華東師範大學
EAST CHINA NORMAL UNIVERSITY

海南研究院
重庆研究院

EAST CHINA NORMAL UNIVERSITY
STATE KEY LABORATORY
OF PRECISION SPECTROSCOPY

ZBSTC

USQS 2024

International Conference on Ultrafast Science and Quantum Sensing (USQS)

JAN. 25-29, 2024 Yazhou Bay, China

usqs.learningconf.cn

TABLE OF CONTENTS

Organizations

International Conference on Ultrafast Science
and Quantum Sensing (USQS)

USQS 2024

International Conference on Ultrafast Science and Quantum Sensing (USQS)

About Conference

We are pleased to announce that the International Conference on Ultrafast Science and Quantum Sensing (USQS 2024), hosted by East China Normal University (ECNU), organized by the Hainan Institute of East China Normal University, the Chongqing Institute of East China Normal University, the State Key Laboratory of Precision Spectroscopy, the Institute of Marine Precision Optical Instruments, and the Hainan ROI Optoelectronics Technology CO.LTD, will be held in Yazhou Bay, China from Jan. 25th to 29th, 2024.

USQS is devoted to strengthening the collaboration among worldwide researchers and promoting the development in the fields of ultrafast science and quantum sensing as well as their applications in physics, photonics, quantum technologies ,intelligent manufacturing , etc. The conference scope includes ultrafast science and technology, ultrafast laser technology and devices, fiber laser and intelligence control, ultrafast laser intelligence manufacturing, optical frequency comb and applications, atomic and molecular spectroscopy, quantum metrology and devices, spectroscopic sensing and applications, terahertz photonics, biomedical photonics, single-photon detection and imaging, infrared photonics, integrated photonics and artificial intelligence applications, light field regulation and applications, topological photonics and non-Hermitian optics, etc.

USQS provides an excellent opportunity to share and exchange ideas and findings. We look forward to welcoming our friends and colleagues from all around the world. We warmly invite you and your colleagues, as well as students, to submit the latest work. You will enjoy the exchange and discussions on ultrafast phenomena and quantum technologies and have a memorable experience in Yazhou Bay, China.

报到日期：2024年1月25日
会议日期：2024年1月26日–1月29日
会议地点：海南省崖州湾科技城创新研学谷教学区

Conference Registration：Jan. 25th, 2024
Conference Date：Jan. 26th-29th, 2024
Venue：Innovative Research and Education Valley, Yazhou Bay Science and Technology City, Hainan, 572025 China

General Program

Activity	Location	Thursday	Friday	Saturday	Sunday
		Jan.25	Jan.26	Jan.27	Jan.28
Conference Reception	Yazhou Bay Qianhe International Exchange Center	08:00-22:00			
	Yongyou Media Center				
	Tangla Yaxiu Hotel				
	Innovation Research and Education Valley Auditorium		08:00-18:00	08:00-18:00	08:00-18:00
Welcome and Opening Remarks and Plenary Talks	Innovation Research and Education Valley Auditorium		09:00-12:00		
Keynote Talks（Ultrafast Science）	Innovative Research and Education Valley South Building Staircase Classroom		13:30-18:15		
Keynote Talks（Quantum Sensing）	Innovative Research and Education Valley North Building Staircase Classroom		13:30-18:15		
Welcome Banquet	Yazhou Bay Qianhe International Exchange Center /Yazhou Hall		19:00-21:00		
	Yazhou Bay Qianhe International Exchange Center /Fushan Hall				
	Yazhou Bay Qianhe International Exchange Center /Lawn				
Conference Buffet	Yazhou Bay Qianhe International Exchange Center /Lawn			19:00-21:00	

Activity	Location	Thursday	Friday	Saturday	Sunday
		Jan.25	Jan.26	Jan.27	Jan.28
Session 1 – Ultrafast High-Intensity Laser Science and Technology	Innovative Research and Education Valley Classrooms			09:00-17:30	09:00-17:45
Session 2 – Ultrafast Laser Technology and Devices				09:00-17:40	
Session 3 – Fiber Laser and Intelligent Control				09:00-17:30	09:00-11:50
Session 4 – Ultrafast Laser Intelligence Manufacturing				09:00-17:55	09:00-17:45
Session 5 – Optical Frequency Comb and Applications				09:00-17:35	
Session 6 – Atomic and Molecular Spectroscopy				09:00-17:30	
Session 7 – Quantum Metrology and Devices				09:00-17:25	09:00-11:50
Session 8 – Spectroscopic Sensing and Applications				09:00-17:40	
Session 9 – Terahertz Science and Technology			13:30-17:30	09:00-17:40	09:00-17:40
Session 10 – Biomedical Photonics				09:00-17:20	09:00-11:55
Session 11 – Photon Detection and Computational Imaging				09:00-15:30	
Session 12 – Infrared Photonics and Devices				09:00-15:00	
Session 13 – Light Field Manipulation and Applications				09:00-17:30	
Session 14 – Integrated Photonics and Photonic Computing				09:00-17:20	09:00-15:30
Session 15 – Topological Photonics and Non-Hermitian Optics			13:30-17:20	09:00-17:50	
Winter Camp	Innovation Research and Education Valley	15:00-20:00	09:00-18:00	09:00-18:00	09:00-17:00

Committee

Host:

華東師範大學
EAST CHINA NORMAL UNIVERSITY

Co-hosts:

Organizers:

崖州湾科技城 SZBSTC

Technical Sponsors:

eLight | LASER & PHOTONICS REVIEWS | WILEY

Light: Science & Applications nature.com/lsa | 量子电子学报 CHINESE JOURNAL OF QUANTUM ELECTRONICS | 計測技術 METROLOGY & MEASUREMENT TECHNOLOGY

