

2022 IEEE the 10th International Conference on Information, Communication and Networks

第十屆國際信息，通信和网络会议

ICICN 2022

CONFERENCE PROGRAM

Zhangye, Gansu, China | August 19-22, 2022

(Virtual Conference)

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WELCOME ADDRESS

The changing of seasons year after year always brings surprises. When we were still immersed in summer scenery, in a blink of an eye, summer became a story, and autumn became a landscape. In this season full of stories and landscapes, we are very honored to usher in the long-awaited "2022 IEEE the 10th International Conference on Information, Communication and Networks" and welcome experts and scholars from all over the world!

As the organizer of this conference, on behalf of Lanzhou University of Technology and all the brothers participating in the organization, I would like to express my heartfelt thanks and warm welcome to all experts and scholars for coming!

Lanzhou University of Technology is situated in Lanzhou, an important city on the ancient Silk Road and the capital city of Gansu Province, China. LUT was formerly called Gansu Provincial Technical College in 1919. Then it became Gansu University of Technology in 1958, and was renamed Lanzhou University of Technology in 2003. After nearly one hundred years of development, LUT has grown to be a top multi-disciplinary university, which features solid foundation in Engineering, increasing development in science fields, and unique characteristics in liberal arts.

Talent training and scientific research are important historical responsibilities we shoulder. Every progress and achievement are inseparable from the support and help of colleagues at home and abroad and friends from all walks of life. In order to protect the health of all participants, to prevent the spread of the pandemic, the organizing committee had no other choices but to change the conference to online conference. Thanks for your kind understanding and willingness to present online. I would like to take this opportunity to thank all the experts and scholars for their long-term care and support for the development of our school and college! Thank you for your support to ICICN 2022!

Finally, I wish the "2022 IEEE the 10th International Conference on Information, Communication and Networks" a great success. I sincerely wish all experts and scholars good health, peace and happiness!

General Chair
Rennian Li, Lanzhou University of Technology

CONFERENCE COMMITTEES

Honorary Chairs

Tianyou Chai, Northeastern University
Ke Wu, University of Montreal
Xuelong Li, Northwestern Polytechnical University

General Chairs

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Perry Ping Shum, South University of Science and Technology
Jianlin Zhao, Northwestern Polytechnical University
Jun Guo, Beijing University of Posts and Telecommunications
Jie Cao, Lanzhou City University

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Xiaoguang Zhang, Beijing University of Posts and Telecommunications

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Xiaoxu Li, Lanzhou University of Technology

Publication Chairs

Lu Huang, IEEE China Council Sensors Council and Systems Council Joint Chapter
Fuqing Zhao, Lanzhou University of Technology
Shanglin Hou, Lanzhou University of Technology

Conference Treasurer

Weiguang Zhang, Lanzhou University

CONFERENCE COMMITTEES

Tracks and Chairs

Track 1: Optical Communications and Networks

Guijun Hu, Jilin University

Wu Jia, Reseach Institute of China Unicom

Track 3: Application of Machine Learning in Image Processing

Ke Zhang, North China Electric Power University

Xiaoxu Li, Lanzhou University of Technology

Track 5: Orbital Angular Momentum Communication

Xiaoli Yin, Beijing University of Posts and Telecommunications

Zhongyi Guo, Hefei University of Technology

Track 7: Network Security

Youliang Tian, Guizhou University

Jinbo Xiong, Fujian Normal University

Track 9: Ultrafast Photonics

Peiguang Yan, Shenzhen University

Kan Wu, Shanghai Jiaotong University

Track 11: Optical Sensors

Xinyong Dong, Guangdong University of Technology

Ping Lu, Huazhong University of Science and Technology

Track 13: Natural Language Processing and Knowledge Engineering (NLP-KE)

Xiao Sun, Hefei University of Technology

Caixia Yuan, Beijing University of Posts and Telecommunications

Track 15: Fiber-based Devices and Applications

Zinan Wang, University of Electronic Science and Technology of China

Shanglin Hou, Lanzhou University of Technology

Mingjiang Zhang, Taiyuan University of Technology

Chengbo Mou, Shanghai University

Track 17: Quantum Information and Related Quantum Technologies

Pei Zhang, Xi'an Jiaotong University

Yin Cai, Xi'an Jiaotong University

Feng Li, Xi'an Jiaotong University

Track 2: Space Communications, Navigation and Tracking

Tianshu Wang, Changchun University of Science and Technology

Shiming Gao, Zhejiang University

Track 4: Wireless Communication

Zhicheng Dong, Tibet University

Qing Wang, Tianjin University

Track 6: Underwater Communication

Jing Xu, Zhejiang University, China

Mingjun Wang, Xi'an University of Technology

Track 8: Machine Learning and Artificial Intelligence

Ce Li, Lanzhou University of Technology

Shaoyi Du, Xi'an Jiaotong University

Track 10: Optoelectronic Devices

Dan Lu, Institute of Semiconductors, CAS

Hui Yu, Zhejiang University

Track 12: Advanced Optical Imaging (AOI)

Liyong Ren, Shaanxi Normal University

Xiaojun Yu, Northwestern Polytechnical University

Track 14: Novel Optoelectronic Materials and the Applications

Xiaohui Li, Shaanxi Normal University

Track 16: Micro/nano-photonic Device and All Optical Signal Processing

Zhanqiang Hui, Xi'an University of Posts and Telecommunications

Track 18: Intelligence Optimization and Scheduling

Ling Wang, Tsinghua University

Fuqing Zhao, Lanzhou University of Technology

Track 19: Network Intelligent Information Processing

Fuzhong Nian, Lanzhou University of Technology
Xinjian Xu, Shanghai University

Track 21: Visible Light Communication and Positioning

Jinyuan Wang, Nanjing University of Posts and Telecommunications
Li Zhao, Xi'an Technological University

Track 23: Fiber Photonics Technology

Nan-Kuang Chen, Liaocheng University
Kenneth Grattan FREng, City, University of London
B. M. A. Rahman, City, University of London
Raman Kashyap, Polytechnique de Montreal

Track 20: Wireless Network

Long Yang, Xidian University
Bo Li, Ningxia University

Track 22: Neuromorphic Optics

Hongwei Chen, Tsinghua University

Xingyuan Xu, Beijing University of Posts and Telecommunications

Track 24: Hybrid Networks and Communication Technologies

Yanni Ou, Beijing University of Posts and Telecommunications
Yongli Zhao, Beijing University of Posts and Telecommunications

CONFERENCE COMMITTEES

Technical Committee

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Feng Lin, Sichuan University, China
Chuanbiao Zhang, China United Network Communications Group Company Limited, China
Yi Lei, Hefei University of Technology, China
Yu-Feng Song, Shenzhen University, China
Xiaojun Yu, Northwestern Polytechnical University, China

Jefferson Costales, Eulogio “Amang” Rodriguez Institute of Science and Technology, Philippines
Yan Li, Beijing University of Posts and Telecommunications, China
Lei Zhang, Tongji University, China
Jianhua Mo, Soochow University, China
Michael Albino, President Ramon Magsaysay State University, Philippines
Shuikui Shen, China Unicom Research Institute, China
Zhe Wang, Fudan University, China
Subhrananda Goswami, Raja Narendra Lal Khan Women's College, India
Feng Lin, Sichuan University, China
Chuanbiao Zhang, China United Network Communications Group Company Limited, China
Yi Lei, Hefei University of Technology, China
Yu-Feng Song, Shenzhen University, China
Xiaojun Yu, Northwestern Polytechnical University, China
Yitang Dai, Beijing University of Posts and Telecommunications, China
Feifei Yin, Beijing University of Posts and Telecommunications, China
Yue Zhou, Beijing University of Posts and Telecommunications, China
Chanfei Wang, Lanzhou University of Technology, China
Cherif Diallo, Gaston Berger University, Senegal
Jian Dai, Beijing University of Posts and Telecommunications, China
Di Xiao, Chongqing University, China
Wanshu Xiong, Zhejiang University, China
Yu Wang, China Academy of Information Communications, China
Haibin Chen, Xi'an Technological University, China
Chen Ji, Zhejiang University, China
Sansanee Auephanwiriyakul, Chiang Mai University, Thailand
Tianye Huang, China University of Geosciences (Wuhan), China
Zhiping Hu, Shanghai Customs College, China
Wei Peng, National University of Defense Technology, China
Ao Peng, Xiamen University, China
Riliang Liu, Shandong University, China
Baolong Li, Nanjing University of Information Science and Technology, China
Zhongyuan Qin, Southeast University, China
Wufei Wu, Nanchang University, China
Shichang Zhong, Nanjing Electronic Devices Institute, China
Polasi Phani Kumar, SRM Institute of Science and Technology, India
Long Yang, Xidian University, China
Cai Jiaxin, Xiamen University of Technology, China
Sheng Liu, China Mobile, China

ATTENDEE INSTRUCTIONS

FOR EVERYONE

- The whole conference program is scheduled in **Beijing Time (UTC+8)**.
- Please double check your Test Time and Presentation Time.
- **English** will be the only language used for presentation;
- **August 19: Online Test**
- **August 20: Opening Ceremony, Keynote Speeches, Parallel Sessions**
- **August 21-22: Parallel Sessions**
- Each keynote speech is within **45 Mins**.
- Each invite presentation is allocated with **20 Mins** (18 Mins presentation, 2 Mins for Q&A), please prepare your **English** PPT in advance.
- Each oral presentation is allocated with **15 Mins** (13 Mins presentation, 2 Mins for Q&A), please prepare your **English** PPT in advance.

