



# 2024 IEEE 16th International Conference on Advanced Infocomm Technology



CO-SPONSORED BY



HOSTED BY



PATRONS



# Table of Contents

Welcome Message	1
Conference Schedule	2
Session Topics	4
Conference Venue	5
Practical Information	6
Onsite Presentation Guideline	7
Online Presentation Guideline	8
Organizing Committees	9
Plenary Speakers	12

---

## 17<sup>th</sup> August 2024-Afternoon

Session 1A	15	Session 1B	19
Session 2A	16	Session 2B	20
Session 3	17	Session 4	21
Best Student Paper Competition A	18	Best Student Paper Competition B	22

---

## 18<sup>th</sup> August 2024

Session 5A	23	Session 10A	29
Session 6A	24	Session 11	30
Session 7A	25	Session 12A	31
Session 8	26	Session 6B	32
Session 5B	27	Session 7B	33
Session 9	28	Poster Session	34

---

## 19<sup>th</sup> August, 2024

Online Session 10B	36	Online Session 1C	38
Online Session 12B	37		

# Welcome Message

We would like to welcome you to 2024 IEEE 16th International Conference on Advanced Infocomm Technology(ICAIT). ICAIT 2024 is sponsored by China Council SEN SYSC Jt. Chapter and IEEE Photonics Society, hosted by South-Central Minzu University, with support from Hefei University of Technology, Guangxi University, Chongqing University, Chongqing University of Posts and Telecommunications, Changchun University of Science and Technology, Jilin University, Macau University of Science and Technology, KTH Royal Institute of Technology, Auckland University of Technology, and etc.

The conference serves as a platform for researchers seeking to engage in interdisciplinary dialogues and collaborate on solving complex, multidisciplinary issues. A primary objective of the conference is to provide exceptional mentoring opportunities for all participants.

In the upcoming ICAIT event, attendees can look forward to two engaging plenary talks, a diverse range of 3 plenary speeches, over 70 invited presentations, 8 parallel sessions, 1 poster session, and 2 best student paper competitions. The program is carefully curated to attract leading researchers across different domains, focusing on the latest advancements in highly demanding and innovative fields.

- Optical Fiber Communication and Networks
- Fiber and Sensor Technologies
- Optical Wireless Communication and Networks
- Microwave Photonics
- Fiber Laser Technologies and Applications
- Micro & Nano Optical Devices and Sensing
- Semiconductor Optoelectronic Devices
- Signal, Information and Data Processing for Communications
- Optical Imaging Technologies and Applications
- Visual Analysis and Machine Learning
- Space Communications, Navigation and Tracking
- Information Security

We greatly value your participation and look forward to your insightful vision and thoughts. We are grateful for the strong support of the Organizing Committee, the Sponsors, and the respective Technical Committees, which are vital to the success of the conference.

Finally, we would like to extend our most sincere congratulations and acknowledgment to all the authors, speakers and reviewers for a job well done. We are looking forward to meeting you all.

## ICAIT 2024 Organizing Committee

August 16-19, 2024

[www.ica.it.org](http://www.ica.it.org)

# Conference Schedule

## 16<sup>th</sup> August 2024-Whole Day

10:00-17:00	Sign in & Collecting Materials	Hotel Lobby
10:00-12:00	Test for Online Sessions	ZOOM Online Room

## 17<sup>th</sup> August 2024-Morning

Movenpick Grand Ballroom | 2F

Host: Prof. Chunyong Yang, South-Central Minzu University, China

9:00-9:05	Opening Remarks	Prof. Perry Ping SHUM, Southern University of Science and Technology, China <i>Fellow of IEEE, SPIE, OSA; President of IEEE Photonics Society</i>
9:05-9:10	Welcome Address	Prof. Fajun Song, South-Central Minzu University, China
9:10-9:50	Plenary Speech I	Prof. Jianquan Yao, Tianjin University, China <i>Academician of Chinese Academy of Sciences</i> <i>"Discussion on the Technical Support Application of Terahertz Communication Technology in Low Altitude Economy"</i>

### 9:50-10:30 Group Photo & Coffee Break

10:30-11:10	Plenary Speech II	Prof. Xiaopeng Shao, Xidian University, China <i>"Future-proof Imaging: Computational Imaging"</i>
11:10-11:50	Plenary Speech III	Prof. Shugong XU, Shanghai University, China <i>IEEE Fellow</i> <i>"6G+AI: From LLM to RAN Evolution"</i>

### 11:50-13:30 Conference Lunch Chef Theater | 1F

## 17<sup>th</sup> August 2024-Afternoon

	Wuhan Hall   3F	Xuan En Hall   3F	Lai Feng Hall   3F	Yi Chang Hall   3F
	<b>Session 1A</b>	<b>Session 2A</b>	<b>Session 3</b>	<b>Best Student Paper Competition A</b>
13:30-15:30	Yang Hua	Hui Yang	Hongyan Fu	A3922
	Yuxin Xu	Yunqi Liu	Chen Chen	A1594
	Lu Zhang	Jindong Wang	Qinghua Tian	A6767
	Yukui Yu	Huijuan WU	Zhi Liu	A8253
	Xin Li	Zhilin Xu	Jianyang Shi	A310004
	Zhaopeng Xu	Nian Fang	Peng Zhang	
			Haifeng Yao	

### 15:30-16:00 Coffee Break

	Session 1B	Session 2B	Session 4	Best Student Paper Competition B
16:00-18:00	Jingjing Zheng	Chunying Guan	Yang Chen	A30022
	Jianping Li	Yanan Zhang	Jianghai Wo	A8326
	Zuxing Zhang	Xiaobei Zhang	Zhiqiang Fan	A8351
	Bitao Pan	Hao Pan	Yitang Dai	A7285
	Xiangpeng Zhu	Qian Li	Bin Wang	A9771
	Chu-Sing Yang	Quandong Huang		A311001
		Cunzheng Fan		

### 18:30-20:00 Gala Dinner & Awards Ceremony Movenpick Grand Ballroom | 2F Host: Prof. Chunyong Yang, South-Central Minzu University, China





## 18<sup>th</sup> August 2024

	Wuhan Hall   3F	Xuan En Hall   3F	Lai Feng Hall   3F	Yi Chang Hall   3F
	<b>Session 5A</b>	<b>Session 6A</b>	<b>Session 7A</b>	<b>Session 8</b>
9:30-11:50	Leilei Shi	Yuanhong Yang	Chao Shen	Li Pei
	Liqiang Zhang	Xuechao Yu	Huijuan Niu	Xiaojing Gao
	Peiguang Yan	Naidi Cui	Feng Li	Jinlong Wei
	Xuwen Shu	Fan Shi	Shuang Zheng	Xia Zhang
	Meisong Liao	Wenqi Wei	Junjia Wang	Mengfan Cheng
	Zhiqiang Wang	Shuhui Liu	Li Shen	Lei Zhang
			Zhigang Yin	
<b>11:50-13:30</b>	<b>Conference Lunch</b>			<b>Chef Theater 1F</b>
	<b>Session 5B</b>	<b>Session 9</b>	<b>Session 10A</b>	<b>Session 11</b>
13:30-15:10	Weiqing Gao	Kainan Wang	A30064	A9766
	Junqing Zhao	Xiaolong Hu	A0298	A30031
	Yiyang Luo	Xian Feng	A30053	A6856
	Fei Liu		A4653	A30042
	Junwen Zhang		A312001	A1216
			A317005	A5640
<b>15:10-15:40</b>	<b>Coffee Break</b>			
	<b>Session 12A</b>	<b>Session 6B</b>	<b>Session 7B</b>	<b>Poster</b>
15:40-17:30	A3621	A8779	A2189	A6980, A0526, A5608, A6974, A4751, A2075, A4918, A1369, A4787, A30833, A4805
	A7395	A2561-A	A1446-A	
	A3731	A0015	A9757	
	A313001	A4764	A5618	
	A6934	A0730	A6361	
	A9234	A4764	A3859	
<b>17:40-19:00</b>	<b>Conference Dinner</b>			<b>Chef Theater 1F</b>
<b>19<sup>th</sup> August, 2024</b>				
7:00-18:00	<b>Enshi Grand Canyon</b>			

## 19<sup>th</sup> August, 2024



	9:30-11:35 Online Session 10B	13:30-15:20 Online Session 12B	16:00-17:45 Online Session 1C
9:30-17:45	Yeyu Tong	Peng Yu	A0491
	A1399	A9704	A4206
	A1755	A1119	A2536
	A5730	A4793	A6066
	A7170	A9614	A7813
	A8522	A9756	A8586
	A1128	A6526	A9871