Sponsors:

LBTEK 麓邦光电 | 北京恒芯博雅 | 朗研光电

链胜科技 LIANSHENG TECHNOLOGY | 海科思锐 HAIKE SIRUI | 中科锐择 CSRAYZER

星控激光 XINGKONG-LSDER | LiSen Optics 莱森光学 | CTL Photonics 睿科晶创

芷云光电 GENUINE | LUSTER 凌云光 | nLIGHT

速瑞科技 SURUI TECHNOLOGY | 栖悦

General Chairs

Ruxin Li
ShanghaiTech University
Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences

Andrius Baltuška
Vienna University of Technology

Heping Zeng
East China Normal University

Honorary Chairs

Qihuang Gong
Peking University

Jianwei Pan
University of Science and Technology of China

Shining Zhu
Nanjing University

Xuhong Qian
East China Normal University

Qingming Luo
Hainan University

Suotang Jia
Shanxi University

Special Guests

Chengzi Guo, Director, eLight; Editor, Light: Science & Applications

Katja Paff, Editor-in-Chief, Laser & Photonics Reviews , Germany

Organizing Committee

Qili Lei	Guoyue Shi	Zhibin Li	Jian Wu	Hua Li	Sanjun Zhang
E Wu	Wenxue Li	Guang Wu	Haifeng Pan	Ming Yan	Kun Huang
Junsong Peng	Yan Peng	Jijun Feng	Liping Shi	Ruoyu Xu	Mengyun Hu
Ling Zhang	Qiang Hao	Yan Liang	Min Li	Kangwen Yang	Shuai Yuan

Yazhou Bay Science and Technology City

Yazhou Bay Science and Technology City (YZBSTC) is located in the west of Sanya City, Hainan Province. The overall planning area is 69.3 square kilometers. Focusing on the overall scheme requirements of Hainan Free Trade Port, it focuses on Seed Breeding Industry, Deep Sea Technology planning for industrial layout. YZBSTC is an important growth pole for Sanya to cultivate new forms of industrial transformation, activate new kinetic energy of economic development, and build a new benchmark for the construction of free trade ports. It is one of the key parks of Hainan Free Trade Port.

YZBSTC is located in the sea and has convenient transportation. It plans and layouts two major spatial plates of Seed Breeding Industry, Deep Sea Technology. The key layout of " one town, one base, one valley " in Seed Breeding Industry includes Nanfan Breeding Sci-tech Town, the Innovation and Cooperation Base of Global Animal and Plant Sead Industry, Biological Valley. Deep Sea Technology layout of " one town, one port " includes Deep-sea Sci-tech Town and Nanshan Port.

YZBSTC is vigorously pursuing two key priorities: technological innovation and industrial development. It emphasizes the deep integration of "production, education, research, and urban development" strategically lays out significant technological infrastructure and industrial platforms, and accelerates the consolidation of resources from various stakeholders. The goal is to build a leading science and technology new town dominated by Seed Breeding Industry, Deep Sea Technology , and jointly developed by Life Science, Digital Economy and other industries.

East China Normal University

East China Normal University (ECNU) is located in Shanghai---a renowned international metropolis with architectural landmarks that capture the eye with new aesthetic designs. The architectural designs are emblematic of the skyline over the city, revealing a nurturing culture of people and an abundance of resources for boosting the city.

Founded in Shanghai in October 1951, ECNU is one of the prestigious universities in China. In 2017, ECNU was selected as one of the Category A universities in China's Double First-Class University Program, a higher education initiative launched by the Ministry of Education aiming to develop elite Chinese universities into world class institutions by the end of 2050.

ECNU, with a total area of more than 207 hectares, has long been known as a Garden University. This is because the university has two campuses, located in Minhang and Putuo districts of Shanghai, that are both full of unique nature and beauty.

Adhering to the strategy of "Interdisciplinary, Internationalization and Informatization", the "Three Programs" – "Developing education excellence, Promoting interdisciplinary academic excellence, and Serving national strategies", and the mission - "Education, Civilization, Development", ECNU has made tremendous achievements in talent training, scientific research, community service, and international exchanges in the recent decades.

ECNU's motto is: "Seek Truth, Foster Originality, and Live up to the Name of a Teacher", with a mission to foster " Creativity, Character, Community". Today, ECNU is striving to transform itself into a world-class university, with a number of first-class disciplines and well-coordinated discipline programs development. The university also intends to lead in the development of China's teacher education, part of its faculty of education.

Information to Participants

International Conference on Ultrafast Science and Quantum Sensing (USQS)

Information to Participants

1. Registration:

· January 25, 2024, 8:00-20:00:

(1) Yazhou Bay Qianhe International Exchange Center

(2) Sanya Yonyou Media Center

(3) Tangla Yaxiu Hotel

· January 26-28, 2024, 8:00-22:00:

The grand hall of the Yazhou Bay Science and Technology City Innovation Research Valley (9 Xin Dao Street, Yazhou District)

· When registering, please provide your name and/or company name to the staff. Afterward, you can collect your conference materials and participant card. A friendly reminder: conference materials and the participant card are crucial for your participation in the conference and other activities. To ensure your smooth attendance, please remember to collect them.

2. Conference Venue

· Yazhou Bay Science and Technology City Innovative Research and Education Valley, Hainan Province, China.

3. Poster Presentation:

· Posting Period: January 25, 2024

· Dismantling Period: January 28, 2024

· Each abstract is assigned a number based on the alphabetical order of the presenter's name. It is recommended to display the posters throughout the conference until its conclusion. Posters not removed by the specified dismantling time will be uniformly removed and recycled by the staff.

