensitive pathological diagnosis	505
of ischemic stroke	505
Wenlin Luan, Shengwen Han, Mengting Wang, Hengkai Zhang, Quancheng Cheng, Chunhua Chen and Xia	
Yu	
Security-enhanced chaotic optical communication based on external electro-optical encryption	508
structure	508
Zhuolin Wen, Biao Su, Xinyi Li, Jiaxi Feng, Yuehua An, Xinyong Dong and Zhensen Gao	
Simultaneous Measurement of Temperature and Refractive Index Using an Ellipsoidal Extrinsic	511
Fabry-Perot Interferometer	511
Gongye Li, Shenghui Shi, Binbin Luo, Xue Zou and Na Fang	
Effects of Random Birefringence in Multimode Fibers on Nonlinear Beam Self-cleaning	514
Chaoyang Geng and Xiaosheng Xiao	
Intensive Tasks Offloading Decision Algorithms in Satellite Edge Computing Systems	517
Yanxiang Wang, Furong Chai, Qi Zhang, Yuanfeng Li, Meng Sun, Dandan Sun, Feng Tian, Fu Wang,	
Yongjun Wang, Qinghua Tian and Leijing Yang	
Shape Sensing Using In-Fiber Thermally Diffused Coupler and Fiber Bragg Gratings	520
Qi Xia, Hongye Wang, Xiaotong Zhang, Lingzhi Meng, Libo Yuan and Tingting Yuan	
Dual silicon microring resonators for carbon dioxide gas sensing	523
Hui Zhang, Jiaqi Wang, Penghao Ding, Zihao Ou, Yingqi Xu, Guoxian Wu, Zhijian Mao, Xu Li, Yu Du,	
Youfu Geng, Xuejin Li and Zhenzhou Cheng	
Chaotic Feature Masking Against Attacks on Emitter Identification	526

Mingye Li, Zhi Chai, Xinran Huang, Yilin Qiu and Xuelin Yang Performance Assessment of Deep Learning based Channel Modeling for Fiber Optic Communication 529 System Yang Ji, Zhongya Li, Huayuan Qin, Chengxi Wang, Jianyang Shi, Ziwei Li, Chao Shen, Nan Chi and Junwen Zhang Mode transformation of multipole beams with orbital angular momentum 532 Zhenjun Yang, Zhuoyue Sun, Duo Deng and Shumin Zhang 535 Applications of dynamic metasurface holography in AR/VR Zhibao Huang, Qihao Huang, Tingting Lang and Fanghao Li High-resolution spectroscopy based on interleaved Brillouin optical frequency comb 538 Yihan Wang, Wenbin Li, Xiang Zhang, Shaozhuang Yao, Yin Xu and Hualong Bao Intent-driven Routing Algorithm based on LSTM in Power Backbone Networks 541 Lijie Wu, Jingfeng Wang, Yan Liu, Chunying Wang, Huifang Liu and Ruijie Zhu Fiber Mapping using Neural Networks for Physical-Layer Secure Key Distribution 544 Yuhao Zhong, Xinran Huang, Zhi Chai, Mingye Li and Xuelin Yang Failure Prediction based on Deep Neural Networks in Power Backbone Networks 547 Fajia Ji, Hailong Wu, Lei Sheng, Lei Wang, Liang Jin, Chunying Wang, Lijie Wu, Yan Liu and Ruijie Zhu Efficient training of large-scale optical neural network based on evolutionary algorithm 550 Zhiwei Yang, Yihang Lai, Tian Zhang, Jian Dai and Kun Xu End-to-End Learning of Noise Shaping for OAM Mode Division Multiplexing Transmission 553 Zhaohui Cheng, Ran Gao, Qi Xu, Fei Wang, Yi Cui, Chenchen Wang, Zhen Xu and Xiangjun Xin Experimental Demonstration of Hitless OCS-based DCN Reconfiguration to Steer Multi-Class Traffic 556 Qian Lv, Zhihuang