# Session Topics

**Session 1:** Optical Fiber Communication and Networks

**Session 2:** Fiber and Sensor Technologies

**Session 3:** Optical Wireless Communication and Networks

**Session 4:** Microwave Photonics

**Session 5:** Fiber Laser Technologies and Applications

**Session 6/ Best Student Paper Competition B:** Micro & Nano Optical Devices and Sensing

**Session 7:** Semiconductor Optoelectronic Devices

**Session 8/ Best Student Paper Competition A:** Signal, Information and Data Processing for Communications

**Session 9:** Optical Imaging Technologies and Applications

**Session 10:** Visual Analysis and Machine Learning

**Session 11:** Space Communications, Navigation and Tracking

**Session 12:** Information Security

**Online ZOOM ID:** 848 9924 2762 | **Link:** <https://us02web.zoom.us/j/84899242762>

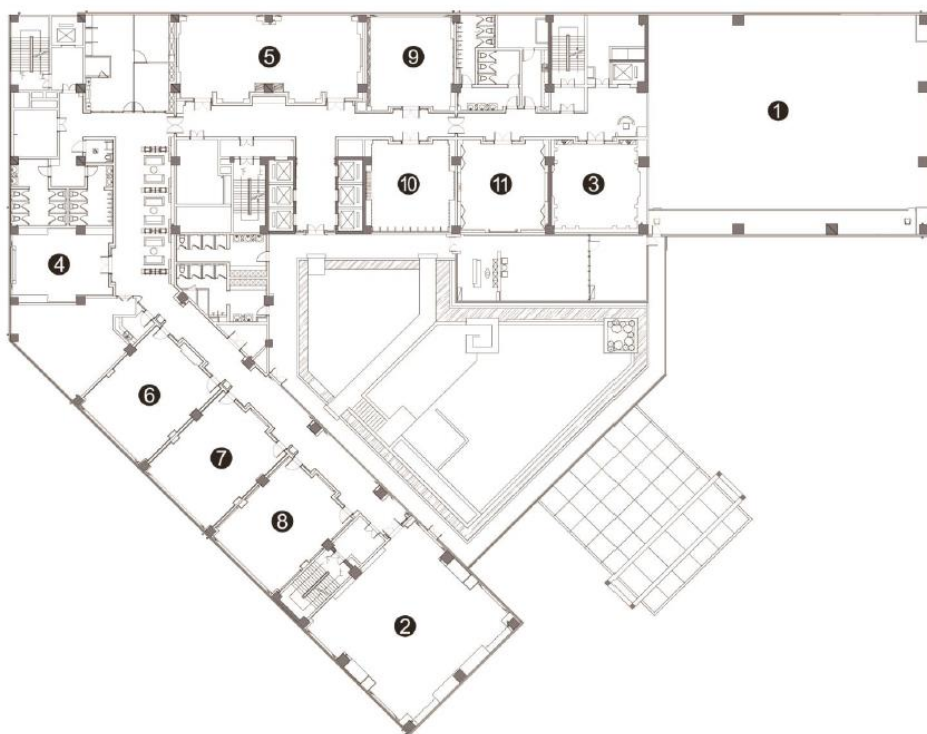
# Conference Venue



## Movenpick Hotel Enshi

Add: No 6 Jin Gui Avenue, 445000 Enshi, China

### Conference Room Guide



- ① Movenpick Grand Ballroom

---

- ② Enshi

---

- ③ Lichuan

---

- ④ Jianshi

---

- ⑤ Wuhan

---

- ⑥ Yichang |

---

- ⑦ Xuanen

---

- ⑧ Laifeng

---

<b>Movenpick Grand Ballroom</b>	<b>Wu Han Hall</b>	<b>Xuan En Hall</b>	<b>Lai Feng Hall</b>	<b>Yi Chang Hall</b>
2F	3F	3F	3F	3F

# Practical Information

## Conference Registration

The conference registration fee includes admission to all plenary sessions, invited sessions and parallel sessions. It also includes lunch, coffee breaks and the dinner on the 17th-18th, August 2024.

## Registration/Information Desk

Friday, 16th August 2024, 10:00-17:00, Main Lobby Atrium at Movenpick Hotel Enshi

## Personal Belongs Safety

Please take care of your safety and all personal belongs and wear your name tags during the whole conference and lock the door when you leave the room or take a break. No responsibility or liability is accepted by conference organizer in respect of any loss or damage.

Please turn your mobile phone to silent before the meeting starts to keep the venue quiet.

## Transportation Guide

Enshi Xujiaping Airport to Hotel	2.5 km
Enshi Railway Station to Hotel	6 km
Enshi Grand Canyon to Hotel	60 km
Enshi TuSiCheng/TUJIA GIRL'S Town to Hotel	5 km

## Dress Code

All participants are required to dress formally.

Casual wear is unacceptable. National formal dress is acceptable.

## The Weather Situation of Enshi during 16-19<sup>th</sup> August 2024

Average daily minimum temperature


23°C


Average daily highest temperature

35°C

\*Umbrellas recommended

## Social Media

 [ica-it-conf@outlook.com](mailto:ica-it-conf@outlook.com) / [ica-it\\_invited@vip.163.com](mailto:ica-it_invited@vip.163.com)

 [iconf-cs-2](#)

 ICAIT 2024 Photo Live



# Onsite Presentation Guideline

## Oral Presentations

- **Invited Speech Timing/ Parallel Competition Speech Timing:** a maximum of 20 minutes in total, including 3 minutes for Q&A; **Parallel Oral Speech Timing:** a maximum of 15 minutes total, including 3 minutes for Q&A. Please make sure your presentation is well timed. Please keep in mind that the program is full and that the speaker after you would like their allocated time available to them.
- You can use USB flash drive (memory stick), make sure you scanned viruses in your own computer. Each presenter is required to copy the slide file (PPT or PDF) to the computer in the corresponding session rooms 10 minutes before the session starts.
- It is suggested that you email a copy of your presentation to your personal in box as a backup. If for some reason the files can't be accessed from your flash drive, you will be able to download them to the computer from your email.
- Please note that each session room will be equipped with a LCD projector, screen, point device, microphone, and a laptop with general presentation software such as Microsoft Power Point and Adobe Reader. Please make sure that your files are compatible and readable with our operation system by using commonly used fronts and symbols. If you plan to use your own computer, please try the connection and make sure it works before your presentation.
- If your Power Point files contain videos or audios please make sure that they are well formatted and connected to the main files.

## Poster Presentations

- We expect that at least one author stands by the poster for (most of the time of) the duration of the poster session. This is essential to present your work to anyone interest into it.
- If you wish to leave your poster to attend a lecture, please leave a message on the board to inform visitors.
- Posters should be set-up at least 15 minutes before the session starts and removed at the end of the session. Left behind posters at the end of the session will be disposed of.
- The size of poster is A1, approximately 60cm\*80cm in color print. Posters must be in portrait format(height>width). This cannot be modified.
- Materials to hang the poster will be made available on-site. Our staff will be available onsite to assist you.

# Online Presentation Guideline

## Test before Formal Meeting

**Date: 16<sup>th</sup> August 2024**

Before the formal meeting, presenters shall join the test room to ensure everything is good.



## Online Zoom Information

16 <sup>th</sup> August, 2024	
Test for Online Sessions and Chairs	ZOOM: 848 9924 2762 Link: <a href="https://us02web.zoom.us/j/84899242762">https://us02web.zoom.us/j/84899242762</a>
19 <sup>th</sup> August, 2024	
Online Session 10B/12B/1C	ZOOM: 848 9924 2762 Link: <a href="https://us02web.zoom.us/j/84899242762">https://us02web.zoom.us/j/84899242762</a>

## Time Zone

**China Standard Time (UTC/GMT+8)**

please make sure that both the clock and the time zone on your computer are set to the correct China standard time.

## Equipment & Environment Needed

- A laptop with stable internet connection and camera
- Headphones
- A quiet place
- Proper lighting and background

## Platform

**ZOOM Download:**

<https://zoom.us/download>

## Presentation Tips

- Invited Speech Timing: a maximum of 20 minutes in total, including 3 minutes for Q&A. Please make sure your presentation is well timed.
- Parallel Presentation Timing: a maximum of **15 minutes** in total, including 3 minutes for Q&A.