FOR ONLINE PRESENTERS

Please prepare:

- Computer with **working camera** and **audio system**;
- **Stable Internet Connection** (wired connection is preferable);
- **Quite place** with proper lighting;
- **Rename** yourself with **Session Number +Paper ID+Name**, (eg. S1+T001+Lily LI), before entering meeting room.
- If you are **Conference Chair, Keynote**

Speaker or Session Chair, please **rename** yourself with CC+Name, or KN+Name, or SC+Name.

- Enter **15 Mins prior** to your session in ZOOM, you cannot connect the meeting until "host" starts it.

Test Day

August 19 will be the **TEST DAY**, to help delegates know better how to use ZOOM, we will check together:

If the **Camera** and **Audio system** works well; Try to **Share Screen**; **Rename** yourself.

Formal Day

Please **display your camera** during the whole conference, especially at your presentation time.

Group Photo Section will be at the morning break time on **August 20**, and there will be group photo time at the end of each session.

One Best Presentation will be chosen from each session.

Certificates and **Receipts** will be emailed after the conference.

Zoom Tool

The online conference will utilize Zoom video conferencing.

*Room A Meeting ID: 853 9519 5957 ([Link](#))

*Room B Meeting ID: 830 3010 7698 ([Link](#))

*Room C Meeting ID: 851 5181 0856 ([Link](#))

*Room D Meeting ID: 833 1656 4428 ([Link](#))

*Room E Meeting ID: 842 3244 1266 ([Link](#))

*Room F Meeting ID: 880 2153 8721 ([Link](#))

KEYNOTE SPEAKERS



8:40-9:25, August 20 (UTC+8)
ZOOM ID: 853 9519 5957

Prof. Tianyou Chai

Northeastern University, China

Academician of the Chinese Academy of Engineering, IEEE Fellow, IFAC Fellow

Speech Title: Development Directions of Industrial Intelligence

Abstract: In this talk, the role of industrial automation and information technology in the industrial revolutions is analyzed, as well as the current status and main problems in automation and information for manufacturing enterprise. The connotation of industrial intelligence and the challenges in realizing industrial intelligence are put forward. Based on the analysis and application cases of industrial internet and industrial artificial intelligence, the technical basis of industrial intelligence is presented. Then, the research directions, ideas and methods of industrial intelligence are proposed.

BIO: Tianyou Chai received the Ph.D. degree in control theory and engineering in 1985 from Northeastern University, Shenyang, China, where he became a Professor in 1988. He is the founder and Director of the Center of Automation, which became a National Engineering and Technology Research Center and a State Key Laboratory. He is a member of Chinese Academy of Engineering, IFAC Fellow and IEEE Fellow. He has served as director of Department of Information Science of National Natural Science Foundation of China from 2010 to 2018.

His current research interests include modeling, control, optimization and integrated automation of complex industrial processes.

He has published 297 peer reviewed international journal papers. His paper titled Hybrid intelligent control for optimal operation of shaft furnace roasting process was selected as one of three best papers for the Control Engineering Practice Paper Prize for 2011-2013. He has developed control technologies with applications to various industrial processes. For his contributions, he has won 5 prestigious awards of National Natural Science, National Science and Technology Progress and National Technological Innovation, the 2007 Industry Award for Excellence in Transitional Control Research from IEEE Multiple-conference on Systems and Control, and the 2017 Wook Hyun Kwon Education Award from Asian Control Association.



9:25-10:10, August 20 (UTC+8)
ZOOM ID: 853 9519 5957

Prof. Ke Wu

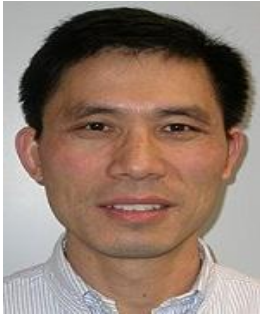
University of Montreal, Canada

Academician of the Canadian Academy of Engineering (CAE), IEEE Fellow

Speech Title: Towards Batteryless IoT Networking and Sensing: Radiative Wireless Power Transfer and Harmonic Backscattering

Abstract: One essential foundation of IoT technology is the development of numerous interrelated IoT sensing and communicating nodes distributed extensively in our environment. Conventional batteries/cords-based powering solutions are certainly not an acceptable long-term and sustainable solution, considering the incurred cost, feasibility, and most of all, environmental impact. A promising and “green” powering alternative solution for IoT networking and sensing devices is recycling omnipresent ambient RF energy. The concept of harnessing wireless energy for powering IoT systems requiring a higher power supply is also feasible through dedicated wireless power base-stations, which can be an effective supplement. To realize RF power scavenging and recycling, this talk focuses on two mainstream techniques: radiative or far-field wireless power transfer (WPT) and harmonic backscattering. As an exploratory study, a survey of ambient RF energy density in the core areas of Montreal is presented first. Then, design and optimization techniques regarding low-power far-field rectifiers and fully passive harmonic transponders are presented.

BIO: Professor of electrical engineering at École Polytechnique (University of Montreal), Dr. Ke Wu is Industrial Research Chair in Future Wireless Technologies and the Director of the Poly-Grames Research Center. He was the Canada Research Chair in RF and millimeter-wave engineering and the Founding Director of the Center for Radiofrequency Electronics Research of Quebec. He has authored/co-authored over 1400 referred papers, and a number of books and book chapters and filed more than 80 patents. Dr. Wu was the general chair of the 2012 IEEE MTT-S International Microwave Symposium, and the 2016 President of the IEEE Microwave Theory and Techniques Society (MTT-S). He also served as the inaugural North American representative in the General Assembly of the European Microwave Association. He was the recipient of many awards and prizes. He was an IEEE MTT-S Distinguished Microwave Lecturer. Dr. Ke Wu is a Fellow of the IEEE, the Canadian Academy of Engineering, the Royal Society of Canada (Academy of Science), and the German National Academy of Science and Engineering.



10:30-11:15, August 20 (UTC+8)
ZOOM ID: 853 9519 5957

Prof. Guifang Li

The University of Central Florida, USA
IEEE, OSA, SPIE Fellow

Speech Title: Few-Mode Photonic Systems

Abstract: Optical devices and systems such as lasers and fiber-optic communication systems have traditionally operated in single mode. Recently, spatial modes have been recognized as an underutilized resource that can improve system performance. This talk will present recent research in few-mode photonic systems for applications in optical fiber communication, free-space optical communication, secure communication, microwave photonics and LiDAR.

BIO: Guifang Li received his Ph.D. degree from The University of Wisconsin at Madison and is Professor of Optics and ECE at The University of Central Florida. He is the recipient of the NSF CAREER award and the Office of Naval Research Young Investigator award. Dr. Li is a Fellow of IEEE, the Optical Society (OSA), SPIE and the National Academy of Inventors. He currently serves as Editor-in-Chief of Optica's Advances in Optics and Photonics.



11:15-12:00, August 20 (UTC+8)
ZOOM ID: 853 9519 5957

Prof. David J. Moss

Swinburne University of Technology, Australia

Fellow of the IEEE Photonics Society, Optical Society of America, and the SPIE

Speech Title: Ultra-high Bandwidth Applications of Integrated Kerr Optical Frequency Microcombs

Abstract: This talk will focus on our work on ultrahigh bandwidth applications of Kerr microcombs to optical neural networks, optical data transmission and microwave photonics. Convolutional neural networks (CNNs) are a powerful category of artificial neural networks that can extract the hierarchical features of raw data to greatly reduce the network complexity and enhance the accuracy for machine learning tasks such as computer vision, speech recognition, playing board games and medical diagnosis. Optical neural networks can dramatically accelerate the computing speed to overcome the inherent bandwidth bottleneck of electronics. We use a new and powerful class of micro-comb called soliton crystals that exhibit robust operation and stable generation as well as a high intrinsic efficiency with an extremely low spacing of 48.9 GHz. We demonstrate a universal optical vector convolutional accelerator operating at 11 Tera-OPS/s (TOPS) on 250,000 pixel images. We use the same hardware to form a deep optical CNN, achieving successful recognition of full 10 digits. We also report world record high data transmission over standard optical fiber from a single optical source, at 44.2 Terabits/s over the C-band. We achieve error free transmission across 75 km of standard optical fiber in the lab and over a field trial with a metropolitan optical fiber network. Our work demonstrates the ability of optical soliton crystal micro-combs to exceed other approaches in performance for the most demanding practical optical communications applications.

BIO: David J. Moss (S'83–M'88–SM'09–F'16) received the B.Sc. degree in physics from the University of Waterloo, Waterloo, ON, Canada, and the M.Sc. and Ph.D. degrees in nonlinear optics from the University of Toronto, Toronto, ON, in 1983 and 1988, respectively. He is the Director of the Optical Science Centre with the Swinburne University of Technology, Melbourne, Australia, leading research programs in integrated nonlinear nanophotonics, microwave photonics, telecommunications, quantum optics, biophotonics, renewable energy, and other areas. He has about 600 journal/conference papers including two Nature, a Science, eight Nature Photonics, and five Nature Communications papers. Dr. Moss received the 2011 Australian Museum Eureka Science Prize and the Google Australia Award for innovation in computer science. He has been active on many conference committees, including the General Program Chair of OSA Integrated Photonics Research in Vancouver, July 2016, and the General Chair in New Orleans, 2017. He is a Fellow of the IEEE Photonics Society, the Fellow of the Optical Society of America, and the SPIE.