Ma and Zuqing Zhu 559 Interference Cancellation and Iterative Multi-User Detection for Satellite OTFS-NOMA Networks Meng Sun, Qi Zhang, Xiangjun Xin, Furong Chai, Yuanfeng Li, Yanxiang Wang, Yi Zhao, Feng Tian, Qinghua Tian and Yongjun Wang Optoelectronic Pod Integrating FSO Communication and Scanning Based On Liquid Crystal Optical 562 **Phased Array** Rusheng Zhuo, Dongmei Gu, Jieping Wu, Xiaoxian He, Xiangru Wang, Zixuan Wang and Kang Liu A multi-domain protection for reliable slicing in network coding based 5G/B5G RAN enabled power 565 distribution network Jing Jiang, Peizhe Xin, Nan Xiao and Qingfeng Li Demonstration of Photonic Sub-THz ISAC System with Real-Time 251.03-Gbps Communication Rate 568 and Offline 2.5-cm Sensing Resolution Mingzheng Lei, Zhidong Lyu, Qingzhi Zhou, Junhao Zhang, Hao Li, Bingchang Hua, Yuancheng Cai, Jiao Zhang, Junjie Ding, Xingyu Chen, Lu Zhang, Jianjun Yu and Min Zhu 571 Nonlinear FMCW Laser Ranging System Based on Sinusoidal Frequency Modulation Leifu Zhou, Qihao Huang, Tingting Lang and Yanqing Qiu A Digital Emergency Communication Method for Coal Mining Accident Based on Distributed 574 **Acoustic Sensor** Yazhuo Li, Jiaqi Ma, Xinying Zhao, Hongren Li, Shuai Tong, Ningmu Zou, Xuping Zhang, Fei Xiong, Yixin Zhang and Huanhuan Liu Multimode Fiber Imaging Based on Hydrogel Fiber 577 Lele He, Mengchao Cao, Lili Gui, Jingjing Guo and Xiaosheng Xiao

Thin-film lithium niobate modulator formed by 3D electrodes on Mach-Zehnder interferometer	580
Xiaofeng Liu, Quandong Huang, Jiali Zhang, Zixin Chen, Bin Xiao, Jianping Li, Di Peng, Ou Xu and	
Yuwen Qin	
Research and Discussion on Digital Twin Architecture of 5G Bearer Network	583
Yu Wang, Xiao Cui, Jian Zhu and Bingli Guo	
Research on Vibration Event Classification in Φ-OTDR Systems Using MFCC Feature Extraction	
and Improved Swin Transformer	586
Yi Shi, Zichong Lin, Jiewei Chen, Xuwei Kang, Qiren Yan and Chuliang Wei	
OOK and ACO-OFDM hybrid system for IM/DD Visible Light Communication	589
Zhiyu Xiao, Lei Jing, Zhengrong Tong, Kun Yang, Jianping Yu and Ze Li	
Noise Interference Impact Degree-Aware Routing in Quantum Key Distribution Networks	592
Minyu Liu, Xiaosong Yu, Yuhang Liu and Yongli Zhao	
Design and Performance Analysis of Silica-based Thermo-optical Switches Operating in O-band and	505
C-band	595
Shuojian Zhang, Zikang Xu, Guocai Song, Jiahui Yu, Jiasheng Zhao, Junqiang Zhu and Jianjun He	
L-band extended EDFA co-pumped by C-band laser	598
Yongfang Zou, Manbing Lin, Xinyong Dong, Pengbai Xu, Yuncai Wang and Yuwen Qin	
A Few-shot Learning Equalizer Applied to Optical Communication System	601
Yueying Zhao, Yongjun Wang, Xingyuan Huang, Lu Han, Qi Zhang and Yuxi Zheng	
Parity-Time Symmetric Optoelectronic Oscillator Based on Four-Wave Mixing Effect in a	(04
Semiconductor Optical Amplifier	604
Jie Zhang, Zhaoying Wang, Jiaxin Zhou, Shuonan Duan, Wentao Dai and Chunfeng Ge	