## Conference Recording

The whole conference will be recorded. We appreciate you proper behavior and appearance.

The recording will be used for conference program and paper publication requirements. The video recording will be destroyed after the conference and it cannot be distributed to or shared with anyone else, and it shall not be used for commercial nor illegal purpose. It will only be recorded by the staff and presenters have no rights to record.





# Organizing Committees

## Steering Committee Chair

Perry Ping Shum, Southern University of Science and Technology  
Fellow of IEEE, SPIE, OSA; President of IEEE Photonics Society

## General Chairs

Xinliang Zhang, Xidian University  
Zhiwei Lv, Hebei University of Technology  
Shaoping Chen, South-Central Minzu University

## General Co-Chairs

Chunyong Yang, South-Central Minzu University  
Songnian Fu, Guangdong University of Technology  
Ming Tang, Huazhong University of Science and Technology

## Technical Program Committee Chairs

Zhaohui Li, Sun Yat-sen University  
Fei Xu, Nanjing University  
Minghong Yang, Wuhan University of Technology  
Xiaopeng Shao, Xidian University  
Gangxiang Shen, Soochow University  
Tianshu Wang, Changchun University of Science and Technology

## Technical Program Committee Co-Chairs

Qizhen Sun, Huazhong University of Science and Technology  
Min Liu, Chongqing University  
Tianye Huang, China University of Geosciences (Wuhan)  
Yanan Zhang, Northeastern University  
Jin Hou, South-Central Minzu University

## Local Organizing Chairs

Dajiang Wei, South-Central Minzu University  
Xianbo Sun, Hubei Minzu University  
Cuitao Zhu, South-Central Minzu University  
Yongqiang Cui, South-Central Minzu University  
Wenjun Ni, South-Central Minzu University

## Publicity Chairs

Yiyang Luo, Chongqing University  
Junjia Wang, Southeast University

## Technical Program Committee

Vincenzo De Angelis, Università Mediterranea di Reggio Calabria, Italy  
Hui Bi, Nanjing University of Aeronautics and Astronautics, China  
Andy Chan, City University of Hong Kong, China  
Hau Ping Chan, City University of Hong Kong, China  
Jiajia Chen, KTH Royal Institute of Technology, Sweden  
Bin Chen, Shenzhen University, China  
Jian Chen, Nanjing University of Posts and Telecommunications, China  
Nan-Kuang Chen, Liaocheng University, China  
Wei Chen, Fudan University, China





Xiao Chen, Minzu University of China, China  
 Xiaofei Cheng, MI Limited, Singapore  
 Chong-Yung Chi, National Tsing Hua University, China  
 Gaofeng Cui, Beijing University of Posts and Telecommunications, China  
 Daoxin Dai, Zhejiang University, China  
 Xianhua Dai, Sun Yat-sen University, China  
 Shaowei Dai, RFNet Technologies Pte. Ltd., Singapore  
 Jianji Dong, Huazhong University of Science and Technology, China  
 Xinyong Dong, Guangdong University of Technology, China  
 Jing Dong, Harvard Medical School, Wellman Center for Photomedicine, USA  
 Gang Feng, University of Electronic Science and Technology of China, China  
 Shane Feng, BROADCOM, USA  
 Hongyan Fu, Tsinghua-Berkeley Shenzhen Institute, China  
 Yi Gong, Southern University of Science and Technology, China  
 Tianxun Gong, University of Electronic Science and Technology of China, China  
 Yong Guo, Chengdu University of Technology, China  
 Shiyong Han, Nankai University, China  
 Jianzhong Hao, Institute for Infocomm Research, Singapore  
 Aaron Ho-Pui Ho, The Chinese University of Hong Kong, China  
 Jonathan Hu, Baylor University, USA  
 Xin Hu, Beijing University of Posts and Telecommunications, China  
 Chenn-Jung Huang, National Dong Hwa University, China  
 Tianye Huang, China University of Geosciences (Wuhan), China  
 Xiaohong Huang, Beijing University of Posts and Telecommunications, China  
 Ying Huang, RAIN TREE PHOTONICS PTE LTD, Singapore  
 Lam Quoc Huy, Nanyang Technological University, Singapore  
 Faisal Nadeem Khan, Tsinghua-Berkeley Shenzhen Institute, China  
 Supeng Leng, University of Electronic Science and Technology of China, China  
 Jianqiang Li, Kuaishou Technology, USA  
 Jun Li, Chengdu University of Technology, China  
 Xiaohui Li, Shaanxi Normal University, China  
 Juhao Li, Peking University, China  
 Rui Li, Robby Technologies, INC.  
 Xuejun Li, Auckland University of Technology, New Zealand  
 Zhenggang Lian, Yangtze Optical Electronics Co., China  
 Sheng Liang, Beijing Jiaotong University, China  
 Bo Lin, China Academy of Electronics and Information Technology, China  
 Rongping Lin, University of Electronic Science and Technology of China  
 Haitao Liu, East China Jiaotong University, China  
 Huanhuan Liu, Southern University of Science and Technology, China  
 Shuang Liu, Huazhong University of Science and Technology, China  
 Yunqi Liu, Shanghai University, China  
 Duan Liu, Hubei University of Technology, China  
 Jian Liu, JPT Opto-electronics, China  
 Ping Lu, Huazhong University of Science and Technology, China  
 Zhengqian Luo, Xiamen University, China  
 Chengbo Mou, Shanghai University, China  
 Xiaodan Pang, KTH Royal Institute of Technology, Sweden  
 Liyang Shao, Southern University of Science and Technology, China  
 Jianhua Shen, Nanjing University of Posts and Telecommunications, China  
 Xuewen Shu, Huazhong University of Science and Technology, China  
 Kenneth Shum, The Chinese University of Hong Kong (Shenzhen)  
 Hai-Zhi Song, Southwest Institute of Technical Physics, China  
 Guorong Sui, University of Shanghai for Science and Technology, China  
 Qizhen Sun, Huazhong University of Science and Technology, China  
 Zhipei Sun, Aalto University, Finland  
 Guangming Tao, Huazhong University of Science and Technology, China  
 Limin Tong, Zhejiang University, China  
 Aleksejs Udalcovs, Research Institute of Sweden (RISE), Sweden

Jian Wang, Huazhong University of Science and Technology, China  
Liang Wang, Beihang University, China  
Pu Wang, Beijing University of Technology, China  
Zinan Wang, University of Electronic Science and Technology of China  
Mengyu Wei, University of Macau, China  
Chongqing Wu, Beijing Jiaotong University, China  
Dehao Wu, Bournemouth University, UK  
Duanduan Wu, Ningbo University, China  
Kan Wu, Shanghai Jiao Tong University, China  
Xia Wu, Tongji University, China  
Xiangnong Wu, Shanghai Normal University, China  
Yik-Chung Wu, University of Hong Kong, China  
Li Xia, Huazhong University of Science and Technology, China  
Xiaosheng Xiao, Beijing University of Posts and Telecommunications, China  
Zhe Xiao, Institute of High-Performance Computing, A\*STAR, Singapore  
Kaikai Xu, University of Electronic Science and Technology of China, China  
Yu Yao, East China Jiaotong University, China  
Shanhong You, Soochow University, China  
Han Yu, Nanyang Technological University, Singapore  
Xianbin Yu, Zhejiang University, China  
Xiaojun Yu, Northwestern Polytechnical University, China  
Fan Zhang, Peking University, China  
Fangzheng Zhang, Nanjing University of Aeronautics and Astronautics, China  
Ke Zhang, University of Electronic Science and Technology of China, China  
Le Zhang, Advanced Digital Sciences Center, Singapore  
Lei Zhang, Massachusetts Institute of Technology, USA  
Lin Zhang, Tianjin University, China  
Meng Zhang, Beihang University, China  
Minglun Zhang, Beijing University of Posts and Telecommunications, China  
Weiwen Zhang, Guangdong University of Technology, China  
Xiaoguang Zhang, Beijing University of Posts and Telecommunications, China  
Yan Zhang, University of Oslo, Norway  
Jianhong Zhou, Xihua University, China  
Yuan Hai, Guangzhou Institute of Advanced Technology, CAS, China  
Yan Jiang, Guangdong Vocational College of Post and Telecom, China  
Xuhui (Tracy) Chen, Kent State University, USA  
Yanbing Yang, Sichuan University, China  
Qingxu Xiong, Beihang University, China  
Jiang Liu, Beijing Jiaotong University, China  
Qing-An Ding, Shandong University of Science and Technology, China  
Yongcheng Li, Soochow University, China  
Jefferson Costales, Eulogio "Amang" Rodriguez Institute of Science and Technology, Philippines