AGENDA OVERVIEW

Day 1--Fri. | August 19, 2022

Online Delegates Zoom Test

Time	Arrangement	Zoom Meeting ID
09:30-10:30	Keynote and Session Chair Test	ID: 853 9519 5957
	Competition 1-3	ID: 830 3010 7698
	Session 1-4	ID: 851 5181 0856
10:30-11:00	Morning Break	
11:00-12:00	Session 5-8	ID: 853 9519 5957
	Session 9-12	ID: 830 3010 7698
	Session 13-16	ID: 851 5181 0856
12:00-13:30	Lunch Time	
13:30-15:00	Session 17-20	ID: 853 9519 5957
	Session 21-24	ID: 830 3010 7698
	Session 25-28	ID: 851 5181 0856
15:00-15:30	Afternoon Break	
15:30-17:30	Session 29-32	ID: 853 9519 5957
	Session 33-36	ID: 830 3010 7698
	Session 37-38	ID: 851 5181 0856
17:30	Dinner Time	

Day 2--Sat. | August 20, 2022

Opening Ceremony and Keynote Speeches

Time	Arrangement	Zoom Meeting ID
Host	Prof. Jie Cao, Lanzhou City University, China	ID: 853 9519 5957
Opening Ceremony		
8:30-8:40	Welcome Address: Prof. Rennian Li Lanzhou University of Technology, China	ID: 853 9519 5957
	Opening Address: Prof. Perry Ping Shum South University of Science and Technology, China	
	Program Address: Prof. Huiqin Wang Lanzhou University of Technology, China	
Keynote Speeches		
8:40-9:25	Keynote 1: Prof. Tianyou Chai Northeastern University, China	ID: 853 9519 5957
9:25-10:10	Keynote 2: Prof. Ke Wu University of Montreal, Canada	
10:10-10:30	Online Group Photo & Coffee Break	
Host	Prof. Xiaoxu Li, Lanzhou University of Technology, China	ID: 853 9519 5957
Keynote Speeches		
10:30-11:15	Keynote 3: Prof. Guifang Li The University of Central Florida, USA	ID: 853 9519 5957
11:15-12:00	Keynote 4: Prof. David J. Moss Swinburne University of Technology, Australia	
12:00-13:30	Lunch Time	

Competition and Parallel Sessions

13:30-15:30	Competition 1: Wireless Communication and Digital Network	ID: 853 9519 5957
	Competition 2: Computer and Multimedia Technology	ID: 830 3010 7698
	Session 1: Optoelectronic Devices (Track 10-1)	ID: 851 5181 0856
15:30-15:40	Coffee Break	
15:40-17:35	Competition 3: Electronic Devices and Optical Fiber Technology	ID: 853 9519 5957
	Session 2: Machine Learning and Artificial Intelligence (Track 8)	ID: 830 3010 7698
	Session 3: Optoelectronic Devices (Track 10-2) and Fiber Photonics Technology (Track 23)	ID: 851 5181 0856
18:00-19:00	Dinner Time	

Day 3--Sun. | August 21, 2022

Parallel Sessions

Time	Arrangement	Zoom Meeting ID
09:00-10:20	Session 4: Optical Communications and Networks (Track 1-1)	ID: 853 9519 5957
	Session 5: Underwater Communication (Track 6)	ID: 830 3010 7698
	Session 6: Optical Sensors (Track 11)	ID: 851 5181 0856
	Session 7: Neuromorphic Optics (Track 22)	ID: 833 1656 4428
	Session 8: Fiber-based Devices and Applications (Track 15-1)	ID: 842 3244 1266
10:20-10:40	Morning Break	
10:40-12:05	Session 9: Optical Communications and Networks (Track 1-2)	ID: 853 9519 5957
	Session 10: Advanced Optical Imaging (AOI) (Track 12)	ID: 830 3010 7698
	Session 11: Wireless Communication (Track 4-1)	ID: 851 5181 0856
	Session 12: Natural Language Processing and Knowledge Engineering (NLP-KE) (Track 13-1)	ID: 833 1656 4428
	Session 13: Fiber-based Devices and Applications (Track 15-2)	ID: 842 3244 1266
12:05-13:30	Lunch	
13:30-15:30	Session 14: Optical Communications and Networks (Track 1-3)	ID: 853 9519 5957
	Session 15: Space Communications, Navigation and Tracking (Track 2-1)	ID: 830 3010 7698
	Session 16: Wireless Communication (Track 4-2)	ID: 851 5181 0856
	Session 17: Natural Language Processing and Knowledge Engineering (NLP-KE) (Track 13-2)	ID: 833 1656 4428
	Session 18: Fiber-based Devices and Applications (Track 15-3)	ID: 842 3244 1266
15:30-15:40	Afternoon Break	

15:40-18:05	Session 19: Optical Communications and Networks (Track 1-4)	ID: 853 9519 5957
	Session 20: Space Communications, Navigation and Tracking (Track 2-2)	ID: 830 3010 7698
	Session 21: Wireless Communication (Track 4-3)	ID: 851 5181 0856
	Session 22: Application of Machine Learning in Image Processing (Track 3)	ID: 833 1656 4428
	Session 23: Fiber-based Devices and Applications (Track 15-4)	ID: 842 3244 1266
18:05-20:00	Dinner	

Day 4--Mon. | August 21, 2022

Parallel Sessions

Time	Arrangement	Zoom Meeting ID
09:00-10:30	Session 24: Ultrafast Photonics (Track 9-1)	ID: 853 9519 5957
	Session 25: Network Intelligent Information Processing (Track 19)	ID: 880 2153 8721
	Session 26: Visible Light Communication and Positioning (Track 21-1)	ID: 851 5181 0856
	Session 27: Hybrid Networks and Communication Technologies (Track 24-1)	ID: 842 3244 1266
10:30-10:40	Morning Break	
10:40-12:10	Session 28: Ultrafast Photonics (Track 9-2)	ID: 853 9519 5957
	Session 29: Network Security (Track 7-1)	ID: 830 3010 7698
	Session 30: Visible Light Communication and Positioning (Track 21-2)	ID: 851 5181 0856
	Session 31: Quantum Information and Related Quantum Technologies (Track 17-1)	ID: 833 1656 4428
	Session 32: Hybrid Networks and Communication Technologies (Track 24-2)	ID: 842 3244 1266
12:10-13:30	Lunch	
13:30-15:30	Session 33: Ultrafast Photonics (Track 9-3)	ID: 853 9519 5957
	Session 34: Network Security (Track 7-2)	ID: 830 3010 7698
	Session 35: Visible Light Communication and Positioning (Track 21-3)	ID: 851 5181 0856
	Session 36: Quantum Information and Related Quantum Technologies (Track 17-2)	ID: 833 1656 4428
	Session 37: Hybrid Networks and Communication Technologies (Track 24-3)	ID: 842 3244 1266
15:30-15:40	Afternoon Break	
15:40-17:40	Session 38: Wireless Network (Track 20)	ID: 830 3010 7698
18:00	Closing and Award Ceremony	ID: 853 9519 5957

TECHNICAL SESSIONS

13:30-15:15
August 20, 2022 **Competition 1: Wireless Communication and Digital Network**

ID: 853 9519 5957

Session Chairs: Kejun Jia, Lanzhou University of Technology
Zhicheng Dong, Tibet University
Zheng Yang, Fujian Normal University

13:30-13:45	N001	A Note on "Optimum Sets of Interference-Free Sequences With Zero Autocorrelation Zone"
		Presenter: Qiping Fang Xidian University
		Improved Bird Sound Classification Based on Deep Cascade Feature
13:45-14:00	N1013	Presenter: Jie Xie Jiangnan University
		Experimental Evaluation of Insider Threat Detection Methods Based on Temporal Representation
14:00-14:15	N1024	Presenter: Gaole Lu Northwestern Polytechnical University
		Performance Analysis of Full-duplex NOMA Assisted Satellite-terrestrial Systems with Hardware Impairments and Imperfect CSI
14:15-14:30	N1038	Presenter: Jinlong Zhao Gansu University of Political Science and Law
		An Improved Principal Component Analysis for Side-channel Attacks
14:30-14:45	N1143	Presenter: Haoming Bai Institute of Telecommunications Science and Technology
		A Synchronization Method for Optical Camera Communication
14:45-15:00	N1174	Presenter: Haijie Li Nanchang University
		A Reference Deployment of a Minimal Open-Source Private Industry and Campus 5G Standalone (SA) System
15:00-15:15	N1014	Presenter: Jörg Schuljak Technische Hochschule Lübeck