Sleep Efficiency Monitoring Based on Fiber MZI Sensor Mattress	607
Yi Liu, Tianjiao Min, Liufeng Zhu, Wei Xu, Xinge Feng, Yifei Feng and Ying He	
Sensing Bandwidth Enlargement with Orthogonal Codes and Mismatched Filters in Distributed	(10
Acoustic Sensing System	610
Anchi Wan, Yongxin Liang, Yingqing Wu, Shibo Zhang, Zhenyu Ye and Zinan Wang	
High-order-mode Multi-wavelength Random Fiber Laser based on Brillouin and Rayleigh scattering	613
in few mode fibers	015
Yichun Li, Zepeng Zhong, Zizhou Wei, Mengshi Zhu, Heming Wei, Xianglong Zeng, Jianxiang Wen, Fufei	
Pang, Tingyun Wang and Liang Zhang	
Non-invasive Cardiac Poincare Analysis Based on Fiber Interferometer	616
Wenye Sun, Chunliang Wang, Xinxin Lin and Wei Xu	
Intra-Vehicle Optical Networks	619
Qin Liang and Gordon Ning Liu	
Research on single tube packaging technology for high-power blue semiconductor lasers	622
Gao Xiang, Yang Wenxin, Tao Chunyan and Hao Mingming	
ZUC-256 high throughput FPGA implementation	625
Yi Wei, Hanxiao Ma, Kaijie Guo and Sheping Shi	
Modulation Format Recognition Scheme Based on Reinforcement Learning in Coherent Optical	628
Communication System	020
Fangxu Yang, Qinghua Tian, Yiqun Pan, Xiangjun Xin, Feng Tian, Leijing Yang, Fu Wang, Sitong Zhou,	
Yongjun Wang and Qi Zhang	

Accurate and Efficient Fiber Channel Modeling for Complex-value Based Conditional Generative	631
Adversarial Network	031
Yuxi Zheng, Yongjun Wang, Haifeng Yang, Lu Han, Xingyuan Huang and Yueying Zhao	
High-spatial-resolution and high-speed distributed vibration sensing based on φ -OFDR	634
Hongwei Li, Zhang Xiong, Yanyang Lei, Tianfu Li, Yanda Qu and Yongkang Dong	
High refractive index localized surface plasmon resonance sensor based on hollow core fiber filled	()7
with gold nanowires	637
Ailing Zhang, Zhiyang Wang and Pengxia Sui	
Dynamic refractive index sensing of water-ice phase transition with a single fiber grating	640
Yan Zhou, Wenjun Zhou, Changyu Shen and Ruipin Chen	
Focusing characteristics of polarimetric mixed eccentric phase modulated linearly polarized	(1)
hyperbolic cosine-Gaussian beams	643
Haozhe Xu, Liqiu Wang, Yueyang Chen, Xiaoqiang Gai and Peijin Wei	
The Design and Simulation of High-order OAM Mode Couplers	646
Heng Guo, Lina Xiang, Zhifeng Wang, Mengshi Zhu, Liang Zhang, Heming Wei and Fufei Pang	
A lightweight and anti-interference method for intrusion events recognition with fiber optic DAS	
system	649
Bo Yang, Rui Tian, Hao Luo, Chao Cai, Bingying Chen, Shixiong Zhang, Yilin Gan, Chao Xiong and Zhijun	
Yan	
Gain optimization of lithium niobate ridge waveguide amplifiers	652
Yuqing Zhao, Ziming Dong, Guoqing Sun, Yaxin Wang, Lei Ding, Liqin Tang and Yigang Li	
A Simple and Generalizable Algorithm for Multimode Fiber Specklegram Based Deformation Sensor	655
Hongjian Xu, Lele He and Xiaosheng Xiao	
Waveguide amplifiers in SiN photonics heterogeneous integration with Er:Yb:TeO2 thin films	658