Best Poster Award:

· Outstanding posters will receive the Best Poster Award, recognizing exceptional presentation during the conference. The Poster Evaluation Committee will assess all posters based on design, content, and clarity of presentation (both visual and verbal). The conference will award five outstanding poster prizes.

Eligibility:

· Be a graduate student or postdoctoral researcher.

· Attend the entire conference.

· Present a poster at the conference.

Rewards:

· Certificate: Best Poster Award

Voting Procedure:

· Committee members choose their top three favorite posters and rank them in order.

· Ballots should be deposited into the designated ballot box.

Voting Deadline:

· January 28, 2024

Award Ceremony:

· The Best Poster Award results will be announced on the official website after the conference concludes.

4. Oral Presentations:

Presentation Period:

· January 26 to January 28, 2024

Duration:

· Plenary/Keynote Talk: 40-45 mins (including Q&A)

· Invited Talk: 20-30 mins (including Q&A)

· Oral Talk: 10-20 mins

For Presenters Bringing Their Own Computers:

· During breaks, please test your computer to ensure compatibility and smooth transitions.

· The conference will provide HDMI and USB-C adapters for speakers.

For Presenters Using Venue Computers:

· Please send your presentation slides to the email address USQS2024@163.com by January 26. Alternatively, you can use a USB flash drive to transfer the slides to the venue computer before the session.

· Regarding power supply, we will arrange a socket on the podium. If you need to convert a Chinese three-pin plug to a two-pin plug used in the USA/Japan, an adapter will be provided for your convenience.

· A friendly reminder: to ensure the smooth flow of the conference, presenters are advised to enter the venue 20 minutes before their session for preparation.

5. Hotels:

Contacts for Accommodations:

Xiaoyang Wang: +86-17321016802
Mingyu Du: +86-17608911795

(1) Yazhou Bay Qianhe International Exchange Center (Hilton)

· Address: No.405A Yanjiang East Road, 510000 Sanya, China
· Phone: +86 19989765851

(2) Sanya Yonyou Media Center

· Address: No.5 Road, Yonyou Industrial Park, Sanya, Hainan, China
· Phone: +86 17633804412

(3) Beluga Sanya Discovery Ocean World Hotel

· Address: 7 Xin Dao Street, Yazhou Bay Science and Technology City, Yazhou District, Sanya, Hainan
· Phone: +86 13876104142

(4) Yabulun Business Center

· Address: Yabulun Technology Industrial Park Building 4
· Phone: +86 15720312220

(5) Tangla Hotel Sanya

· Address: 223 Sanya Bay Road, Tianya District, Sanya, Hainan Province
· Phone: :+86 18089880401

(6) Jinsha Seaview Hotel

· Address: 159 Maling Street, Tianya District, Sanya, Hainan Province
· Phone: :+86 15595625870

(7) Howard Johnson Resort Sanya Bay

· Address: 188 Sanyawan Rd, Tianya District, Sanya, Hainan, China, 572023
· Phone: +86 18189791011

6. Dining:

Date	Meal Type	Time	Location
Jan.26	Lunch	12:00-14:00	Innovation Research Valley Cafeteria, Second Floor, Haiyun Restaurant
	Dinner	19:00-21:00	Yazhou Bay Qianhe International Exchange Center
Jan.27	Lunch	12:00-14:00	Innovation Research Valley Cafeteria, Second Floor, Haiyun Restaurant
	Dinner	19:00-21:00	Yazhou Bay Qianhe International Exchange Center
Jan.28	Lunch	12:00-14:00	Innovative Research and Education Valley Cafeteria, Second Floor, Haiyun Restaurant
	Dinner	19:00-21:00	

· Note:
The conference will provide lunch (January 26-28) and dinner (January 26-28). Recommended hotels will offer breakfast for registered participants.

The Innovation Research Valley Cafeteria, Second Floor, Haiyun Restaurant, will provide 300 meals daily during the conference.

The dinner on the evening of January 26 will take place at Yazhou Bay Qianhe International Exchange Center on the lawn (outdoor), Yazhou Hall, Fushan Hall (indoor). Please take note of the dining venue.

If you have any more questions or need further assistance, feel free to ask!

7. Airport Transfer Service:

Contacts:

Wei An: +86-18297119044

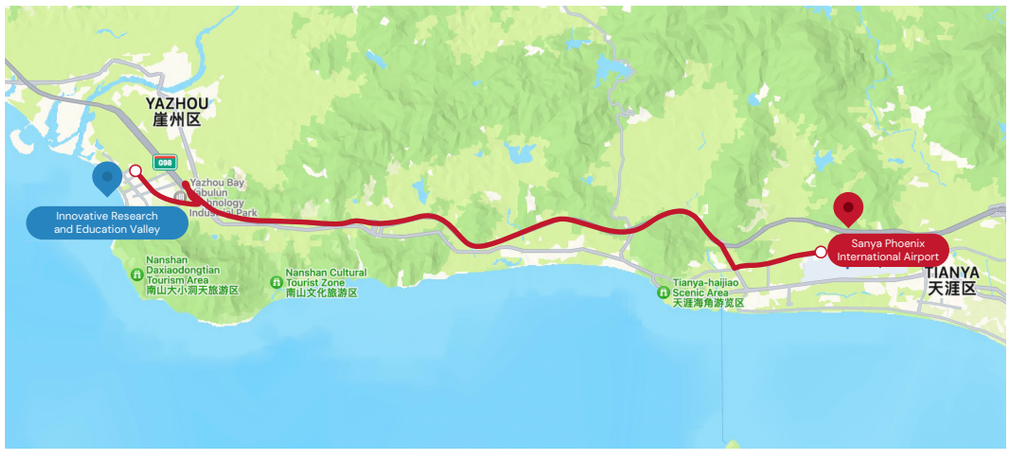
Date	Service	Departure Time	Route	Departure Form
Jan.25	Airport Transfer	08:00-20:00	From Sanya Phoenix International Airport to the designated hotel	Scheduled Departure