**13:30-15:15
August 20, 2022** **Competition 2: Computer and Multimedia Technology**

ID: 830 3010 7698

**Session Chairs: Chenfei Wu, Microsoft Research Asia
Yu Zhao, Southwestern University of Finance And Economics**

ASMOD: Adaptive Saliency Map on Object Detection

13:30-13:45 N1011

Presenter: Zhihong Xu

Northwestern Polytechnical University

Improving Text Classification for Auditing Application Using Adversarial Training and Chinese Pretrained Model

13:45-14:00 N1017

Presenter: Kai Hu

Jiangnan University

Character Identifier Spotting Based on Deep Learning in Video Surveillance Images

14:00-14:15 N1026

Presenter: Chun Feng

Northwestern Polytechnical University

Bidirectional LSTM and Attention for Depression Detection on Clinical Interview Transcripts

14:15-14:30 N1030

Presenter: Mingzheng Li

University of Science and Technology of China

The Impact of Computer Graphics on the Popularity of a Social Media Account

14:30-14:45 N1049

Presenter: Gamova Iryna

State University of Trade and Economics

Malicious Code Family Classification Method Based on Vision Transformer

14:45-15:00 N1102

Presenter: Shi Chen

Beijing University of Post and Telecommunications

RF Fingerprint Recognition Method Based on DBN-SVM

15:00-15:15 N1133

Presenter: Yixuan Yang

Lanzhou Jiaotong University

**15:40-17:25
August 20, 2022** **Competition 3: Electronic Devices and Optical Fiber Technology**

ID: 853 9519 5957

**Session Chairs: Xingyuan Xu, Beijing University of Posts and Telecommunications
Yanni Ou, Beijing University of Posts and Telecommunications**

15:40-15:55	N005	Path Planning of Mobile Robot Based on Dynamic Chaotic Ant Colony Optimization Algorithm
		Presenter: Xiaoting Li China University of Petroleum (East China)
15:55-16:10	N1108	Dual-wavelength Differential Cross Multiplication Method for Dynamic Cavity Length Interrogation of Fiber-optic Fabry-Perot Vibration Sensors
		Presenter: Xiongxing Zhang Xi'an Technological University
16:10-16:25	N1110	Analysis and Optimization of InP-InGaAsP MZI Modulators with Zinc Diffusion Effect
		Presenter: Ruoyun Yao Zhejiang University
16:25-16:40	N1128	1 μ m Kilowatt-scale MOPA Structure All-Fiber Laser
		Presenter: Baoqun Li Changchun University of Science and Technology
16:40-16:55	N1152	Localization of Fiber Cable with Distributed Acoustic Sensing
		Presenter: Yuyao Wang University of Electronic Science and Technology of China
16:55-17:10	N1177	L-band 1000W Single Chip Quasi Monolithic GaN Broadband Amplifier for Communication
		Presenter: Shichang Zhong Nanjing Electronic Devices Institute
17:10-17:25	N1124	A Cubature Kalman Filtering Algorithm for Robot Pose Estimation
		Presenter: Xiaoyue Sang Northwestern Polytechnical University

13:30-15:30
August 20, 2022

Session 1: Optoelectronic Devices (Track 10-1)

ID: 851 5181 0856

Session Chair: Hui Yu, Zhejiang University

13:30-13:50	Invite	Data-driven Models for the Inverse Design of Complex Multi-functional Metasurfaces
		Presenter: Wei Ma Zhejiang University
		Silicon Based Opto-electronic Integration
13:50-14:10	Invite	Presenter: Chenhui Li Zhejiang University/Zhejiang Lab
		High-temperature Reliable Quantum Dot Lasers for Silicon Photonic Integrated Circuits
14:10-14:30	Invite	Presenter: Xiaoguang Yang Institute of Semiconductors, CAS
		High Speed Directly Modulated DBR Lasers
14:30-14:50	Invite	Presenter: Song Liang Institute of Semiconductors, CAS
		Silicon-based Photonics Modulation Devices and System for Analog Optical Link
14:50-15:10	Invite	Presenter: Qiang Zhang Zhejiang Lab
		In-situ Laser Interference for the Nano-positioning of Quantum Dot Materials and Mode-manipulation of Microcavity Lasers
15:10-15:30	Invite	Presenter: Chaoyuan Jin Zhejiang University

**15:40-17:25
August 20, 2022**

Session 2: Machine Learning and Artificial Intelligence (Track 8)

ID: 830 3010 7698

Session Chair: Hong Yu, Ludong University

PVCLS-SI: Isogeny-based Certificateless Signature Scheme

15:40-15:55 N1020

Presenter: Li Li
Peking University

Speech Emotion Recognition Using Multi-Layer Perceptron Classifier

15:55-16:10 N1035

Presenter: Xiaochen Yuan
Macao Polytechnic University

Task Offloading based-on Deep Reinforcement Learning for Microgrid

16:10-16:25 N1063

Presenter: Fei Lin
Qilu University of Technology(Shandong Academy of Sciences

A Temporal Knowledge Graph Application for Network Security of
Power Monitoring System Based on KNN and SVM

16:25-16:40 N1098

Presenter: Hao Wang
State Grid Electric Power Research Institute

Design and Application of "5G+BeiDou/GNSS" Unmanned Inspection
Vehicle for Gas Safety

16:40-16:55 N1117

Presenter: Yixin Zhao
Beijing Normal University

Visual Scene Induced Three-stream Network for Efficient Action
Recognition

16:55-17:10 N1141

Presenter: Bo Sun
Beijing Normal University

Habituation Normalization: A Novel Way to Improve Network Training
on Resource-Constrained Devices

17:10-17:25 N1150

Presenter: Lulu Zhang
Fujian Normal University

A Forecasting Method of Photovoltaic Power Generation Based on
NeuralProphet and BiLSTM

17:25-17:40 N1157

Presenter: Feng Li
Lanzhou University of Technology

Local Descriptor based Deep Neural Network for Fault Information
Mining of Machines under Few-shot Samples

17:40-17:55 N1181

-A

Presenter: Feng Jia
Chang'an University

**15:40-17:35
August 20, 2022** **Session 3: Optoelectronic Devices (Track 10-2) and Fiber
Photonics Technology (Track 23)**

ID: 851 5181 0856

Session Chair: Dan Lu, Institute of Semiconductors, CAS

Photonic Integrated Chaotic Semiconductor Lasers

15:40-16:00 Invite

Presenter: Lijun Qiao
Taiyuan University of Technology

Free-form Micro-optics Enabling Ultra-broadband Low-loss
Fiber-to-chip Coupling

16:00-16:20 Invite

Presenter: Shaoliang Yu
Zhejiang Lab

High Power Photodiode for Microwave Photonics

16:20-16:40 Invite

Presenter: Zhanyu Yang
Beijing University of Posts and Telecommunications

Study of High Coupling Efficiency Micro-Lensed Fiber for Silicon
Photonics Chip Packaging

16:40-17:00 Invite

Presenter: Chun-Nien Liu
National Chung Hsing University, Taiwan
Theory and Application of Optical Fiber & Photonic Integrated
Devices

17:00-17:20 Invite

Presenter: Li Pei
Beijing Jiaotong University

Analysis and Optimization of Modified Uni-travelling-carrier
Photodiodes Under High Optical Power Condition

17:20-17:35 N1130

Presenter: Zhangwan Peng
Zhejiang University

August 21, 2022

09:00-10:20
August 21, 2022

Session 4: Optical Communications and Networks (Track 1-1)

ID: 853 9519 5957

Session Chair: Guijun Hu, Jilin University

09:00-09:20	Invite	Adaptive Intensity Transformation Enabled Phase Retrieval with High Accuracy and Fast Convergence
		<p>Presenter: Meng Xiang Guangdong University of Technology</p>
09:20-09:40	Invite	Toward Future High-capacity Long-haul Optical Fiber Communications Based on Space Division Multiplexing Technology
		<p>Presenter: Zhiqun Yang Tianjin University</p>
09:40-10:00	Invite	Optical Interconnect in Datacenters
		<p>Presenter: Lei Gao Huawei</p>
10:00-10:20	Invite	PON Toward the Future: Smart Trends and Bearing Xr&5g Small Cell
		<p>Presenter: Wu Jia China Unicom</p>

09:00-09:55

August 21, 2022

Session 5: Underwater Communication (Track 6)

ID: 830 3010 7698

Session Chair: Yanlong Li, Zhejiang University

Underwater Wireless Optical Communication System

09:00-09:20 Invite

Presenter: Liang Yang

Hunan University

Analysis of Scintillation Index of Vortex Light Superposition State
in Different Water Turbulence Environments

09:20-09:40 Invite

Presenter: Mingjun Wang

Xi'an University of Technology

Electromagnetic Fusion Underwater Positioning Technology Based
on E-R Method

09:40-09:55 N1031

Presenter: Zhixiao Liu

Yantai Research Institute of Harbin Engineering University

**09:00-10:20
August 21, 2022**

Session 6: Optical Sensors (Track 11)

ID: 851 5181 0856

Session Chair: Ping Lu, Huazhong University of Science and Technology

Optical Fiber Based Wind Speed Sensors

09:00-09:20 Invite

Presenter: Dong Xinyong

Guangdong University of Technology

Photoacoustic Detection Technologies

09:20-09:40 Invite

Presenter: Ping Lu

Huazhong University of Science and Technology

Fourier Contour Embedding Deep Learning for Arbitrary-Shaped
Target Detection

09:40-10:00 Invite

Presenter: Xueying Wang

National University of Defense Technology

DAS Based Fiber Optic Sensors for Underwater Acoustic Sensing

10:00-10:20 Invite

Presenter: Yang Lu

National University of Defense Technology

09:00-10:20
August 21, 2022

Session 7: Neuromorphic Optics (Track 22)