Ziming Dong, Yuqing Zhao, Guoqing Sun, Yaxin Wang, Lei Ding, Liqin Tang and Yigang Li	
On-Chip Implementation of Intelligent Signal Recognition in Fiber-Optic DAS	661
Yiyu Liu, Yongxin Wu, Xiben Jiao, Huijuan Wu and Yunjiang Rao	
High-gain L-band Extended Fiber Amplifier Using Bismuth-erbium Co-doped Fiber	664
Zhikai Wu, Yongfang Zou, Zhensen Gao, Pengbai Xu and Xinyong Dong	
Superposed 3D-256CAP constellation design based on geometrically shaped 3D-16QAM	667
Boce He, Jie Ma, Jianfei Liu, Jia Lu, Xiangye Zeng and Mingming Luo	
CNN Based Equalizer in NFDM System with B-Modulation	670
Zimu Li, Yongjun Wang, Lu Han, Xingyuan Huang, Shuo Liu, Xiying Ding and Qi Zhang	0,0
Multi-Objective Routing Based on Beluga Whale Optimization in Computing Power Optical	
Networks	673
Zhichao Yang, Kai Li, Chunying Wang, Yan Liu, Lijie Wu, Huiying Sang, Xiaojie Hou, Zhichun Sun and	
Ruijie Zhu	
A Precision Fiber Optic Microseismic Monitoring System for Underground Coal Mines	676
Binxin Hu, Yunhao Gao and Siqi Li	070
A phase modulation based and frequency stabilized optoelectronic oscillator using a self-phase	
locking loop	679
Shengyu Wang and Juanjuan Yan	
Research on strawberry fruit detection based on YOLOv7	682
Guo Cheng, Qiang Liu, Xiang Zhu, Zhu Chen and Huacai Chen	002
Guo Chong, Quang Liu, Alung Zhu, Zhu Chen una Huadal Chen	

Real-time observation of multimode-soliton explosion in a spatiotemporal mode-locked laser	685
Xinge Liu, Chaoyang Geng, Lili Kong and Xiaosheng Xiao	
Arbitrary guide mode multiplexer based on heterogeneous integrated directional couplers formed by	(00
multi-step photolithography	688
Kedi Peng, Jiaqi Ran, Jiali Zhang, Ou Xu, Xinyong Dong, Yuwen Qin and Quandong Huang	
Power Control with Online Gain Optimization for Multi-band Optical Networks	691
Xiaoxuan Gao, Rentao Gu and Lin Bai	
Strain and Temperature Discrimination Measurement Sensor Using FMF-PMF Fiber Structure Built	(0.4
in Sagnac Loop	694
Huichao Chen, Changqing Huang and Chengchen Liu	
High Sensitivity Fiber Fabry Perot NH3 Sensor based on PMMA Film	697
Feng Zhu, Yingying He, Yi Huang, Chuanlu Deng, Xiaoxiao Xu, Zhengjie Xu and Tingyun Wang	
Inverse design of continuous domain bound state all-dielectric metasurface based on deep learning	700
Hanxiang Yu, Yuping Liu, Sicen Dong and Yuqing Wang	
Numerical and experimental investigations of versatile soliton moleculars in an	702
all-polarization-maintaining figure-9 fiber laser	703
Huiting Tang, Zirui Yuan, Ni Feng and Renlai Zhou	
A High-performance Circular Polarizer	706
Sha Li, Jianxiang Wen, Beibei Xing and Hao Shi	
Cache-assisted Task Offloading and Resource Optimization for LEO Network	709
Furong Chai, Qi Zhang, Xiangjun Xin, Yanxiang Wang, Yuanfeng Li, Meng Sun, Dandan Sun, Feng Tian,	
Qinghua Tian, Yongjun Wang, Leijing Yang, Fu Wang and Sitong Zhou	
Perturbation-based Nonlinearity Compensation for Optical Fiber Transmission using BiLSTM	712
Mingyu Chang, Jian Zhao and Yuqing Yang	