8. Contact Persons:

Phone		Email
Mengyun Hu:	+86-18019725757	myhu@phy.ecnu.edu.cn
Qingchong Tian:	+86-19112316083	qctian@lps.ecnu.edu.cn
Wei An:	+86-18297119044	18297119044@163.com

9. Map

Venue & Accommodation



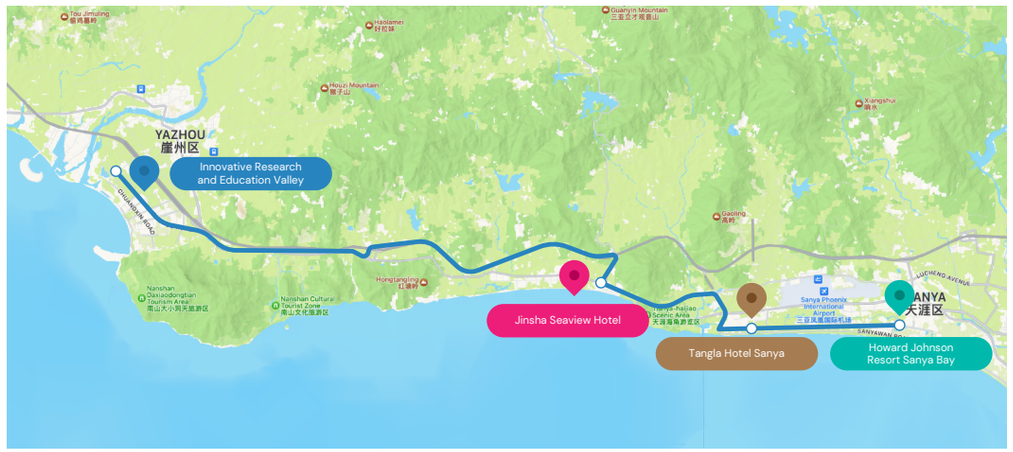
Innovative Research and Education Valley

Yazhou Bay Qianhe International Exchange Center (Hilton)