ID: 833 1656 4428

Session Chair: Xingyuan Xu, Beijing University of Posts and Telecommunications

All-optical Neural Network Based on Spatial Light Modulator and Atomic Ensemble

09:00-09:20 Invite

Presenter: Ying Zuo

Shenzhen Institute for Quantum Science and Engineering, Southern University of Science and Technology

Silicon Neuromorphic Photonics for Optical Communications

09:20-09:40 Invite

Presenter: Chaoran Huang

the Chinese University of Hong Kong

Integrated High-neuron-density Diffractive Neural Networks Performing Near-infrared Inference

09:40-10:00 Invite

Presenter: Elena Goi

University of Shanghai for Science and Technology

Photonic Neuromorphic Computing Based on Phase-change Materials

10:00-10:20 Invite

Presenter: Zengguang Cheng

Fudan University

**09:00-10:20
August 21, 2022**

**Session 8: Fiber-based Devices and Applications
(Track 15-1)**

ID: 842 3244 1266

Session Chair: Zinan Wang, University of Electronic Science and Technology of China

09:00-09:20 Invite

Measurement of Seepage Field with Specially Designed Fiber Sensor and Laser

Presenter: Xiaopeng Dong
Xiamen University

09:20-09:40 Invite

High-performance Distributed Acoustic Sensing with Coherent Detection

Presenter: Zinan Wang
University of Electronic Science and Technology of China

09:40-10:00 Invite

Performance Improvement of BOTDA by Digital Signal Processing

Presenter: Zhisheng Yang
Beijing University of Posts and Telecommunications

10:00-10:20 Invite

Experimental and Numerical Investigation on Pulse Oscillation in Dissipative Soliton Cavity

Presenter: Weiqing Gao
Hefei University of Technology

10:40-12:00
August 21, 2022

Session 9: Optical Communications and Networks (Track 1-2)

ID: 853 9519 5957

Session Chair: Ning Jiang, University of Electronic Science and Technology of China

	The Polarization Effects in the Ultra-high-baud Rate Optical Communication System
10:40-11:00 Invite	<p>Presenter: Xiaoguang Zhang Beijing University of Posts and Telecommunications</p>
11:00-11:20 Invite	<p>VCSEL Integrated with Mode Selection Grating to Improve Bit Error Rate in High Speed VCSEL-MMF Links</p> <p>Presenter: Xin Wei Institute of Semiconductors, Chinese Academy of Sciences</p>
11:20-11:40 Invite	<p>PON Evolution Path and 50G-PON Progress</p> <p>Presenter: Dekun Liu Huawei Technologies Co., Ltd.</p>
11:40-12:00 Invite	<p>TBA</p> <p>Presenter: Shikui Shen China Unicom</p>

**10:40-12:05
August 21, 2022** **Session 10: Advanced Optical Imaging (AOI) (Track 12)**

ID: 830 3010 7698

Session Chair: Xiaojun Yu, Northwestern Polytechnical University

10:40-11:00	Invite	Direct Imaging of Intraflagellar-transport Turnarounds Reveals That Motors Detach, Diffuse, and Reattach to Opposite-direction Trains Presenter: Zhiqing Zhang Nankai University
11:00-11:20	Invite	Noise Estimation Via the Optimal Truncation Variation for Multimode Fiber Single-pixel Imaging Presenter: Mingying Lan Beijing University of Posts and Telecommunications
11:20-11:35	N1068	Performance Analysis of Synthetic Aperture Ladar System with Photonic Lantern Coupling under Atmospheric Turbulence Presenter: Ming Liu Beijing University of Posts and Telecommunications
11:35-11:50	N1095	Joint Loss-Based Multi-Decoder Network for OCT Fluid Segmentation Presenter: Mingshuai Li Northwestern Polytechnical University
11:50-12:05	N1109	Distributed Channel Selection for Cooperative Localization in UAV Swarms Presenter: Mingxing Ke National University of Defense Technology

10:40-12:00 Session 11: Wireless Communication (Track 4-1)

ID: 851 5181 0856

Session Chair: Zheng Yang, Fujian Normal University

10:40-11:00	Invite	Orthogonal Time Frequency Space Modulation aided LEO Satellite Communications
		Presenter: Jia Shi Xidian University
11:00-11:20	Invite	Channel Estimation in Millimeter-wave Massive MIMO Systems with Hybrid Processing
		Presenter: Anzhong Hu Hangzhou Dianzi University
11:20-11:40	Invite	Adaptive Beam Design for mmWave UAV Communications in Windy Scenarios
		Presenter: Ziyue Liu Xihua University
11:40-12:00	Invite	The Semi-Persistent Scheduling for Industrial Internet of Things Communications
		Presenter: Enzhi Zhou Xihua University

**10:40-11:40
August 21, 2022**

**Session 12: Natural Language Processing and Knowledge
Engineering (NLP-KE) (Track 13-1)**

ID: 833 1656 4428

Session Chair: Caixia Yuan, Beijing University of Posts and Telecommunications

Personality Classification Via Weibo Based on Deep Learning Model

10:40-10:55 N1029

Presenter: Huixian Liu
Hefei University of Technology

Topic Enhanced Affective Response Generation in Multi-turn
Dialogues

10:55-11:10 N1066

Presenter: Yanying Mao
National University of Defense Technology

Generating Complex Questions from Knowledge Graphs with Query
Graphs

11:10-11:25 N1087

Presenter: Zimu Wang
Xi'an Jiaotong-Liverpool University

Relational Reasoning Model Based on Evidence Sentences for
Document-level Relation Extraction

11:25-11:40 N11008

Presenter: Jianguo Tang
Beijing University of Posts and Telecommunications

**10:40-12:00
August 21, 2022**

Session 13: Fiber-based Devices and Applications (Track 15-2)

ID: 842 3244 1266

Session Chair: Mingjiang Zhang, Taiyuan University of Technology

10:40-11:00	Invite	<p>Mid-infrared Supercontinuum Laser Source Based on Fluorotellurite Glass Fibers</p> <p>Presenter: Zhixu Jia Jilin university</p>
11:00-11:20	Invite	<p>Single-shot Revealing of Ultrafast Laser Evolution in the Time and Phase Domain</p> <p>Presenter: Li Zhan Shanghai Jiao Tong University</p>
11:20-11:40	Invite	<p>Presenter: Jia Ye Southwest Jiaotong University</p>
11:40-12:00	Invite	<p>Radiated Tilted Fiber Grating Based Spectrometer</p> <p>Presenter: Zhijun Yan Huazhong University of Science Technology</p>

**13:30-15:30
August 21, 2022**

Session 14: Optical Communications and Networks (Track 1-3)

ID: 853 9519 5957

Session Chair: Wu Jia, Reseach Institute of China Unicom

Wireless-Fibre in-premises Network

13:30-13:50 Invite

Presenter: Tony Zeng
Huawei Technologies Co., Ltd.

Recent Advances on Physical Layer Security for Optical Communications

13:50-14:10 Invite

Presenter: Xiaoxue Gong
Chongqing University of Posts and Telecommunications

Multi-dimensional Constellation Shaping Method in Optical Communication with High-order Modulation

14:10-14:30 Invite

Presenter: Liu Jianfei
Hebei University of Technology

Precise Calibration for High Baudrate Coherent Optical Transceiver

14:30-14:50 Invite

Presenter: Lei Deng
Huazhong University of Science and Technology

A Preliminary Study on Optical Chaos-based MIMO Radar

14:50-15:10 Invite

Presenter: Ning Jiang
University of Electronic Science and Technology of China (UESTC)
DSP Enhanced PAM Modulation for Short Reach Optical Links

15:10-15:30 Invite

Presenter: Li Yan
Beijing University of Post and Telecommunications

**13:30-15:05
August 21, 2022** **Session 15: Space Communications, Navigation and Tracking
(Track 2-1)**

ID: 830 3010 7698

Session Chair: Dan Chen, Xi'an University of Technology

13:30-13:50	Invite	<p>Propagation Characteristics of Partially Coherent OAM Beams for Turbulent Channels</p> <p>Presenter: Qiaochu Yang Changchun University of Science and Technology</p> <p>BER Performance of Staircase Codes for FTN-FSO Systems</p>
13:50-14:10	Invite	<p>Presenter: Yue Zhang Lanzhou University of Technology</p> <p>Parameter Measurement and Bit Error Rate Performance Evaluation of 13 km Atmospheric Turbulence Channel</p>
14:10-14:30	Invite	<p>Presenter: Haifeng Yao Beijing Institute of Technology</p> <p>TBA</p>
14:30-14:50	Invite	<p>Presenter: Huang Xinning Yangzhou University</p> <p>On the Performance Analysis of Mixed Underlay Cognitive RF/SIMOFSO System over κ-μ Shadowed and M Distribution Channels</p>
14:50-15:05	N1045	<p>Presenter: Haibo Wang China JiLiang University</p>