# Plenary Speaker I



## Prof. Jianquan Yao

Tianjin University, China

Academician of Chinese Academy of Sciences

Speech Title: Discussion on the Technical Support Application of Terahertz Communication Technology in Low Altitude Economy

Time: 9:10-9:50, 17<sup>th</sup>, August 2024 (GMT+8) Movenpick Grand Ballroom | 2F

**BIO** TBA

**ABSTRACT** TBA

# Plenary Speaker II



## Prof. Xiaopeng Shao

Xidian University, China

Speech Title: Future-proof Imaging: Computational Imaging

Time: 9:50-10:30, 17<sup>th</sup>, August 2024 (GMT+8)

Movenpick Grand Ballroom | 2F

**BIO** Xiaopeng Shao is a professor and the deputy Director of Xi'an Institute of Optics and Precision Mechanics of CAS. His main research interests include computational imaging technology, opto-electronic image processing and pattern recognition, and development and testing of opto-electronic instruments. He is currently an expert in a professional committee of a national ministry, an executive director of the Chinese Society for Optical Engineering, a board member of the Chinese Optical Society, vice chairman of the Shaanxi Optical Society, etc. Prof. Shao serves his editor-in-chief of Advanced Imaging and Deputy Editor-in-Chief of Ultrafast Science. He also serves as the editorial board of Optics and Precision Engineering, Laser & Optoelectronics Progress, Acta Photonica Sinica, Journal of Applied Optics, Systems Engineering and Electronics, etc. He has published more than 200 papers and holds more than 80 invention patents.

**ABSTRACT** Traditional optoelectronic imaging technology was developed in the industrial age and plays an important role in Industrial applications and scientific research applications. However, it is difficult for traditional imaging technologies to achieve further detection distances and higher resolution. Computational optical imaging technology integrates optics, mathematics, and information technology, breaking through the limits of physical information through optical encoding and decoding. It changes the traditional linear optical information transmission theory, makes full use of information channels, and improves information dimension, which opens the new horizons. The report deeply analyzes the development status of Computational optical imaging, and summarizes its connotation. Several typical imaging methods, scattering imaging, polarization imaging, and synthetic aperture imaging etc., is proposed to demonstrate the improvement ability compared with traditional imaging methods. Although the rapid rise of computational imaging is changing the pattern of vision science and demonstrating the infinite possibilities of imaging technology, there are still many challenges to overcome in the future, such as the basic theory of computational imaging and the design of orthogonal projection of light field information. With the continuous progress of algorithms and hardware, computational imaging will bring more impressive applications and breakthroughs, which will bring far-reaching impact on our life and work.

## Plenary Speaker III



### Prof. Shugong XU

Shanghai University, China

IEEE Fellow

Speech Title: 6G+AI: From LLM to RAN Evolution

Time: 11:10-11:50, 17<sup>th</sup> August 2024 (GMT+8)

Movenpick Grand Ballroom | 2F

**BIO** Shugong Xu is professor at Shanghai University, IEEE Fellow. In his 25+ years career in research (over 15 years in industrial research labs, including Sharp Labs of America, Huawei 2012 Labs and Intel Labs ), he had over 80 issued US/WO/CN patents and published more than 180 peer-reviewed research papers. He was awarded ‘National Innovation Leadership Talent’ by China government in 2013, was elevated to IEEE Fellow in 2015. Shugong is also the winner of the 2017 Award for Advances in Communication from IEEE Communications Society. Prof. Xu received his BS degree from Wuhan University, ME and PhD degrees from Huazhong University of Science and Technology (HUST). His current research interests include 6G wireless communication systems, deep learning and artificial Intelligence, etc.

**ABSTRACT** Among many new features of 5G and 5G-advance (5G -A), AI support is NOT considered very significant. However, in the 6G vision, AI capability has been considered one of the critical new features and capabilities, along with sensing capability etc. In this talk, we will discuss the recent advances in AI including LLM etc, 6G Native AI, and their impact to the new generation RAN evolution etc. We will discuss as well the new challenges and opportunities related to this evolution.



# Session 1A

## Optical Fiber Communication and Networks

Chair: Guijun Hu, Jilin University, China

17<sup>th</sup> August | 13:30-15:30

Wu Han Hall | 3F

Prediction and Optimization of Nonlinear Dynamic Processes in Optical Fibers Driven by Deep Learning

13:30-13:50 **Yang Hua**

Hunan University, China

Cross-layer Optimization with Physical-layer Impairment Estimation of Arbitrary Spectral-shaped Signals in C+L-band Elastic Optical Networks

13:50-14:10 **Yuxin Xu**

Zhejiang University of Technology, China

High Security and High Spectrum Efficiency Radio-over-Fiber Systems

14:10-14:30 **Lu Zhang**

Zhejiang University, China

Equalization Consideration in SerDes for Linear Drive Pluggable Optics

14:30-14:50 **Yukui Yu**

Xidian University, China

Joint Computing and Spectrum Resources Allocation in Computing Power Networks

14:50-15:10 **Xin Li**

Beijing University of Posts and Telecommunications, China

Advanced Neural Network-Based Equalization for Short-Reach Optical Communications

15:10-15:30 **Zhaopeng Xu**

Peng Cheng Laboratory, China





# Session 2A

## Fiber and Sensor Technologies

Chair: Yunqi Liu, Shanghai University, China

17<sup>th</sup> August | 13:30-15:30

Xuan En Hall | 3F

13:30-13:50 High-Efficient Resource Allocation Based on Deep Q-Network Enhanced Federated Learning in Slicing Packet Network for 5G ToB Service  
**Hui Yang**

Beijing University of Posts and Telecommunication, China

13:50-14:10 Broadband Long-period Fiber Grating Mode Converters  
**Yunqi Liu**  
Shanghai University, China

14:10-14:30 Precision Ranging and Ultrafast Imaging Using Comb-based Spectral Interferometry  
**Jindong Wang**  
Chongqing University, China

14:30-14:50 The AI-enabled Fiber-optic Distributed Acoustic Sensor  
**Huijuan WU**  
University of Electronic Science and Technology of China, China

14:50-15:10 Fiber Optic Interferometers for Highly Precise Displacement Measurement  
**Zhilin Xu**  
Huazhong University of Science and Technology, China

15:10-15:30 Time-delayed Optical Reservoir Computing and Application in Distributed Optical Fiber Sensing  
**Nian Fang**  
Shanghai University, China





# Session 3

## Optical Wireless Communication and Networks

Chair: Hongyan Fu, Tsinghua University, China

17<sup>th</sup> August | 13:30-15:50

Lai Feng Hall | 3F

13:30-13:50 VCSEL Enabled Integrated Communication and Sensing Systems  
**Hongyan Fu**  
Tsinghua University, China

13:50-14:10 Retroreflective Optical ISAC using OFDM  
**Chen Chen**  
Chongqing University, China

14:10-14:30 Wavefront Sensorless Adaptive Optics Technology Enabled by Artificial Intelligence  
**Qinghua Tian**  
Beijing University of Posts and Telecommunications, China

14:30-14:50 Analysis of Reliable Transmission Performance Optimization Methods for Satellite-to-Ground Laser Communication Links  
**Zhi Liu**  
Changchun University of Science and Technology, China

14:50-15:10 Key Technologies and Prospects of Intelligent Optical Wireless Communication for 6G  
**Jiayang Shi**  
Fudan University, China

15:10-15:30 Mitigation Technologies of Turbulence Effects in Terrestrial Wireless Optical Communication  
**Peng Zhang**  
Changchun University of Science and Technology, China

15:30-15:50 Adaptive Optical Power of Atmospheric Laser Communication Based on Reciprocity  
**Haifeng Yao**  
Beijing Institute of Technology, China

# Best Student Paper Competition A

Signal, Information and Data Processing for Communications

Chair: Quandong Huang, Guangdong University of Technology, China

17<sup>th</sup> August | 13:30-14:50

Yi Chang Hall | 3F

**A3922** Two Classes of Optimal Frequency Hopping Sequences with New Parameters  
Shifu Yang, Kaichuang Jiang, Zhe Xu, Tong Zhou  
13:30-13:50 **Presenter: Shifu Yang**  
Shanghai Radio Equipment Research Institute, China