Beluga Sanya Discovery Ocean World Hotel

Sanya Yonyou Media Center

Yabulun Business Center

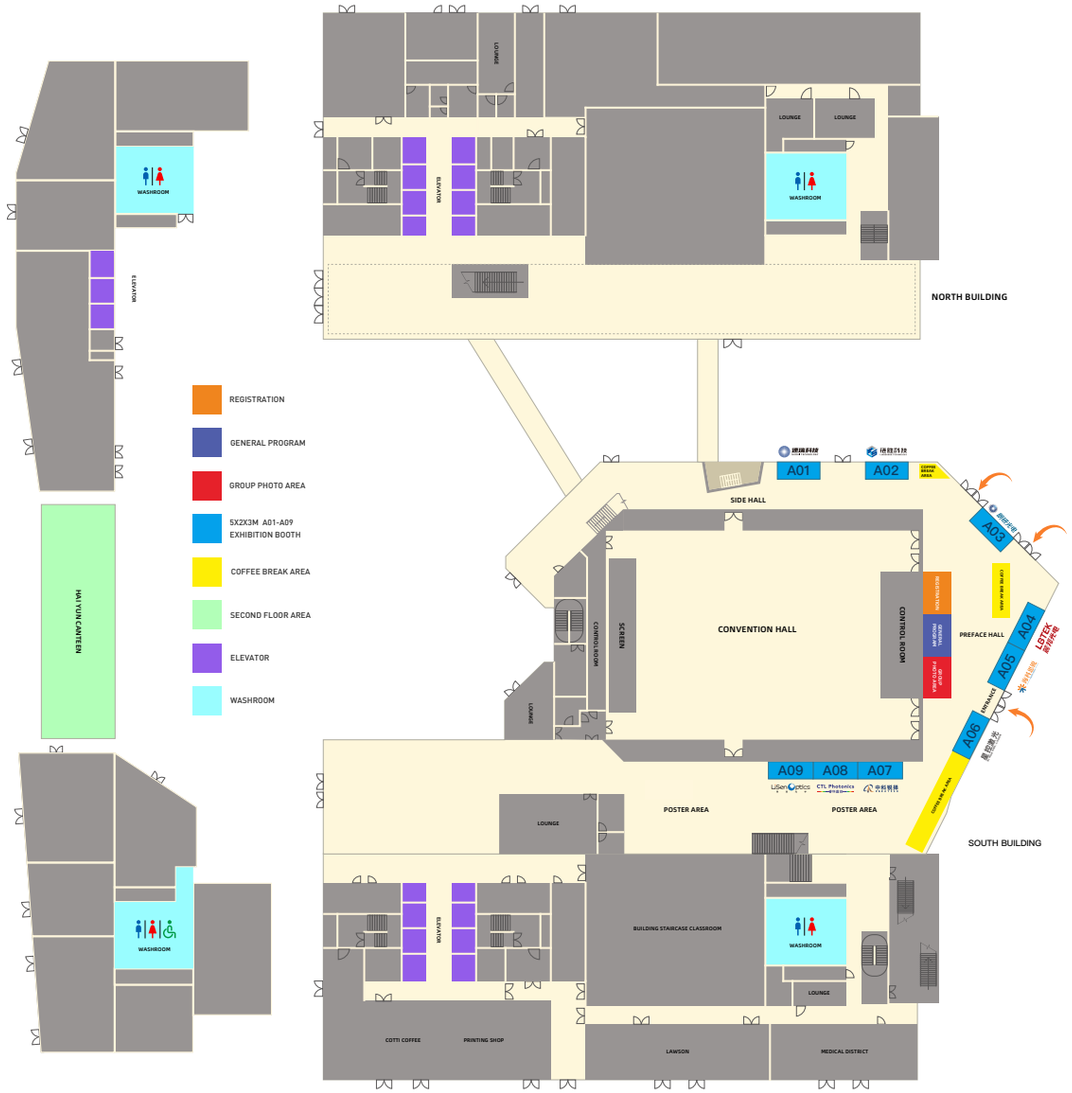


Jinsha Seaview Hotel

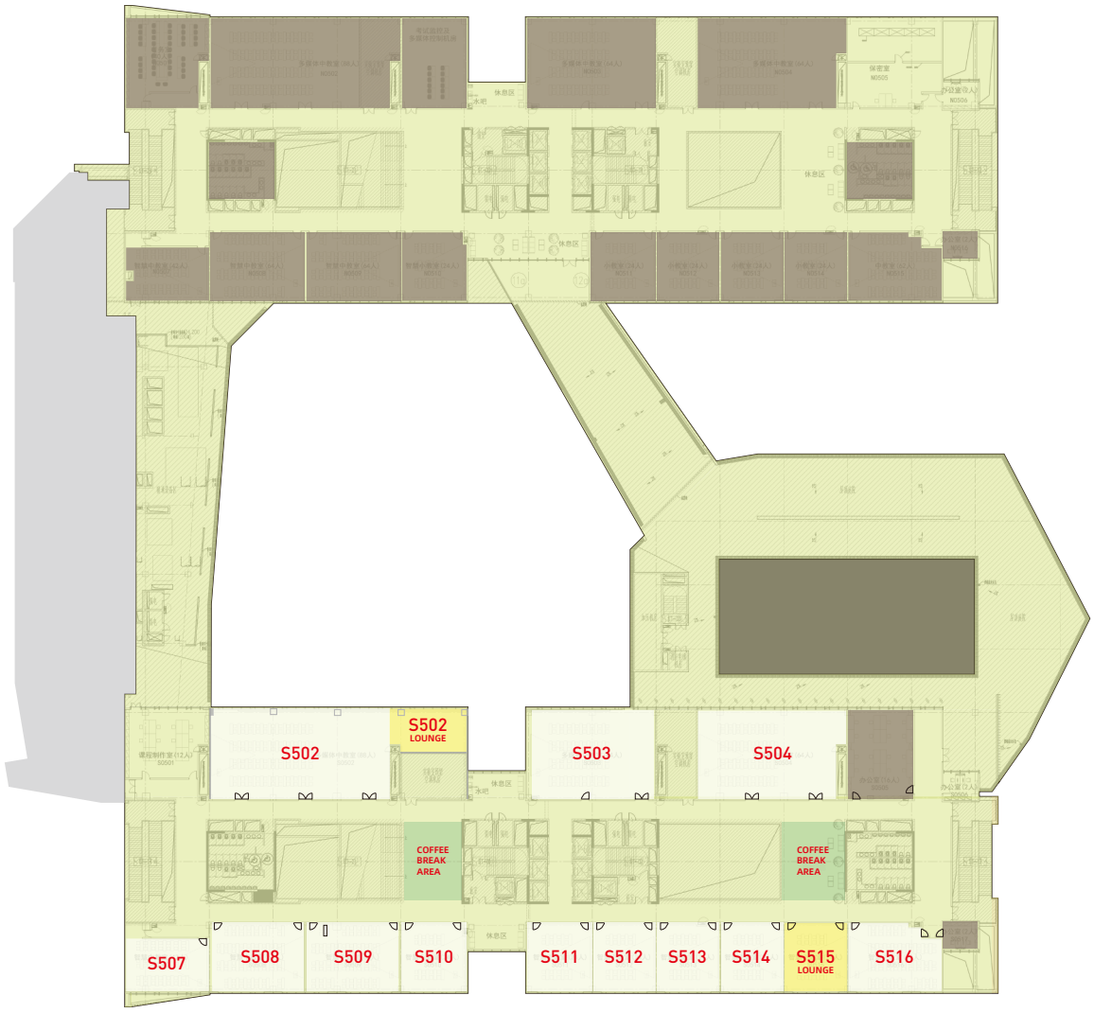
Tangla Hotel Sanya

Howard Johnson Resort Sanya Bay

Ground Floor Map



5th Floor Map



Agenda

International Conference on Ultrafast Science
and Quantum Sensing (USQS)

Jan 26, 2024

Plenary Talks

Time	Speaker/Affiliation	Title	Type
09:00-09:15	Welcome and Opening Remarks		
	Chair：Ruxin Li（李儒新）ShanghaiTech University/ Shanghai Institute of Optics and Fine Mechanics，CAS		
09:15-09:55	Andrius Baltuška Vienna University of Technology	Nonlinear optics with femtosecond pulse bursts	Plenary
09:55-10:35	Hong Guo（郭弘） Peking University	Quantum technologies: from sensing to perception	Plenary
10:35-11:00	Conference Photograph and Tea Break		
	Chair：Heping Zeng（曾和平）East China Normal University		
11:00-11:40	Oliver H. Heckl University of Vienna	Crystalline supermirrors for infrared applications	Plenary
11:40-12:20	Zhigang Chen（陈志刚） Nankai University	Nontrivial control of light	Plenary
12:20	Lunch		