13:30-14:50

August 21, 2022

Session 16: Wireless Communication (Track 4-2)

ID: 851 5181 0856

Session Chair: Tao Deng, Soochow University

Machine Learning for Intelligent Wireless Communications

13:30-13:50 Invite

Presenter: Fang Fang
Western University

The Application of Deep Reinforcement Learning in Communication

13:50-14:10 Invite

Presenter: Hongjie Zhang
Sichuan Normal University

TBA

14:10-14:30 Invite

Presenter: Lisu Yu
Nanchang University

14:30-14:50 Invite

Challenge on mmWave Communication in High Mobility System

Presenter: Weixi Zhou
Sichuan Normal University

**13:30-14:45
August 21, 2022**

**Session 17: Natural Language Processing and Knowledge
Engineering (NLP-KE) (Track 13-2)**

ID: 833 1656 4428

Session Chair: Xiao Sun, Hefei University of Technology

13:30-13:45 N1104

Exploiting Emotion for Diverse Response Generation in Multi-turn Dialogues

Presenter: Yanying Mao

National University of Defense Technology

13:45-14:00 N1168

Sentiment Analysis of Online Catering User Comments Based on Random Forest Feature Extraction

Presenter: Yanqiu Liu

GuiZhou University of Commerce

14:00-14:15 N11004

Network Public Opinion Sentiment Analysis based on Bert Model

Presenter: Dong Qian

University of Electronic Science and Technology of China

14:15-14:30 N11002

An Improved Weighted KNN Algorithm About Text Classification Based on Spark Framework

Presenter: Tianming Yang

Guizhou University of Commerce

14:30-14:45 N11001

Parallel Fuzzy C-Means Text Clustering Algorithm Based on Improved Canopy

Presenter: Lan Luan

GuiZhou University of Commerce

**13:30-15:30
August 21, 2022**

Session 18: Fiber-based Devices and Applications (Track 15-3)

ID: 842 3244 1266

Session Chair: Chengbo Mou, Shanghai University

Ultrafast Fiber Lasers and Sensors

13:30-13:50 Invite

Presenter: Tonglei Cheng
Northeastern University

Fiber Random Lasers and Information Applications

13:50-14:10 Invite

Presenter: Weili Zhang
University of electronic science and technology of China

Sapphire Fiber Bragg Gratings Array for Ultra-High Temperature Sensing

14:10-14:30 Invite

Presenter: Jun He
Shenzhen University

Edge Detection Assisted Brillouin Optical Time-domain Analyzer to Locate Abnormal BFS Change at Fast Speed

14:30-14:50 Invite

Presenter: Liang Wang
Huazhong University of Science and Technology

Distributed Dynamic Strain and 3d Shape Sensing Based on OFDR

14:50-15:10 Invite

Presenter: Zhenyang Ding
Tianjin University

Characterization of Brillouin Dynamic Grating Based on Chaotic Laser

15:10-15:30 Invite

Presenter: Jianzhong Zhang
Taiyuan University of Technology

**15:40-17:50
August 21, 2022**

Session 19: Optical Communications and Networks (Track 1-4)

ID: 853 9519 5957

Session Chair: Wu Jia, Research Institute of China Unicom

Ultrafast Random Bit Generation Based on a Chaotic Laser Chip

15:40-16:00 Invite

Presenter: Pu Li

Taiyuan University of Technology

Adaptive Transmission Based on MIMO Mode Switching in
Atmospheric Composite Channel

16:00-16:20 Invite

Presenter: Dan Chen

Xi'an University of Technology

Application Research of FlexE and SPN Technology in New Electric
Power Communication Network

16:20-16:35 N1025

Presenter: Fang Li

China Academy of Information Communications Technology

Convergence Analysis of Iterative Demodulation and Decoding in Free
Space Optical Communication Based on EXIT Chart

16:35-16:50 N1027

Presenter: Hu Hao

Naval Aviation University

Parameter Set Model and Process Algorithm of FTTx Network Based
on Service Packages

16:50-17:05 N11007

Presenter: Jia Wu

China United Network Communications Corporation Limited

Real-time Transmission of ROF-FSO Hybrid System Using Software
Defined Radio

17:05-17:20 N1069

Presenter: Xiong Liu

Chongqing University of Posts and Telecommunications

The Theory and System of Alternate Variable Parameters of Chaotic
Laser Parallel Synchronization

17:20-17:35 N1132

Presenter: Yan Senlin

Nanjing Xiaozhuang University

A Network Traffic Pressure Link Tree of Broadband FTTx Network
Based on Service VLAN

17:35-17:50 N11006

Presenter: Jia Wu

China United Network Communications Corporation Limited

**15:40-17:25
August 21, 2022**

**Session 20: Space Communications, Navigation and Tracking
(Track 2-2)**

ID: 830 3010 7698

Session Chair: Minghua Cao, Lanzhou University of Technology

15:40-15:55 N008

Sparse Reconstruction Based on Tanimoto Coefficient for DOA Estimation in Compressed Sensing

Presenter: Luo Xu

China University of Petroleum(East China)

15:55-16:10 N1050

Physical Layer Security Performance of MIMO RF/FSO System Based on κ - μ /EW Distribution under the Effect of CCI

Presenter: Zihe Shen

China JiLiang University

16:10-16:25 N1115

Robust Anti-jamming Algorithm Based on New Navigation Signal

Presenter: Zukun Lu

National University of Defense Technology

16:25-16:40 N1116

An Indoor Map Matching Algorithm Based on Improved Particle Filter

Presenter: Haonan Jia

Southeast University

16:40-16:55 N1127

Communication Performance of OAM based FSO system in Weak Turbulence Environment

Presenter: Silun Du

Changchun University of Science and Technology

16:55-17:10 N1144

Spectrum Efficient Faster-than-Nyquist DCO-FBMC for Optical Wireless Communications

Presenter: Qingbin Peng

Lanzhou University of Technology

17:10-17:25 N1149

Research on RSS Based Multi Station Passive Location Method for Satellite Emitter

Presenter: Hang Dong

Space Engineering University

17:25-17:40 N1160

Securing SSK-based Communications via Friendly Jamming and Antenna Selection

Presenter: Hui Xu

Macao Polytechnic University

**15:40-17:55
August 21, 2022**

Session 21: Wireless Communication (Track 4-3)

ID: 851 5181 0856

Session Chair: Donghong Cai, Jinan University

An AM-LSTM Based Behavioral Model of Nonlinear Power Amplifiers

15:40-15:55 N1012

Presenter: Huan Yang

University of Electronic Science and Technology of China

Sum Rate Analysis and Power Allocation in Massive MIMO
Communications with Aerial and Terrestrial Users

15:55-16:10 N1052

Presenter: Enzhi Zhou

Xihua University

Design and Verification of Improved SPMA Algorithm in Multi-hop
Environment

16:10-16:25 N1058

Presenter: Zhe Li

China Academy of Launch Vehicle Technology

Intelligent and Reliable Coded Bit Stream Recovery Over Correlated
Fast Fading Channels

16:25-16:40 N1075

Presenter: Xiaoling Yang

Sun Yat-sen University

Research on Nomenclature of Scientific Software Variables in
Communication Field

16:40-16:55 N1081

Presenter: Wenwen Ma

Zhengzhou University

Differential Detection for Spatial Modulation System

16:55-17:10 N1120

Presenter: Jianxin Chai

Lanzhou University of Technology

Impact of PDCCH Position on Air Interface Latency

17:10-17:25 N1131

Presenter: Xiaoyin Zhao

China Telecom Research Institute of Beijing

5G Indoor Positioning Performance Evaluation Based on
Semi-Deterministic Channel Model

17:25-17:40 N1145

Presenter: Chenxin Zhang

Xiamen University

Resnet Based Modulation Pattern Recognition Method in Low SNR

17:40-17:55 N1176

Presenter: Zhenkai Qiang

Lanzhou Jiaotong University

15:40-17:55 August 21, 2022		Session 22: Application of Machine Learning in Image Processing (Track 3)
		ID: 833 1656 4428
Session Chair: Ke Zhang, North China Electric Power University		
		Deep Transfer Learning for Actions Recognition with WiFi Signals
15:40-15:55	N1015	Presenter: Minhao Ding Hubei Key Laboratory of Intelligent Wireless Communications
15:55-16:10	N1083	OCT Speckle Noise Reduction Based on a Self-supervised B2U Network Presenter: Chenkun Ge Northwestern Polytechnical University
16:10-16:25	N1114	Lifelong Learning for Human-Object Interaction Detection Presenter: Sixu Lu Beijing Normal University
16:25-16:40	N1118	Polarimetric ISAR Super-Resolution Based on Group Residual Attention Network Presenter: Mingdian Li National University of Defense Technology
16:40-16:55	N1119	Weakly Supervised Object Detection with Position Information of Convolution Neural Network Presenter: Bo Sun Beijing Normal University
16:55-17:10	N1148	Meter Recognition of Converter Station Based on the Improved YOLOX Presenter: Zhaoye Zheng North China Electric Power University
17:10-17:25	N1166	Multi-sensor Data Fusion and Feature Extraction for Cutting Tool Condition Monitoring: a Review Presenter: Riliang Liu Shandong University
17:25-17:40	N1180	Red, White, Crimson and Purple Tongue Diagnosis Based on Deep Learning Presenter: Jiaxin Cai Xiamen University of Technology
17:40-17:55	N1187	Shufflenetv2-based Coding Unit Partition In Intra Coding Presenter: Jianfei Liu Hebei University of Technology