Multi-mode multiplexing reservoir computing based on a WRC-FPLD with optical feedback	715
Chunxia Hu and Dianzuo Yue	
Key Promising Technologies for Submarine Optical Network	718
Qiuyan Yao, Nan Feng, Da Qing, Hui Yang and Jie Zhang	
High pressure-sensitive and stable fiber Fabry-Perot interferometer with nano-diaphragm assembled	= 0.1
by H-O catalysis bonding	721
Xiaotong Li, Xinpu Zhang, Zeliu Li, Yisong Wang, Jiamai Ren and Fenglin Zhang	
An Ultra-compact Four-channel Wavelength Demultiplexer by Inverse Design	724
Jiahao Li, Zhiyang Xie, Ying Qiu, Lin Wu, Ming Luo, Bowen Jia, Tianye Huang and Xiang Li	
Phase noise measurment of mode-locked lasers without dispersion management	727
Mengcheng Zhang, Xingcan Yan, Shaozhuang Yao, Yin Xu and Hualong Bao	
Fast and Accurate Mapping Method for OPGW Tower Based on M-OTDR	730
Ruofan Wang, Hongren Li, Xinying Zhao, Shuai Tong, Ningmu Zou, Xuping Zhang, Huanhuan Liu, Fei	
Xiong and Yixin Zhang	
Llama-Log: Optical Network Log Parsing with Fine-Tuned Large Language Model	733
Xiangbin Li, Yue Pang, Yanli Liu, Yahang Huan, Min Zhang and Danshi Wang	
All-fiber coaxial focus multimode beam probe for optical coherence tomography	736
Ziyi Huang, Chenyang Su, Dejun Liu, Yalong Tai, Longhui Huang, Weijia Bao, Yiping Wang and Changrui	
Liao	

Simultaneous Measurement of Temperature and Strain Based on Few Modes Tilted Fiber Bragg	720
Grating	739
Wenxin Yang, Yonglin Huang and Bocheng Shao	
Terahertz Beam-steering Leaky-wave Antennas Applied to Photonic Integrated Transmitter Chips	742
Ting Fang, Xiaofeng Duan and Xiaowei Yang	
Reflective curvature sensor based on hole-assisted three-core fiber	745
Peng Ye, Jing Yang, Chunying Guan, Binbing Li, Shan Gao, Yan Liu, Bo Liu, Yao Bai and Yulin Zheng	
Vacuum quenching optimization on blade-coated perovskite films in air for perovskite solar cells	748
Wenjun Han, Xin Yao and Zugang Liu	
CNN-BiGRU Fiber Nonlinear Compensation Scheme Based on Multi-Label Classification	751
Chang Ding, Tian Qiu, Xu Wang, Shuhao Rao, Yihuan Su, Xueyuan Ao, Qingyu He, Ming Luo and	
Fengguang Luo	
Joint Optimization of Coding and Shaping for Coherent Optical Communication Systems	754
Chenye Wang, Xue Zhao, Jiahao Zhou, Rui Wang, Taowei Jin, Jing Zhang, Shaohua Hu and Kun Qiu	
UTC-PD optoelectronic mixer designment and mixer array	757
Jihong Ye, Mingxi Yang, Xuejie Wang, Shuhu Tan and Yongqing Huang	
High precision frequency source abnormaly monitor using Kolmogrov-Arnold Networks	760
Sibo Gui, Junchao Wang, Chuwen Tang and Jianye Zhao	
An Enhanced Polar-LDPC Concatenated Protection Scheme Utilizing Optimized Critical Sets	763
Hou Chen, Zhu Hongjun, Han Yunlong, Zhang Meiling and Hu Guijun	
Spectrally Efficient Faster-Than-Nyquist Dual-Band Transmission Enabled by Inter-Subcarrier	-
Crosstalk Cancellation	766
Lina Man, Yixiao Zhu, Ziheng Zhang, Guangying Yang, Yikun Zhang, Qunbi Zhuge and Weisheng Hu	