Jan 26, 2024

Keynote Talks（Ultrafast Science）

Time	Speaker/Affiliation	Title	Type
	Chair：Jianlin Zhao（赵建林）Northwestern Polytechnical University		
13:30-14:15	Wentao Wang（王文涛） Shanghai Institute of Optics and Fine Mechanics，CAS	Table-top ultrafast free-electron laser	Keynote
14:15-15:00	Jian Wu（吴健） East China Normal University	Light-induced dynamics of molecules: from uni- to bi-molecules	Keynote
15:00-15:10	Tea Break		
	Chair：Hongbo Sun（孙洪波）Tsinghua University		
15:10-15:55	Zhanshan Wang（王占山） Tongji University	Recent research development of ultrafast laser coatings	Keynote
15:55-16:40	Zhongkun Hu（胡忠坤） Huazhong University of Science and Technology	High precision measurement with atom interferometry	Keynote

16:40-16:50	Tea Break		
	Chair：Dajun Ding（丁大军）Jilin University		
16:50-17:35	Zhiyi Wei（魏志义） Institute of Physics , CAS	Advanced ultrafast lasers for ultrafast sciences	Keynote
17:35-18:20	Shuangchen Ruan（阮双琛） Shenzhen Technology University	Kilowatt-class ultrafast thin disk laser	Keynote
19:00	Dinner		

Jan 26, 2024

Keynote Talks（Quantum Sensing）

Time	Speaker/Affiliation	Title	Type
	Chair：Tiancai Zhang（张天才）Shanxi University		
13:30-14:15	Xuehua Wang（王雪华） Sun Yat-sen University	Effective control of photon emissions and highly-efficient on-demand quantum light sources	Keynote
14:15-15:00	Jianwei Wang（王剑威） Peking University	Silicon quantum photonic devices and circuits	Keynote
15:00-15:10	Tea Break		
	Chair：Zhaohui Li（李朝晖）Sun Yat-sen University		
15:10-15:55	Shougang Zhang（张首刚） National Time Service Center, CAS	Time-frequency measurement and transmission	Keynote
15:55-16:40	Jing Zhang（张靖） Shanxi University	Atomic Bose-Einstein condensate in a twisted-bilayer optical lattice	Keynote
16:40-16:50	Tea Break		
	Chair：Yufang Liu（刘玉芳）Henan Normal University		
16:50-17:35	Li You（尤力） Tsinghua University	Quantum enhanced sensing with spinor atomic condensates in linear and nonlinear interferometries	Keynote
17:35-18:20	Qiang Zhang（张强） University of Science and Technology of China	Optics interference and quantum information processing	Keynote
19:00	Dinner		

Jan 27, 2024

Session1： 超快强场激光科学与技术/Ultrafast High-Intensity Laser Science and Technology

Time	Speaker/Affiliation	Title	Type
	Chair：Xiaojun Liu（柳晓军） Innovation Academy for Precision Measurement Science and Technology, CAS		
09:00-09:25	**Jing Chen（陈京）** University of Science and Technology of China	Channel coupling dynamics of deep-lying orbitals in molecular high-harmonic generation	Invited
09:25-09:50	**Chengyin Wu（吴成印）** Peking University	Photoelectron emission and high-order harmonic generation from solids driven by strong femtosecond laser pulses	Invited
09:50-10:15	**Wei Quan（全威）** Innovation Academy for Precision Measurement Science and Technology, CAS	Ultrafast ionization of atoms and molecules subject to elliptically polarized laser fields	Invited
10:15-10:30	**Yonggang Yang** Shanxi University	Attosecond charge migration: simulations, manipulations, and applications	Oral
10:30-10:50	Tea Break		
	Chair：Jing Chen（陈京）Institute of Applied Physics and Computational Mathematics, CAS		
10:50-11:15	**Yuhai Jiang（江玉海）** ShanghaiTech University	Manipulating non-sequential and sequential above threshold double ionization in cold Sr atoms	Invited
11:15-11:40	**Yueming Zhou（周月明）** Huazhong University of Science and Technology	Attosecond-resolved non-dipole photoionization dynamics	Invited
11:40-12:05	**Difa Ye（叶地发）** Institute of Applied Physics and Computational Mathematics, CAS	Shepherd electron effects in multiple ionization of rubidium by circularly polarized intense laser fields	Invited
12:05-14:00	Lunch		
	Chair：Zengxiu Zhao（赵增秀） National University of Defense Technology		
14:00-14:25	**Jiansheng Liu（刘建胜）** Shanghai Normal University	Radiation dynamics on a femtosecond laser-irradiated wire	Invited
14:25-14:50	**Xueguang Ren（任雪光）** Xi'an Jiaotong University	Ultrafast dynamics of atoms, molecules and clusters upon inner-valence ionization	Invited
14:50-15:15	**Songbin Zhang（张松斌）** Shaanxi Normal University	Auger electron spectroscopy by attosecond X-ray pulses	Invited
15:15-15:40	**Wenbin Zhang（张文斌）** East China Normal University	Tracking and steering ultrafast dynamics on nanoparticle surfaces	Invited
15:40-16:00	Tea Break		
	Chair：Jiansheng Liu（刘建胜）Shanghai Normal University		
16:00-16:25	**Huailiang Xu（徐淮良）** Jilin University	Nonlinear propagation of ultrafast intense laser and its application in atmospheric sensing and combustion science	Invited
16:25-16:50	**Yi Liu（刘一）** University of Shanghai for Science and Technology	Vortex and vector air lasing	Invited
16:50-17:15	**Chuanshan Tian（田传山）** Fudan University	Few-cycle, gapless, and intense terahertz source for nonlinear terahertz spectroscopy	Invited
17:15-17:30	**Pei Huang** Xi'an Institute of Optics and Precision Mechanics, CAS	Direct sampling of ultrashort laser pulses	Oral
19:00-21:00	Dinner		