**15:40-18:05
August 21, 2022**

Session 23: Fiber-based Devices and Applications (Track 15-4)

ID: 842 3244 1266

Session Chair: Shanglin Hou, Lanzhou University of Technology

Towards Optimal Laser Efficiency of Brillouin Random Fiber Lasers

15:40-16:00 Invite

Presenter: Liang Zhang
Shanghai University

16:00-16:20 Invite

Presenter: Dexin Ba
Harbin Institute of Technology

Ghost Reflection Processing Method in PON Branch Monitoring
Based on OTDR

16:20-16:35 N1054

Presenter: Chuanbiao Zhang
China United Network Communications Group Company Limited
An 8-FBGs Pressure Pad for COP Measurement of Plantar

16:35-16:50 N1147

Presenter: Jing Zhang
Wuhan University of Technology

Analysis of the Mode Field Evolution in Straight-bending Transition of
the Stress-type Segmented Cladding Large-Mode-Area Fiber

16:50-17:05 N1154-A

Presenter: Yajie Wang
Lanzhou University of Technology
Design of Chalcogenide Few-mode Fiber Based on LiNbO3 Cladding

17:05-17:20 N1161-A

Presenter: Bo Duan
LanZhou University of Technology

Numerical Investigation of Polarization-multiplexed Cavity Solitons in
Möbius Fiber Resonator

17:20-17:35 N1172

Presenter: Shijie Feng
China University of Geosciences (Wuhan)

All-fiber Supercontinuum Source with MOPA Structure

17:35-17:50 N11003

Presenter: Jiayi He
Beijing University of Technology

Long-distance Random Fiber Laser Sensing System with Wide
Sensing Bandwidth

17:50-18:05 N1139

Presenter: Shengtao Lin
University of Electronic Science and Technology of China, China

August 22, 2022

09:00-10:20
August 22, 2022

Session 24: Ultrafast Photonics (Track 9-1)

ID: 853 9519 5957

Session Chair: Peiguang Yan, Shenzhen University

09:00-09:20 Invite A Continuously Tunable Ultrafast Raman Soliton Source Based on Chalcogenide Glass Photonic Chip

Presenter: Qingyang Du
Zhejiang Lab
TBA

09:20-09:40 Invite **Presenter: Yufeng Song**
Shenzhen University

09:40-10:00 Invite Diode-pumped CaGdAlO₄-crystal-assisted Kerr-lens Mode-locked All-solid-state Pr:LiYF₄ laser

Presenter: Bin Xu
Xiamen University
TBA

10:00-10:20 Invite **Presenter: Chengbo Mou**
Shanghai University

**09:00-10:45
August 22, 2022**

Session 25: Network Intelligent Information Processing (Track 19)

ID: 880 2153 8721

**Session Chairs: Fuzhong Nian, Lanzhou University of Technology
Xinjian Xu, Shanghai University**

09:00-09:20	Invite	Cryptanalyze and Design Strong S-box Using 2D Chaotic Map and Apply to Irreversible Key Expansion Presenter: Hongjun Liu University of Jinan
09:20-09:40	Invite	Fractal Evolution in Internet Information Propagation Presenter: Yang Yang Lanzhou University of Technology
09:40-10:00	Invite	Synchronization of Reaction-diffusion Neural Network Via Boundary Control Presenter: Chuan Zhang Qufu Normal University
10:00-10:15	N002	A Novel Distributed CA System Based on Blockchain Presenter: Weijian Li Zhejiang University
10:15-10:30	N1047	Research on Offloading and Selection Scheme Based on SWIPT Terminals in Mobile Edge Computing Presenter: Jiemei Liu Qilu University of Technology
10:30-10:45	N11009	An Improved Method for Network Precise Synchronization of Link-16 Presenter: Ziqiang Wang Xijing University

09:00-10:20 **Session 26: Visible Light Communication and Positioning (Track**
August 22, 2022 **21-1)**

ID: 851 5181 0856

Session Chair: Mu Zhou, Chongqing University of Posts and Telecommunications

TBA

09:00-09:20 Invite **Presenter: Zhenghai Wang**
NanChang University

TBA

09:20-09:40 Invite **Presenter: Lei Qian**
Tiangong University

TBA

09:40-10:00 Invite **Presenter: Xintong Ling**
Southeast University

Color-Shift Keying Modulation Technology in Visible Light
Communications

10:00-10:20 Invite **Presenter: Zongyan Li**
China University of Mining and Technology

**09:00-10:20
August 22, 2022** **Session 27: Hybrid Networks and Communication Technologies
(Track 24-1)**

ID: 842 3244 1266

Session Chair: Yanni Ou, Beijing University of Posts and Telecommunications

09:00-09:20 Invite New-converged Transport Network Architecture and Key Technology
Development Trends Supporting Cloud-network Integration and
Computing Resource Scheduling

Presenter: Fang Li
China Academy of Information and Communication Technology
TBA

09:20-09:40 Invite **Presenter: Ruijie Zhu**
Zhengzhou University
Fusion of AI and Physics for Optical Networks

09:40-10:00 Invite **Presenter: Qunbi Zhuge**
Shanghai Jiao Tong University
Current Standardization Landscape on Quantum-enhanced Networks

10:00-10:20 Invite **Presenter: Zhangchao Ma**
University of Science and Technology Beijing

10:40-12:00
August 22, 2022

Session 28: Ultrafast Photonics (Track 9-2)

ID: 853 9519 5957

Session Chair: Bo Guo, Harbin Engineering University

10:40-11:00	Invite	Phase-matching-induced Near-chirp-free Solitons in Normal-dispersion Fiber Lasers
		Presenter: Dong Mao
		Northwestern Polytechnical University
		Ultrashort Pulse Generation from 2 μ m Fiber Lasers
11:00-11:20	Invite	Presenter: Jinzhang Wang
		Shenzhen University
		GHz Femtosecond Fiber Lasers and Their Applications
11:20-11:40	Invite	Presenter: Xiaoming Wei
		South China University of Technology
		Ultrafast Mid-infrared Fiber Lasers
11:40-12:00	Invite	Presenter: Chunyu Guo
		Shenzhen University

**10:40-12:10
August 22, 2022** **Session 29: Network Security (Track 7-1)**

ID: 830 3010 7698

Session Chair: Hao Zhang, Fujian Jiangxia University

10:40-10:55	N1018	Cryptanalysis Against Type-III Generalized Feistel Networks and Cryptanalysis Against SP Type Round Functions
		Presenter: Yi Zhang National University of Defense Technology Deep Security Analysis Model for Smart Grid
10:55-11:10	N1057	
		Presenter: Yao Wu State Grid Shanxi Electric Power Company Research on Zero Trust Access Control Model and Formalization based on Rail Transit Data Platform
11:10-11:25	N1089	
		Presenter: Wenjuan Yu Tongji University A Large-Capacity Coverless Steganography Based on Two-MSB and Artificial Immune System
11:25-11:40	N1094	
		Presenter: Di Xiao Chongqing University Intrusion Detection Model Using SSMOTE in Power Grid
11:40-11:55	N1100	
		Presenter: Yao Wu State Grid Shanxi Electric Power Company Spatio-Temporal Feature Encryption Malicious Traffic Detection via Attention Mechanism
11:55-12:10	N1101	
		Presenter: Lanting Wang Beijing University of Post and Telecommunications

10:40-12:00
August 22, 2022 **Session 30: Visible Light Communication and Positioning (Track 21-2)**

ID: 851 5181 0856

Session Chair: Xu Bao, Jiangsu University

		Performance Analysis of Layered OFDM-NOMA for Visible Light Communications
10:40-11:00	Invite	<p>Presenter: Baolong Li Nanjing University of Information Science and Technology TBA</p>
11:00-11:20	Invite	<p>Presenter: Xinke Tang Peng Cheng Laboratory TBA</p>
11:20-11:40	Invite	<p>Presenter: Shuai Ma China University of Mining and Technology Channel Measurement and Modeling for Visible Light Communications</p>
11:40-12:00	Invite	<p>Presenter: Pan Tang Beijing University of Posts and Telecommunications</p>

**10:40-12:00
August 22, 2022** **Session 31: Quantum Information and Related Quantum Technologies (Track 17-1)**

ID: 833 1656 4428

**Session Chairs: Jietai Jing, East China Normal University
Yin Cai, Xi'an Jiaotong University**

10:40-11:00 Invite Quantum Light Sources based on Atomic Ensemble and Their Applications

Presenter: Jietai Jing
East China Normal University

Optomechanical Dissipative Soliton

11:00-11:20 Invite

Presenter: Jing Zhang
Xi'an Jiaotong University

Round-Trip Quantum Clock Synchronization over 75km Fiber with Polarization-Entangled Photon Pairs