**A1594** LSTM-Autoencoder for Faster-Than-Nyquist Optical Wireless MIMO  
Communication System  
Zhang Xingyu, Cao Minghua, Zhang Yue, Zhou Luxia, Zhang Lingyun, Wang Huiqin  
13:50-14:10 **Presenter: Xingyu Zhang**  
Lanzhou University of Technology, China

**A6767** Transmission Characteristics of Multiplexed OAM Beams in Time-Varying Non-  
Kolmogorov Turbulence  
Jin Hou, Ziyang Li, Siqi Zhang, Wengui Rao, Zhenzhou Cao, Chunyong Yang,  
Shaoping Chen  
14:10-14:30 **Presenter: Ziyang Li**  
South-Central Minzu University, China

**A8253** Reliability Performance of RIS-CR-NOMA based Short-Packet Communications  
Chunli Xia, Zhongwu Xiang, Hongbo Liu, Jin Meng  
14:30-14:50 **Presenter: Chunli Xia**  
Naval University of Engineering, China



# Session 1B

## Optical Fiber Communication and Networks

Chair: Jianping Li, Guangdong University of Technology, China

17<sup>th</sup> August | 16:00-18:00

Wu Han Hall | 3F

- 
- 16:00-16:20 Structures and Performance of BDFA for O+E Band  
**Jingjing Zheng**  
Beijing Jiaotong University, China
- 
- 16:20-16:40 Nonlinear Signal Transmission Technology  
**Jianping Li**  
Guangdong University of Technology, China
- 
- 16:40-17:00 Controllable Output Fiber Lasers Based on Pump Modulation  
**Zuxing Zhang**  
Nanjing University of Posts and Telecommunications, China
- 
- 17:00-17:20 A Low Latency and Slicable Optical Metro Network  
**Bitao Pan**  
Beijing University of Posts and Telecommunication, China
- 
- 17:20-17:40 Capability Enhancement and Improvement Plans for BeiDou Global Short Message Communication Service  
**Xiangpeng Zhu**  
Xi'an Branch of China Academy of Space Technology, China
- 
- 17:40-18:00 Using Software-defined Tenant to Improve Network Adaptation in 5G Core Networks  
**Chu-Sing Yang**  
National Cheng Kung University



# Session 2B

## Fiber and Sensor Technologies

Chair: Chunying Guan, Harbin Engineering University, China

17<sup>th</sup> August | 16:00-18:20

Xuan En Hall | 3F

All-fiber Speckle Spectrometer  
16:00-16:20 **Chunying Guan**  
Harbin Engineering University, China

Machine Learning Assisted Optical Fiber Vector Bending Sensor Based on MZI  
16:20-16:40 **Yanan Zhang**  
Northeastern University, China

Highly Birefringent Meniscoid Nested Anti-Resonant Hollow-Core Fiber  
16:40-17:00 **Xiaobei Zhang**  
Shanghai University, China

High Precision Distance Measurement of Micro-motion Targets Based on FMCW  
LiDAR  
17:00-17:20 **Hao Pan**  
Wuhan Institute of Technology, China

Experimental and Numerical Study of All-polarization-maintaining (PM) Linear  
Cavity Mode-locked Fiber Lasers  
17:20-17:40 **Qian Li**  
Peking University Shenzhen Graduate School, China

Mode Switch and Modulator in Strip Loaded Few-Mode Waveguide Formed on Slab  
Thin-Film Lithium Niobate on Insulator  
17:40-18:00 **Quandong Huang**  
Guangdong University of Technology, China

Backscattering Enhanced Optical Fiber (BEOF) DAS and Its Marine Applications  
18:00-18:20 **Cunzheng Fan**  
Huazhong University of Science and Technology, China



# Session 4

## Microwave Photonics

Chair: Chao Shen, Fudan University, China

17<sup>th</sup> August | 16:00-17:40

Lai Feng Hall | 3F

16:00-16:20 Interference Cancellation for Spectrally Efficient Radio-over-fiber Systems  
**Yang Chen**  
East China Normal University, China

---

16:20-16:40 Microwave photonic de-chirped radar technologies and progress  
**Jianghai Wo**  
Jinan University, China

---

16:40-17:00 Frequency-modulated Continuous-wave Signal Generation and its Applications  
**Zhiqiang Fan**  
University of Electronic Science and Technology of China, China

---

17:00-17:20 Frequency Division Optoelectronic Oscillator  
**Yitang Dai**  
Beijing University of Posts and Telecommunications, China

---

17:20-17:40 Photonics-assisted Frequency Identification of Wideband Microwave Signal  
**Bin Wang**  
Beijing Institute of Technology, China

---



# Best Student Paper Competition B

## Micro & Nano Optical Devices and Sensing

Chair: Zhi Liu, Changchun University of Science and Technology, China

17<sup>th</sup> August | 16:00-18:00

Yi Chang Hall | 3F

**A30022** A Low Differential Modal Gain All-fiber few-mode Erbium-doped Fiber Amplifier  
16:00-16:20 Hongyan Shi, Lu Dai, Qinghua Lv, Hui Lv, Lei Shen, Yuanpeng Ding  
**Presenter: Hongyan Shi**  
Hubei University of Technology, China

**A8326** Boarband Thermal Independent Silicon-Nitride Sensor with High Sensitivity  
16:20-16:40 Zihao Tang, Minming Zhang, Shuang Zheng, Deming Liu  
**Presenter: Zihao Tang**  
Huazhong University of Science and Technology, China

**A8351** Actively Mode-locked Optoelectronic Oscillator with Independently-tunable Pulse  
16:40-17:00 Width and Repetition Frequency  
Yixuan Liu, Zhen Zeng, Ziwei Xu, Ying Xu, Zhiyao Zhang, Yong Liu  
**Presenter: Yixuan Liu**  
University of Electronic Science and Technology of China, China

**A7285** Intelligent Recognition of Leakage Infrared Thermal Imaging of Embankment Dams  
17:00-17:20 Based on ResNet Networks  
Zhuang Xiong, Wenjun Ni, Chunyong Yang, Yaoping Zhang, Yusen Peng and Perry  
Ping Shum  
**Presenter: Zhuang Xiong**  
South-Central Minzu University, China

**A9771** Image Processing Algorithm Assisted Optical Lithography Processing for the  
17:20-17:40 Fabrication of Photonic Chips  
Quankeng Huang, Wenchao Jiang, and Quandong Huang  
**Presenter: Quankeng Huang**  
Guangdong University of Technology, China

**A311001** Anomaly Intrusion Detection Algorithm Based on Distributed Fiber Optic Sensors  
17:40-18:00 Haotong Zhang, Xiaoping Jiang, Hao Ding, Chong Wang, Han Xu, Shiqi Wang  
**Presenter: Haotong Zhang**  
South-Central Minzu University, China



# Session 5A

## Fiber Laser Technologies and Applications

Chair: Zhiqiang Wang, Anhui University, China

18<sup>th</sup> August | 9:30-11:30

Wu Han Hall | 3F

09:30-09:50 Recent Advances in Narrow Linewidth Lasers Based on Resonant Feedback from Microcavity  
**Leilei Shi**  
Chongqing University, China

09:50-10:10 Mode-Locked Fiber Lasers Based on Fiber Interference Filters  
**Liqiang Zhang**  
Liaocheng University, China

10:10-10:30 Multi-band Ultrafast Fiber Laser  
**Peiguang Yan**  
Shenzhen University, China

10:30-10:50 In-fiber Microstructures Directly Written By Femtosecond Laser And Their Applications In Fiber Lasers  
**Xuewen Shu**  
Huazhong University of Science and Technology, China

10:50-11:10 Research Progress in Our Photonic Crystal Fibers and the Applications  
**Meisong Liao**  
Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, China

11:10-11:30 Dissipative Attractors for Ultrafast Fiber Lasers  
**Zhiqiang Wang**  
Anhui University, China





# Session 6A

## Micro & Nano Optical Devices and Sensing

Chair:

18<sup>th</sup> August | 9:30-11:30

Xuan En Hall | 3F

- 
- 09:30-09:50 Measuring Method of Depolarizer Characteristic Parameters in Depolarized Fiber Optic Gyroscope  
**Yuanhong Yang**  
Beijing University, China
- 
- 09:50-10:10 Research on New Infrared Detectors and Focal Plane Arrays  
**Xuechao Yu**  
Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), CAS, China
- 
- 10:10-10:30 Silicon Photonics Hybrid Integration  
**Naidi Cui**  
CUMEC, China
- 
- 10:30-10:50 Optoelectronic Chip Integrated Fiber Sensing System  
**Fan Shi**  
Nanjing University of Posts and Telecommunications, China
- 
- 10:50-11:10 Monolithic Integration of III-V Quantum Dot Laser on Si Platform  
**Wenqi Wei**  
Songshan Lake Materials Laboratory (SLAB), China
- 
- 11:10-11:30 All Fiber Electric Field Sensor based on Electrical Control of Liquid Crystal Photonic Crystal Fiber  
**Shuhui Liu**  
Wuhan Institute of Technology, China
-



# Session 7A

## Semiconductor Optoelectronic Devices

Chair: Junjia Wang, Southeast University, China

18<sup>th</sup> August | 9:30-11:50

Lai Feng Hall | 3F

09:30-09:50 Large Modulation Bandwidth Blue Laser Diode for Visible Light Communications  
**Chao Shen**  
Fudan University, China

09:50-10:10 Research on Semiconductor Devices for Optical-Terahertz Interconnection in 6G Communication  
**Huijuan Niu**  
Liaocheng University, China

10:10-10:30 Programmable Photoacoustic Patterning of Microparticles  
**Feng Li**  
Beijing Institute of Technology, China

10:30-10:50 Inverse-designed Silicon Photonic Integrated Devices  
**Shuang Zheng**  
Huazhong University of Science and Technology, China

10:50-11:10 Heterogeneous Integrated Two-dimensional Material Optoelectronic Devices on Silicon  
**Junjia Wang**  
Southeast University, China

11:10-11:30 TBA  
**Li Shen**  
Huazhong University of Science and Technology, China

11:30-11:50 Optoelectronic Thin-Film Materials for Low-Power Flexible Organic Transistors  
**Zhigang Yin**  
Chongqing University, China

# Session 8

## Signal, Information and Data Processing for Communications

Chair: Xia Zhang, Liaocheng University, China

18<sup>th</sup> August | 9:30-11:30

Yi Chang Hall | 3F

09:30-09:50 Research on Intelligent Channel Equalization in Large Capacity Optical Communication Systems

**Li Pei**

Beijing Jiaotong University, China

09:50-10:10 Neural Network for Evaluating Synchronization and Security Performance of Optical Chaotic Communication

**Xiaojing Gao**

China University of Geosciences (Wuhan), China

10:10-10:30 Simplified DSP Architecture of Data Center Networks for AI Cluster

**Jinlong Wei**

Peng Cheng Laboratory, China

10:30-10:50 Density-Matrix Formalism and its Applications in Mode Division Multiplexing Systems

**Xia Zhang**

Liaocheng University, China

10:50-11:10 High Speed Physical Layer Secure Key Distribution Based on Classical Fiber Optics

**Mengfan Cheng**

Huazhong University of Science and Technology, China

11:10-11:30 Improved Small Object Detection Algorithm CRL-YOLOv5

**Lei Zhang**

Yanshan University, China



# Session 5B

## Fiber Laser Technologies and Applications

Chair:

18<sup>th</sup> August | 13:30-15:10

Wu Han Hall | 3F

13:30-13:50 Dynamic Process of Scalar and Vector Solitons in Passively Mode-Locked Fiber Laser  
**Weiqing Gao**  
Hefei University of Technology, China

13:50-14:10 Mid-Infrared Optical Parametric Conversion Based on High Power Fiber Sources  
**Junqing Zhao**  
Shenzhen Technology University, China

14:10-14:30 Programmable Manipulation on Dissipative Solitons and the Sensing Applications  
**Yiyang Luo**  
Chongqing University, China

14:30-14:50 Research on Key Techniques for Information Recovery in Scattering Light Fields  
**Fei Liu**  
Xidian University, China

14:50-15:10 AI Enabled Optical Access Network and Intelligent Optical Signal Processing  
**Junwen Zhang**  
Fudan University, China



# Session 9

## Optical Imaging Technologies and Applications

Chair: Kainan Wang, Wuhan University, China

18<sup>th</sup> August | 13:30-14:30

Xuan En Hall | 3F

13:30-13:50 A Simulation Model of Control System for a Lightweight Space Active Mirror  
**Kainan Wang**  
Wuhan University, China

13:50-14:10 Fractal Superconducting Nanowire Single-Photon Detectors and their Applications In Imaging  
**Xiaolong Hu**  
Tianjin University, China

14:10-14:30 TBA  
**Xian Feng**  
Jiangsu Normal University, China



# Session 10A

## Visual Analysis and Machine Learning

Chair: Zhigang Yin, Chongqing University, China

18<sup>th</sup> August | 13:30-14:45

Lai Feng Hall | 3F

---

**A30064** An Efficient Model Compression Method for Wireless Federated Learning  
Junfeng Tang, Cuitao Zhu  
13:30-13:45 **Presenter: Junfeng Tang**  
South-Central Minzu University, China

---

**A0298** Research on Trajectory Planning using Improved Harris Hawk Optimization Algorithm  
Congwei Zhao, Mingyan Cheng, Peiyuan Zhou, Xinhua Wang  
13:45-14:00 **Presenter: Congwei Zhao**  
Nanjing University of Aeronautics and Astronautics, China

---

**A30053** Optimal Client Selection for Wireless Federated Learning  
Heng An, Cuitao Zhu  
14:00-14:15 **Presenter: Heng An**  
South-Central Minzu University, China

---

**A4653** Exploring SSL Enhancements Through Triplet-Based Representation Learning  
Ruan Hang, Yifan Chen  
14:15-14:30 **Presenter: Hang Ruan**  
University of Nottingham Malaysia, Malaysia

---

**A312001** CrackSAM: Study on Few-Shot Segmentation of Mural Crack Images Using SAM  
Han Xu, Chenghua LI, Xiaoping Jiang, Shuai Zhang, Shiqi Wang, Haotong Zhang  
14:30-14:45 **Presenter: Han Xu**  
South-Central Minzu University, China

---



# Session 11

## Space Communications, Navigation and Tracking

Chair: Jinlong Wei, Peng Cheng Laboratory, China

18<sup>th</sup> August | 13:30-15:00

Yi Chang Hall | 3F

**A9766** Dynamic Tucker Decomposition for Traffic Data Completion  
Yang Wang; Bingyin Zhou; Qingyun Ren  
13:30-13:45 **Presenter: Bingyin Zhou**  
Hebei Normal University, China

**A30031** A Low Complexity Channel Estimation Scheme for Orthogonal Time Frequency Space System  
Dingdong Nie, Cuitao Zhu  
13:45-14:00 **Presenter: Dingdong Nie**  
South-Central Minzu University, China

**A6856** A Deep Neural Network for Simultaneous Channel Estimation and Signal Detection in MIMO-OFDM-FSO System  
Zhou Luxia Cao Minghua Zhang Yue Wang Rui Zhang Xingyu Wang Huiqin  
14:00-14:15 **Presenter: Zhou Luxia**  
Lanzhou University of Technology

**A30042** MMSE Detection for SM-OTFS Systems  
Ren Min, Cuitao Zhu  
14:15-14:30 **Presenter: Ren Min**  
South-Central Minzu University, China

**A1216** A Doppler Rate Estimation-based Frequency Hopping Carrier Tracking Algorithm in LEO Satellite-ground Link  
Qinyuan Hu, Xiang Li, Yi Hua  
14:30-14:45 **Presenter: Qinyuan Hu**  
Beijing Institute of Aerospace Systems Engineering, China

**A5640** Drone Position Estimation Based on Multipath Utilization in Urban Single Building NLOS Environments  
Xue Gao, Yongqiang Cui, Di Bai, Qian Huang and Yaoyao Lei  
14:45-15:00 **Presenter: Xue Gao**  
South-Central Minzu University, China





# Session 12A

## Information Security

Chair:

18<sup>th</sup> August | 15:40-17:10

Wu Han Hall | 3F

**A3621**  
15:40-15:55 TrustPIoT: Blockchain-based Anonymous Authentication for Cross-Domain Intelligent PIoT  
Peng Li  
**Presenter: Peng Li**  
Jinan University, China

**A7395**  
15:55-16:10 Optimization of Cultural Heritage Protection Patrol Systems  
Runze Zhao  
**Presenter: Runze Zhao**  
South-Central Minzu University, China