Jan 28, 2024

Session1： 超快强场激光科学与技术/Ultrafast High-Intensity Laser Science and Technology

Time	Speaker/Affiliation	Title	Type
	Chair：Yuhai Jiang(江玉海) ShanghaiTech University		
09:00-09:25	**Ye Tian（田野）** Shanghai Institute of Optics and Fine Mechanics，CAS	Attosecond electron bunch generation and coherent surfacequsiparticle amplification pumped by electron bunch	Invited
09:25-09:50	**Peng Peng（彭鹏）** ShanghaiTech University	Line shape control in ultrafast XUV transient absorption spectroscopy	Invited

09:50-10:15	**Chuncheng Wang（王春成）** Jilin University	**Directly imaging excited state-resolved transient structures of water**	**Invited**
10:15-10:30	**Ya Bai（白亚）** Shanghai Institute of Optics and Fine Mechanics, CAS	**High-harmonic generation from topological states**	**Oral**
10:30-10:50	**Tea Break**		
	Chair：Yi Liu（刘 一）University of Shanghai for Science and Technology		
10:50-11:15	**Chunxiang Xu（徐春祥）** Southeast University	**Two-dimensional heterointerface-resolved ultrafast spectroscopy**	**Invited**
11:15-11:40	**Guoqing Chang（常国庆）** Institute of Physics, CAS	**High-power mJ femtosecond fiber laser based on passive coherent combination**	**Invited**
11:40-12:05	**Xiaowei Wang（王小伟）** National University of Defense Technology	**The generation and characterization of few-cycle isolated attosecond pulses**	**Invited**
12:05-14:00	**Lunch**		
	Chair：Huailiang Xu（徐淮良）Jilin University		
14:00-14:25	**Chunfeng Zhang（张春峰）** Nanjing University	**Coherent dynamics of correlated triplet pairs in singlet fission oligomers**	**Invited**
14:25-14:50	**Xuebin Bian（卞学滨）** Innovation Academy for Precision Measurement Science and Technology, CAS	**Role of bound states in high-order harmonic and THz generation in liquids**	**Invited**
14:50-15:15	**Minglie Hu（胡明列）** Tianjin University	**Attosecond soliton molecule dynamics and modulations**	**Invited**
15:15-15:30	**Fenghao Sun (孙烽豪)** Harbin Institute of Technology, Weihai	**Single-shot imaging of surface molecular ionization in insulation and metal nanosystems**	**Oral**
15:30-15:50	**Tea Break**		
	Chair：Weifeng Yang（杨玮枫）Hainan University		
15:50-16:15	**Ping Chen（陈萍）** Xi'an Institute of Optics and Precision Mechanics, CAS	**Passive ultrafast optical imaging**	**Invited**
16:15-16:40	**Hainian Han (韩海年)** Institute of Physics, CAS	**Dual-comb interchanging absolute distance measurement with non-ambiguity range extension**	**Invited**
16:40-17:05	**Qingcao Liu（刘情操）** Harbin Institute of Technology, Weihai	**Tracking of plasmon dephasing in the quantum limit**	**Invited**
17:05-17:30	**Dongdong Zhang（张栋栋）** Jilin University	**Tuning effective Rabi frequency in resonant photoionization**	**Invited**
17:30-17:45	**Rongfeng Yuan（苑荣峰）** The Hong Kong University of Science and Technology (Guangzhou)	**A composite electrodynamic mechanism to reconcile spatiotemporally resolved exciton transport in quantum dot superlattices**	**Oral**
19:00-21:00	**Dinner**		

Session Chairs

Peixiang Lu —— Huazhong University of Science and Technology

Zhiyi Wei —— Institute of Theoretical Physics, CAS

Dajun Ding —— Jilin University

Jian Wu —— East China Normal University

Session Committee

Feng He
Shanghai Jiao Tong University

Yuhai Jiang
ShanghaiTech University

Pengfei Lan
Huazhong University of Science and Technology

Xiaojun Liu
Innovation Academy for Precision Measurement Science and Technology, CAS