Refractive index SPR sensor based on side-polished capillary fiber and PDMS	769
Shuowen Chen, Jierui Li, Yuxin Luo, Yequan Guo, Xuhao Ji, Yifan Qin, Shuyi Chen, Yu Zhang and Zhihai	
Liu	
Vector Bending Sensor Based on 3D Printed Seven Core Fiber	772
Yang Cao, Yanhua Luo, Wei Chen, Jianxiang Wen, Yanhua Dong, Tingyun Wang, Zhiqiang Song, Xiaolei	
Zhang, Jiasheng Ni, Jiaying Wang, Gang-Ding Peng, Yushi Chu and Jianzhong Zhang	
Efficient On-Chip Waveguide Characterization Using Image Processing Algorithm in Optical	
Lithography	775
Quankeng Huang, Wenchao Jiang and Quandong Huang	
Large bandwidth thin film lithium niobate electro-optic modulator with periodic dual-capacitance	
structured electrodes	778
Hu Shuling, Zhou Xiang, Qi Binzhi and Sun Chuanqi	
CycleGAN-based Data Augmentation for Enhancing Classification Accuracy in Φ-OTDR Systems	781
Yi Shi, Xuwei Kang, Zichong Lin, Qiren Yan, Zhixiang Wei and Chuliang Wei	
DRL-based Impairment-aware Resource Allocation Algorithm in C+L Band Elastic Optical Networks	784
Dan Yan, Nan Feng, Zhiqun Gu, Xiaobo Zuo, Shihao Fan and Jijun Zhao	
Power Optimization for S+C+L-band Transmission Using a Self-adaptive Differential Evolution	
Algorithm	787
Zixuan Wei, Jing Zhang, Rui Wang, Jinjiang Li, Hong Lin, Shaohua Hu and Kun Qiu	
Fast algorithm in distributed curvature sensing based on OFDR and helical weak gratings fiber	
bundle	790

Aoyan Zhang, Junfan Chen, Minghui Niu, Linqi Cheng, Kunpeng Feng, Defeng Zou, Hong Dang, Jinna	
Chen and Perry Ping Shum	
A Resource Orchestration Scheme for Data Synchronization of Distributed Machine Learning in	
Optical Networks	
Zhizhi Li, Chenyu You, Xiaodong Liu, Xueyu Fan, Shan Yin and Shanguo Huang	
Mushroom-mesa modified uni-traveling carrier photodiodes	
Xiaole Gong, Tonghui Li, Tianlin Ma, Kai Liu, Yongqing Huang and Xiaofeng Duan	
MEO-Supervised Traffic Grooming Routing Method for Regional Congestion in LEO Satellite	
Optical Network	
Sentian Yin, Hui Yang, Qiuyan Yao, Jun Li, Cui Zhang, Zhe Niu, Bingda Wu, Chen Zhang and Jie Zhang	
Demonstration of Wavelength Selective Attenuator based on Second-order Micro-ring Resonator	
Tao Song, Xu Yang and Lei Zhang	
Experimental and Theoretical Analysis of Deep Residual Time-Delay Reservoir Computing based on	
Clipping Algorithm	
Changdi Zhou and Nianqiang Li	
Computing and Spectrum Resource Collaborative Allocation Strategy in Computing Power Optical	
Networks	
Kai Li, Huiying Sang, Yan Liu, Chunying Wang, Lijie Wu, Zhichao Yang, Zhichun Sun, Xiaojie Hou and	
Ruijie Zhu	
AN-D2NN: Classification of Modes with Amplitude Nonlinear Diffractive Deep Neural Network	
Kunpeng Zhu, Zhemg Lee, Wenbo Zhang, Guanju Peng, Yi Cheng, Jin Liu and Zongze Li	
Research on Salinity Detection Sensors Based on Scanning Tapered and Fixed Point Taper	
Micro/Nanofiber	
Ju Zhou, Bo Cai, Jie Gao, Xiaojun Cui and Jie Shi	
RL-based Bandwidth Decision in Optical Access Networks: When to Exploit a Decision with	
Confidence?	