11:20-11:40 Invite

Presenter: Bo Liu
National University of Defense Technology

Distribution and Distillation of Gaussian Quantum Steering

11:40-12:00 Invite

Presenter: Xiaolong Su
Shanxi University

**10:40-12:10
August 22, 2022** **Session 32: Hybrid Networks and Communication Technologies
(Track 24-2)**

ID: 842 3244 1266

Session Chair: Yongli Zhao, Beijing University of Posts and Telecommunications

10:40-11:00	Invite	Adaptive Algorithms for Time-domain Equalizers in IM/DD Optical Fiber Communication Systems
		Presenter: Zhongwei Tan Beijing Institute of Technology
11:00-11:20	Invite	Long-haul SDM Transmission System Based on Multi-core Fiber Recirculating Loop
		Presenter: Tianwai Bo Beijing Institute of Technology
11:20-11:40	Invite	Practical Security of Quantum Key Distribution and Its Standardized Verification
		Presenter: Anqi Huang National University of Defense Technology
11:40-11:55	N1061	An Assessment and Design of Campus Network using Collapsed-Core Architecture
		Presenter: Jesus Paguigan Eulogio "Amang" Rodriguez Institute of Science and Technology
11:55-12:10	N1072	Research on the Network Slicing Delay Modeling Method for Electric Power Service Based on FlexE and MTN Technology
		Presenter: Yipeng Fu China Academy of Information Communications Technology (CAICT)

13:30-14:50
August 22, 2022

Session 33: Ultrafast Photonics (Track 9-3)

ID: 853 9519 5957

Session Chair: Kan Wu, Shanghai Jiaotong University, China

Pulsating Dynamics in a Pure-quartic Soliton Fiber Laser

13:30-13:50 Invite

Presenter: Zhi-Chao Luo

South China Normal University

Ultrafast Fiber Laser and Its Application on Chip

13:50-14:10 Invite

Presenter: Peiguang Yan

College of Physics and Optoelectronic Engineering, Shenzhen University

Actively Mode-locked Lasers with 2D Materials

14:10-14:30 Invite

Presenter: Zhipei Sun

Aalto university

Advances in Multi-wavelength Ultrafast Photonics

14:30-14:50 Invite

Presenter: Bo Guo

Key Lab of In-Fiber Integrated Optics of Ministry of Education of China, Harbin Engineering University

**13:30-15:30
August 22, 2022**

Session 34: Network Security (Track 7-2)

ID: 830 3010 7698

Session Chair: Yuanyuan Zhang, South China University of Technology

Cryptanalysis of Magpie Block Cipher

13:30-13:45 N1129

Presenter: Jinjie Huang

National University of Defense Technology

Research on Intrusion Detection Model Based on DAE- XGBoost

13:45-14:00 N1137

Presenter: Hang Zhao

Beijing Kedong Electric Power Control System Co., Ltd.

nnTaint: An Optimized Dynamic Taint Analysis Method Based on Neural Network

14:00-14:15 N1140

Presenter: Yuming Zhu

State Key Laboratory of Mathematical Engineering and Advanced Computing

Outsourced and Privacy-Preserving K-means Clustering Scheme for Smart Grid

14:15-14:30 N1146

Presenter: Yonghua Wu

Fujian Jiangxia University

CinfoFuzz: Fuzzing Method Based on Web Service Correlation Information of Embedded Devices

14:30-14:45 N1153

Presenter: Qi Feng

State Key Laboratory of Mathematical Engineering and Advanced Computing

Multi-dimensional User Data Security Aggregation in Energy Internet

14:45-15:00 N1163

Presenter: Qianqian Ma

Southeast University

An Identity Based Key Update Scheme for Energy Internet Edge Devices

15:00-15:15 N1164

Presenter: Junlun Wu

Southeast University

Research On Data Transmission And Fusion Method For Command And Control System

15:15-15:30 N1151

Presenter: Guangquan Feng

Shenyang Aerospace University

13:30-15:45 August 22, 2022		Session 35: Visible Light Communication and Positioning (Track 21-3)
		ID: 851 5181 0856
Session Chair: Bingcheng Zhu, Southeast University		
		TBA
13:30-13:50	Invite	Presenter: Wufei Wu Nanchang University
13:50-14:10	Invite	760Mbps Ultraviolet Wireless Communication Based on Transmitter with AlGaIn/InGaIn MQWs Presenter: Xin Li Nanjing University of Posts and Telecommunications
14:10-14:30	Invite	Commercialization of Visible Light Communication Presenter: Zhu Binbin HCCL
14:30-14:45	N1010	Receiving Power of Oblique Laser Links of Optical Mobile Communication System Presenter: Haotian Ling Southeast University
14:45-15:00	N1021	Theoretical Insight Into the Optimum Skewness-based Criteria for Inter-carrier Interference Mitigation in Multiband Visible Light Communication Systems Presenter: Zhe Wang Fudan university
15:00-15:15	N1080	Unitary Frequency-Time Coding for Visible Light Communications with Orthogonal Frequency Division Multiplexing System Presenter: Caihong Yu Fujian University of Technology
15:15-15:30	N1099	Neural Network Visible Light Indoor Location Based on Lambert Model Optimization Presenter: Junbo Chen Xi'an Technological University
15:30-15:45	N1111	Research on Channel Estimation Algorithm of NOMA-VLC System Based on Compressed Sensing Presenter: Yulong Tong Xi'an Technological University

**13:30-15:15
August 22, 2022**

Session 36: Quantum Information and Related Quantum Technologies (Track 17-2)

ID: 833 1656 4428

**Session Chairs: Ruifang Dong, National Time Service Center, Chinese Academy of Sciences
Pei Zhang, Xi'an Jiaotong University**

Recent Progress on Quantum Time Synchronization at NTSC

13:30-13:50 Invite

Presenter: Ruifang Dong

National Time Service Center, Chinese Academy of Sciences

Towards Atom Assembly on Nanostructures with Optical Tweezers

13:50-14:10 Invite

Presenter: Zhongzhong Qin

Shanxi University

Quantum Secure Universal Cryptography Using Quantum Permutation Pad

14:10-14:30 Invite

Presenter: Randy Kuang

Quantropi Inc.

Blind Quantum Computation using Single Qubit Gates

14:30-14:45 N1103

Presenter: Zheng Xing

Macao Polytechnic University

Influence of the E-layer of the Ionosphere on the Performance of Satellite-to-ground Quantum Communication

14:45-15:00 N1053

Presenter: Tao Liu

North China Electric Power University

OAM Mode Correlation in Three Dimensional Nonlinear Photonic Crystals

15:00-15:15 N1184-A

Presenter: Yu Qian

Nanjing University

**13:30-15:00
August 22, 2022**

**Session 37: Hybrid Networks and Communication Technologies
(Track 24-3)**

ID: 842 3244 1266

Session Chair: Zhongwei Tan, Beijing Institute of Technology

13:30-13:45 N1090

Research on Beidou New Generation Emergency Group
Communication Decision-Making Mechanism

Presenter: Wenjuan Liang
Guangdong Power Grid Co., LTD

13:45-14:00 N1091

Demands Analysis of Autonomy Levels Evaluation in 5G Bearer
Network

Presenter: Yu Wang
China Academy of Information Communications Technology (CAICT)

14:00-14:15 N1156

A Simple Efficient Policy to Reduce Broadcast Redundancy in Wired
Networks

Presenter: Wei Peng
National University of Defense Technology

14:15-14:30 N1167

Research on Integrated Detection and Identification Technology of
Radar and Communication Signals

Presenter: Liu Jun
The 723 Institute of CSIC

14:30-14:45 N11005

Improved CLDNN Signal Modulation Recognition Based on Feature
Fusion

Presenter: Zhenhua Guo
Lanzhou Jiaotong University

14:45-15:00 N1019

A FlexE Network Service and Slice Orchestration Simulation System
for Electric Power Communication Demands

Presenter: Xing Zhao
China Academy of Information Communications Technology (CAICT)

**15:40-17:40
August 22, 2022**

Session 38: Wireless Network (Track 20)

ID: 830 3010 7698

Session Chair: Jia Shi, Xidian University

A Data Offloading Strategy Based on UE Movement Prediction in MEC

15:40-15:55 N1055

Presenter: Yuguo Liu
Sichuan University

Resource Allocation for NOMA based OTFS transmission with
Heterogeneous Mobility Users

15:55-16:10 N1062

Presenter: Xialun Lin
Xidian University

Sum Rate Maximization for NOMA-Assisted UAV Systems with
Individual QoS Constraints

16:10-16:25 N1093

Presenter: Wenhui He
Army Engineering University of PLA

Specific Emitter Identification Based on Joint Wavelet Packet Analysis

16:25-16:40 N1113

Presenter: Zhenhan Zhao
Xidian University

Research on a Distributed Channel Load Sensing Algorithm Based on
SPMA Protocol

16:40-16:55 N1122

Presenter: Fang Sun
China Academy of Launch Vehicle Technology

Performance Evaluation of 5G Wireless Network Slices Carrying
Power Services

16:55-17:10 N1142

Presenter: Zhao Zhao
State Grid Hunan Electric Power Company Limited

Research on Working Mechanism and Key Parameters of SPMA
Protocol

17:10-17:25 N1123

Presenter: Fang Sun
China Academy of Launch Vehicle Technology

Deep Reinforcement Learning-Based Enhancement of SATMAC for
Reliable Channel Access in VANETs

17:25-17:40 N1170

Presenter: Ye Yu
Beijing Technology and Business University