**A3731**  
16:10-16:25 Research of Raft Algorithm Improvement in Blockchain  
Lin Ni, Qiukai Ye, Jun Yang, Shuai Zhang, Ming Xian  
**Presenter: Lin Ni**  
National University of Defense Technology, China

**A313001**  
16:25-16:40 Anomaly Intrusion Detection Algorithm Based on Distributed Fiber Optic Sensors  
Haotong Zhang, Xiaoping Jiang, Hao Ding, Chong Wang, Han Xu, Shiqi Wang  
**Presenter: Shiqi Wang**  
South-Central Minzu University, China

**A6934**  
16:40-16:55 A Method for Modeling Normal User Behavior Based on Security Risk Audit Elements  
Yuke Wang, Guishan Dong, Jian Bai, Sha Deng, Dong Tang, Shigang Liu  
**Presenter: Wang Yu Ke**  
The 30th Research Institute of China Electronics Technology Group Corporation, China

**A9234**  
16:55-17:10 A Heterogeneous Device Access Gateway for Cultural Heritage Security  
Peng Lang, Hongling Shi, Xiaoping Jiang, Xingkun Jiang, Wenxi Chen and Runze Zhao  
**Presenter: Peng Lang**  
South-Central Minzu University, China



# Session 6B

## Micro & Nano Optical Devices and Sensing

Chair: Wenqi Wei, Songshan Lake Materials Laboratory (SLAB), China

18<sup>th</sup> August | 15:40-17:10

Xuan En Hall | 3F

- 
- A8779**  
15:40-15:55  
Highly Efficient and Ultrabroadband Hybrid Silicon-Lithium Niobate Grating Coupler  
Quan Shi, Dongli Dai  
**Presenter: Dai Dongli**  
Southeast University, China
- 
- A2561-A**  
15:55-16:10  
A Highly Sensitive Mini-resonant Photoacoustic Sensor with Sub-second Response based on A Microcone-curved Photoacoustic Resonator  
Zhongke Zhao, Wenjun Ni and Chunyong Yang  
**Presenter: Zhongke Zhao**  
South-Central Minzu University, China
- 
- A0015**  
16:10-16:25  
Vernier-effect-based Fiber Microcoupler for Salinity Measurement  
Chenguang Li, Xinyi Liu, Shihua Lin, Chao Wang, Yaqi Tang, Junfeng Chen, Keyi Liu, Wei Jin  
**Presenter: Chao Wang**  
Shenzhen Technology University, China
- 
- A4764**  
16:25-16:40  
High-Precision Synchronization Using Laser-based Free Space Time Transfer  
Wantao Huang, Peng Zhang, Ze Li and Dong Hou  
**Presenter: Wantao Huang**  
University of Electronic Science and Technology of China, China
- 
- A0730**  
16:40-16:55  
Design of 450nm Gallium Nitride-based Distributed Feedback Laser  
Zhenqian Gu, Junhui Hu, Haolin Jia, Zhen Yang, Songke Fang, Leihao Sun, Chao Shen  
**Presenter: Zhenqian Gu**  
Fudan University, China
- 
- A4764**  
16:55-17:10  
High-Precision Synchronization Using Laser-based Free Space Time Transfer  
Zhenqian Gu, Junhui Hu, Haolin Jia, Zhen Yang, Songke Fang, Leihao Sun, Chao Shen  
**Presenter: Dong Hou**  
University of Electronic Science and Technology of China, China



# Session 7B

## Semiconductor Optoelectronic Devices

Chair: Huijuan Niu, Liaocheng University, China

18<sup>th</sup> August | 15:40-17:10

Lai Feng Hall | 3F

**A2189**  
15:40-15:55  
A Strain Measurement Method on the Upper Surface of Basin Insulator based on OFDR Technique  
Jing Zhao  
**Presenter: Jing Zhao**  
Huazhong University of Science and Technology, China

**A1446-A**  
15:55-16:10  
High Sensitivity Photoacoustic Spectroscopy based on Curved Body Waist Type Resonant Photoacoustic Cell  
Bingze He, Ruiming Wu, Wenjun Ni, Chunyong Yang and Perry Shum  
**Presenter: Bingze He**  
South-Central Minzu University, China

**A9757**  
16:10-16:25  
High Precision Micro-dispersion Measurement Based on Spectral Interferometry using a Soliton Microcomb  
Wei Du, Juntao He, Jindong Wang and Tao Zhu  
**Presenter: Wei Du**  
Chongqing University, China

**A5618**  
16:25-16:40  
Ga<sub>2</sub>O<sub>3</sub>/GaN/Ga<sub>2</sub>O<sub>3</sub> n-p-n Double-junction Ultraviolet Photodetector  
Hou Zhiguo  
**Presenter: Zhiguo Hou**  
South-Central Minzu University, China

**A6361**  
16:40-16:55  
High-frequency Characterization of Optoelectronic Devices by Pilot-assisted Harmonic Analysis  
Ying Xu  
**Presenter: Ying Xu**  
University of Electronic Science and Technology of China, China

**A3859**  
16:55-17:10  
Hard X-ray Detector based on p-Si/i-MgO/n-TiO<sub>2</sub> Heterojunction  
Liu Xinlin, Zhiguo Hou, Yunlong Li, Haoning Wang, Jing Yang, Hao Long  
**Presenter: Liu Xinlin**  
South-Central Minzu University, China



# Poster Session

Chair: Wenjun Ni, South-Central Minzu University, China

18<sup>th</sup> August | 16:00-17:30

Yi Chang Hall | 3F

- 
- A6980**  
001  
Sagnac Type Fiber Optic Current Sensor based on A Single Circularly Polarized Fiber and A 3\*3 Coupler  
Junchang Huang, Bin Liu, Yuzhuo Chen, Can Li and Li Xia  
**Presenter: Junchang Huang**  
China Electric Power Research Institute, China
- 
- A0526**  
002  
Research on the Application of Large Language Models in Programming Tutoring  
Zongxu Zhu, Shuxin Du, Yi Qiu  
**Presenter: Zongxu Zhu**  
Huzhou University, China
- 
- A5608**  
003  
Mode Switch and Modulator in Strip Loaded Few-Mode Waveguide Formed on Slab Thin-Film Lithium Niobate on Insulator  
Bin Xiao, Quandong Huang, Xiaofeng Liu, Jiali Zhang, Ou Xu, Di Peng, Ya, Han and Yuwen Qin  
**Presenter: Quandong Huang**  
Guangdong University of Technology, China
- 
- A6974**  
004  
Comparison of Prefilter for DDFSE Equalized Fast-Than-Nyquist Signaling  
Jiyuan Cai, Zili Fang, Jingyan Yin and Wenbo Zhang  
**Presenter: Jiyuan Cai**  
Beijing University of Posts and Telecommunications, China
- 
- A4751**  
005  
MHSA-CNN-Bi-LSTM Based Interference Cancellation Algorithm For MIMO-FTN-OWC System  
Qing Yang; Minghua Cao; Genxue Zhou; Yue Zhang; Ruifang Yao; Huiqin Wang  
**Presenter: Qing Yang**  
Lanzhou University of Technology, China
- 
- A2075**  
006  
End-to-End Optical Layer Slicing Technology in Multi-Format Power Communication Optical Networks of SDH and OTN  
Jiangsheng Li, Kunpeng Zheng, Yongli Zhao, Guangxiang Jin, Mengxi Zhang, Yufei Shi  
**Presenter: Kunpeng Zheng**  
Beijing University of Posts and Telecommunications, China
- 
- A4918**  
007  
New Lower Bounds on Aperiodic Hamming Correlation of Frequency Hopping Sequences  
Shifu Yang, Kaichuang Jiang, Zhe Xu and Yebin Bai  
**Presenter: Shifu Yang**  
Shanghai Radio Equipment Research Institute, China
-