Lihua Ruan and Elaine Wong	
Adaptive microwave signal generation based on the photonic real-time Fourier transformation	
feedback	
Rongtian Jiang, Dan Zhu, Zhantao Zhao, Jiewen Ding and Shilong Pan	
Chaotic 2D Cellular Automata Aided DNA Dynamic Encoding Encryption Scheme for Secure	
CO-OFDM-PON	
Yun Wang, Qi Zhang, Ran Gao, Zhiqi Huang, Xinyu Yuan, Qihan Zhao, Yi Zhao, Feng Tian, Fu Wang,	
Qinghua Tian, Yongjun Wang and Xiangjun Xin	
Characterization of Phase Shift in UTC Photodiode and MUTC Photodiode	
Xiaowen Dong, Kai Liu, Yongqing Huang, Xiaofeng Duan and Xiaomin Ren	
Real time time-frequency transmission system based on multi-core optical fibers	
Xuanzhi Gan, Feng Tian, Tianze Wu, Jing Zhang, Jianwei Zhou, Qihang Yu, Zhuojun Jiang, Qi Zhang and	
Qinghua Tian	
A Dynamic Computing Power Scheduling Scheme for the EDWC Project in China	
Zhixiang Hong, Xiao Lin, Guiping Wu, Jia Zhang, Jun Li, Zhen Chen, Weiqiang Sun and Zhilan Lou	
Frequency-tunable microwave based on Brillouin laser frequency comb	
Xiaojie Luo, Zhexin Zhang, Jiaxuan Wang, Yin Xu and Hualong Bao	
Low-Latency Frequency Division Multiplexing Using Entropy Loading for Multi-Point-to-Point	

Passive Optical Networks

Cheng Li, Wenxuan Mo, Ji Zhou, Haide Wang, Weiping Liu and Changyuan Yu	
Coherently controlled absorption of few-layered electromagnetic metamaterials	841
Hongrui Zhang, Hang Yu, Botian Sun, Bo Lv, Yuxiang Li and Jinhui Shi	
Subwavelength grating coupler for mid-infrared light coupling to an ultra-thin silicon waveguide	844
Changguang Zou, Qiyue Lang, Rongxiang Guo, Yaru Wang, Jiaqi Wang, Junfeng Jiang, Kun Liu, Tiegen	
Liu and Zhenzhou Cheng	
A Detection Method for Quantum Key Distribution Networks Against DoS Attacks	847
Yixuan Li, Xiaosong Yu, Yuhang Liu and Yongli Zhao	
Ultrafast Integrated Automatic Polarization Controller Based on Silicon Photonics	850
Gengqi Yao, Weiqin Wang, Ziwen Zhou, Yifan Zeng, Siqi Yan and Ming Tang	
The research focuses on the development of a measurement method for liquid film on fuel rods based	052
on reflective optical fiber sensor	853
Yidong Wan, Decao Wu, Binbin Luo, Fudan Chen, Mao Kuang and Jinzhong Li	
Research on Image Recognition and Classification of Weld Defects Based on Neural Networks	856
Shenghua Zhou, Xianghua Fang, Qinyu Liu and Liuxin Ye	
Design of Flat and Spiral Phase Plates for Vortex Beam Generation for 3D Printing Purpose	859
Wanting Ji, Wanyu Wu, Yarou Chen, Ou Xu, Quandong Huang and Xinyong Dong	
Fast RSOP tracking in optical domain by a polarization demultiplexing device in coherent optical	862
communication systems	802
Chong Wang, Ding Li, Linan Shan, Wanxin Zhao, Guanghao Yao, Yan Zhang, Peng Sun, Nan Cui, Lixia Xi,	
Hu Zhang, Xianfeng Tang, Xiaosheng Xiao and Xiaoguang Zhang	
Key Enablers for Hardware-Efficient Neural Network Receiver in Short-Reach Optical Links	865
Zhaopeng Xu, Weisheng Hu and William Shieh	
FSO Technologies for Cellular Mobile Communications	868
Gihong Park and Hoon Kim	
Two-way time comparison based on the phase-derived method	871
Mingfeng Xiao, Xiuyuan Sun, Zhongyang Xu, Yanming Zhang, Zhenzhou Tang, Min Xue and Shilong Pan	
Spin Hall Effect of Electromagnetic Wave Based on Hyperbolic Metasurface	874
Weiyan Li, Zhaoqi Jiang, Wenjia Li, Zheng Zhu and Jinhui Shi	
Temporal Characteristics of Nonlinear Crosstalk in the Presence of Inter-Channel Stimulated Raman	877
Scattering	0//
Yichao Wang, Kehan He, Peiyun Ge, Jiale Duan and Lixia Xi	
Design and Investigation of Electrode for Terahertz Band Photodetector	880
Likang Gong, Yongqing Huang, Xiaodong Xie, Xuejie Wang, Xiaofeng Duan and Kai Liu	

Likang Gong, Yongqing Huang, Xiaodong Xie, Xuejie Wang, Xiaofeng Duan and Kai Liu