- 
- A1369**  
008  
Feature Extraction Method of Active Echo Highlight Structure Based on Transformer Network  
Zhang Wei, Qingcui Wang, Fangyong Wang, Yuechao Cheng, Hao Tang  
**Presenter: Zhang Wei**  
Hangzhou Applied Acoustics Research Institute, China
- 
- A4787**  
009  
New Classes of Optimal Wide-Gap One-Coincidence Frequency Hopping Sequence Sets  
Shifu Yang  
**Presenter: Shifu Yang**  
Shanghai Radio Equipment Research Institute, China
- 
- A30833**  
010  
Energy Efficiency Maximization for Intercluster Transmission in Wireless Sensor Networks Deploying Discrete Power Splitters  
Shu Han, Junjia Gao, Zhiyong Huang, Yuanhong Zhong  
**Presenter: Shu Han**  
Chongqing University, China
- 
- A4805**  
011  
Four New Optimal Codes over F7 and F9  
Qiang Fu, Ruipan Yang, Hao Song, Yuezhen Ren  
**Presenter: Qiang Fu**  
Air Force Engineering University, China
- 
- A317005**  
012  
Unambiguous Direction Estimation Algorithm Using Dual Antennas in Cooperative Positioning  
**Presenter: Di Bai**  
South-Central Minzu University, China
- 



# Session 10B



## Visual Analysis and Machine Learning

Chair:

ZOOM: 848 9924 2762 | Link: <https://us02web.zoom.us/j/84899242762>

19<sup>th</sup> August | 9:30-11:15

9:30-9:50 High-Dimensional Optical Fiber Communications using Integrated Photonic Processors  
**Yeyu Tong**  
The Chinese University of Hong Kong

**A1399** Design of Fruit Quality Recognition System  
09:30-09:45 Xia Bing, Ning Chaokui, Zhang Zan, Zhou Zhiqing  
**Presenter: Xia Bing**  
PingDingshan University, China

**A1755** Attention-Enhanced Ensemble Learning for Diabetic Retinopathy Classification with Interpretability  
09:45-10:00 Keliang Wu, Jincheng Peng, Xiang Feng, Zixuan Chen, Happy Nkanta Monday, Grace Ugochi Nneji  
**Presenter: Keliang Wu**

**A5730** An Image Denoising Method Based on Swin Transformer V2 and U-Net Architecture  
10:00-10:15 Mingkang Li, Wei Liu, Weidong Chen  
**Presenter: Mingkang Li**  
South China Normal University, China

**A7170** Usability Evaluation of the Mobile Automated Fingerprint Identification System Using the PACMAD Model: An Empirical Study  
10:15-10:30 William Penaflor Rey  
**Presenter: William Penaflor Rey**  
Mapua University, Philippines

**A8522** A Convolutional Neural Network based Graph Theory for EEG Classification of Motor Imagery  
10:30-10:45 Xuedou Xiong  
**Presenter: Xuedou Xiong**  
Shandong Normal University, China

**A1128** Package Number Detection Method Based on Improved YOLOv5 in Complex Environments  
10:45-11:00 Jiguang Mei, Yaozong Zhang  
**Presenter: Jiguang Mei**  
Wuhan Institute of Technology, China

**A310004** A Multidimensional Node Selection Method Towards MOAS Outsourcing Mitigation  
11:00-11:15 Shiqi Zhao, Xiaohong Huang, Pei Zhang, Boxiang Zhang, Zhiquan Lv  
**Presenter: Shiqi Zhao**  
Beijing University of Posts and Telecommunications, China



# Session 12B

## Information Security



**Chair:**

ZOOM: 848 9924 2762 | Link: <https://us02web.zoom.us/j/84899242762>

**19<sup>th</sup> August | 13:30-16:00**

TBA

13:30-13:50 **Peng Yu**  
Beijing University of Posts and Telecommunications

BVR-AD: Bridging Virtual and Real for Autonomous Driving with Environment Adaptation

**A9704**  
13:50-14:05 Ting Yu; Wangwen Lu;  
**Presenter: Wangwen Lu**  
Hangzhou Normal University, China

FSAH: Fast Specific Average Hashing for Cross-Modal Retrieval

**A1119**  
14:05-14:20 Jianjun Zhang, Sicheng Huang  
**Presenter: Jianjun Zhang**  
Guangdong University of Technology, China

A Formal Specification Approach to specify pet's house system using Z-Notations

**A4793**  
14:20-14:35 Irfan Ahmed, Nibtal Khalid  
**Presenter: Irfan Ahmed**  
University of Sialkot, Pakistan

Exploring Usability and User Experience in WeBarangay: A SUS and UEQ Analysis

**A9614**  
14:35-14:50 William P. Rey  
**Presenter: William P. Rey**  
Mapua University, Philippines

Enhanced Trust & Risk Based Access Control, in Autonomous Vehicles, by Using Ethereum vs Hyperledger Platforms Consensus Algorithms

**A9756**  
14:50-15:05 Sadia Hussain  
**Presenter: Ihsan Elahi**  
National University of Sciences & Technology (NUST), Pakistan

Research On Sparse Remote Sensing Matching Method Based on LoFTR Descriptor

**A6526**  
15:05-15:20 Yuanyin Lei, Yaozong Zhang  
**Presenter: Yuanyin Lei**  
Wuhan Institute of Technology, China



# Session 1C



## Optical Fiber Communication and Networks

Chair:

ZOOM: 848 9924 2762 | Link: <https://us02web.zoom.us/j/84899242762>

19<sup>th</sup> August | 16:00-17:45

- 
- A0491** Minimum and Maximum Strong Diameters of the Strong Product of Cycles and Paths  
Shikun Zhou and Feng Li  
16:00-16:15 **Presenter: Shikun Zhou**  
Qinghai Normal University, China
- 
- A4206** Experimental 100M Real-time Visible Light Communication System based on Miniaturized Laser Driven  
Gong Pengfei, Jiang Guiying, Peng Han, Zhu Qiming  
16:15-16:30 **Presenter: Gong Pengfei**
- 
- A2536** Effectiveness Evaluation of Battlefield Airspace Control Information System under the Dynamic Perspective  
Yun Zhong, Yongzhuang Zhang, Jieyong Zhang, Haiyan Cheng  
16:30-16:45 **Presenter: Yongzhuang Zhang**  
Air Force Engineering University, China
- 
- A6066** A Ground Application System for On-orbit Servicing Satellite Based on OODA Loop  
Hao Liang; Jingdun Lin; Xiao Zhou  
16:45-17:00 **Presenter: Hao Liang**  
Aerospace Information Research Institute, Chinese Academy of Sciences, China
- 
- A7813** Channel Reconstruction and Path Loss Characterization of Indoor T-Corridors based on Intelligent Reflecting Surface at 300GHz  
Xiaoxue Feng, Hao Lu, Rui Shi  
17:00-17:15 **Presenter: Xiaoxue Feng**  
Hohai University, China
- 
- A8586** Realization of Underwater Wireless Optical Communication with High Alignment Accuracy based on All-optical Acquisition  
Ke Wen, Lulu Wang, Jingang Yuan, Li Fei, Xiaonan Yu, Tong Wang, Pengfei Gong, Yaping Li  
17:15-17:30 **Presenter: Ke Wen**  
Wuhan Maritime Communication Research Institute, China
- 
- A9871** Design and Implementation of 32-Channel C-Band Digital Transmitter/Receiver Module  
Xiaochun Sheng, Min Lu, Hongyu Fu, Yang Wei  
17:30-17:45 **Presenter: Xiaochun Sheng**  
Tianfu College of SWUFE, China



# DELEGATES

NAME	AFFLIATION
Joshua Oseremen Uduagbomen	The University of Warwick, United Kingdom
Yu Qu	South-Central MinZu University, China
Guoping Cao	South-Central MinZu University, China
Xizhao Wang	South-Central Minzu University, China
Xuqiang Wu	Anhui University, China
Muhammad Shemyal Nisar	University of Shanghai for Science and Technology, China
Yixiang Sun	Huazhong University of Science and Technology, China
Donning Wang	Shenzhen Technology University, Hong Kong
Dongyu Chen	Beijing Academy of Information Science & Technology, China
Zhiyuan Guo	Beijing Academy of Information Science & Technology, China
Deyang Zou	Beijing Academy of Information Science & Technology, China
Qizhen Sun	Huazhong University of Science and Technology, China
Chenglin Bai	Liaocheng University, China
Minghong Wang	Liaocheng University, China
Lisong Yan	Huazhong University of Science and Technology, China
Siqiu Guo	Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
Yi Wang	China Jiliang University, China
Xinyu Wang	South-Central Minzu University, China
Chenyu Wang	South-Central Minzu University, China
Bai Ding	South-Central Minzu University, China
Shiyu Long	South-Central Minzu University, China



Miao Xu South-Central Minzu University, China

Haobo He South-Central Minzu University, China

Wantao Huang Kaili University, China