Yi Liu
University of Shanghai for Science and Technology

Yunquan Liu
Peking University

Yutong Li
Institute of Theoretical Physics, CAS

Yuxin Leng
Shanghai Institute of Optics and Fine Mechanics, CAS

Huailiang Xu
Jilin University

Weifeng Yang
Hainan University

Zengxiu Zhao
National University of Defense Technology

Jan 27, 2024

Session2： 超快激光技术与器件/Ultrafast Laser Technology and Devices

Time	Speaker/Affiliation	Title	Type
	Chair：Zhongwei Fan（樊仲维）University of Chinese Academy of Sciences		
09:00-09:30	**Dezhen Shen（申德振）** Changchun Institute of Optics, Fine Mechanics and Physics, CAS	Application of TERS technology in characterization and control of semiconductor single point defects	Keynote
09:30-09:50	**Fei Xu（徐飞）** Nanjing University	Fiber integrated devices for high-repetition rate ultrafast lasers	Invited
09:50-10:10	**Weitao Liu（刘韡韬）** Fudan University	Lattice vibrations at interfaces probed by sum-frequency spectroscopy	Invited
10:10-10:30	**Lei Xi（奚磊）** Southern University of Science and Technology	Mesoscopic optical brain imaging	Invited
10:30-10:50	**Tea Break**		
	Chair：Zhiwei Lv（吕志伟）Hebei Univerisity of Technology		
10:50-11:20	**Zhongwei Fan（樊仲维）** **Jie Li（李捷）** University of Chinese Academy of Sciences	High harmonic extreme-ultraviolet laser and applications	Keynote
11:20-11:40	**Wenhao Li（李文昊）** **Zhaowu Liu（刘兆武）** Changchun Institute of Optics, Fine Mechanics and Physics, CAS	Technology of high-precision grating interferometer	Invited
11:40-12:00	**Fang Bo（薄方）** **Zhenzhong Hao（郝振中）** Nankai University	Nonlinear optical effects in lithium niobate microcavities	Invited
12:00-14:00	**Lunch**		

	Chair：Dezhen Shen（申德振）Changchun Institute of Optics, Fine Mechanics and Physics, CAS		
14:00-14:30	**Yaolong Li（李耀龙）** Peking University	Femtosecond TR-PEEM for imaging near-field modes and excited-state dynamics	Keynote
14:30-14:50	**Chunyu Guo（郭春雨）** Shenzhen University	High-power mid-infrared ultrafast fiber lasers	Invited
14:50-15:10	**Jiangfeng Zhu（朱江峰）** Xidian University	High power femtosecond Yb solid state laser technology	Invited
15:10-15:30	**Shumin Zhang（张书敏）** Hebei Normal University	Recent advances of all-fiber mamyshev oscillator	Invited
15:30-15:50	**Tea Break**		
	Chair：Shangqing Gong（龚尚庆）East China University of Science and Technology		
15:50-16:10	**Wei Wu (武威)** University College London	Ultrafast optical control of spins in molecules: advancing the high-temperature molecular quantum computing	Invited
16:10-16:30	**Gehui Xie（谢戈辉）** East China Normal University	Investigation into the high-power optical frequency comb and ultrashort pulse coherent beam combination technology	Invited
16:30-16:50	**Xuezong Yang（杨学宗）** Hangzhou Institute for Advanced Study, UCAS	GHz-level synchronously-pumped picosecond diamond raman laser at 1240 nm	Invited
16:50-17:10	**Yu Yu （于宇）** Hebei Univerisity of Technology	High repetition rate large energy and short pulse zig-zag slab laser amplifiers	Invited
17:10-17:25	**Ya Wang（王雅）** Beijing University of Posts and Telecommunications	1.2 GHz pulse from an solidstate Yb:fiber laser	Oral
17:25-17:40	**Tong Zhang（张彤）** Xi'an Institute of Optics and Precision Mechanics, CAS	Towards a space qualified Kerr lens mode locked femtosecond laser within a 40 mL volume	Oral
19:00-21:00	**Dinner**		

Session Chairs

Zhongwei Fan —— School of Optoelectronics, UCAS

Wei Zhao —— Xi'an Institute of Optics and Precision Mechanics, CAS

Zhanshan Wang —— TongJi University

Zhiwei Lv —— Hebei University of Technology

Pu Wang —— Beijing University of Technology

Session Committee

Xinbin Cheng
TongJi University

Shangqing Gong
East China University of
Science and Technology

Qiang Lin
Zhejiang University of Technology

Qiang Liu
Tsinghua University

Wenxue Li
East China Normal University

Zhiyuan Li
South China Normal University

Liejia Qian
Shanghai Jiao Tong University

Liangbi Su
Shanghai Institute of Ceramics, CAS

Dezhen Shen
Changchun Institute of Optics,
Fine Mechanicsand Physics, CAS

Tingyun Wang
Shanghai University

Wentao Wang
Shanghai Institute of Optics and Fine Mechanics, CAS

Yuncai Wang
Guangdong University of Technology

Haohai Yu
Shandong University

Tao Zhu
Chongqing University

Jan 27, 2024

Session3： 光纤激光与智能控制/Fiber Laser and Intelligent Control

Time	Speaker/Affiliation	Title	Type
	Chair：Lilin Yi（义理林）Shanghai Jiao Tong University		
09:00-09:30	**Pu Zhou（周朴）** National University of Defense Technology	High power fiber lasers: Progress and prospect	Keynote
09:30-09:50	**Long Tian（田龙）** Shanxi University	Noise evaluation and quantum enhanced suppression of spaceborne fiber amplifiers	Invited
09:50-10:10	**Kan Wu（吴侃）** Shanghai Jiao Tong University	Optical frequency comb dynamics in fiber Fabry–Perot microcavities	Invited
10:10-10:30	**Yuanfei Zhang（张远飞）** Southeast University	Generation and application of programmable hundred-GHz-spacing optical frequency comb in silicon platform	Invited
10:30-10:50	**Tea Break**		
	Chair：Pu Zhou（周朴）National University of Defense Technology		
10:50-11:20	**Minglie Hu（胡明列）** Tianjin University	Artificial intelligence-assisted ultrafast laser nonlinear optics	Keynote
11:20-11:40	**Zhichao Luo（罗智超）** South China Normal University	Pulsation dynamics of pure quaternary soliton fiber lasers	Invited
11:40-12:00	**Gang Xu（徐刚）** Huazhong University of Science and Technology	Polarization dynamics of temporal cavity solitons in passive Kerr resonators	Invited
12:00-14:00	**Lunch**		
	Chair：Xueming Liu（刘雪明）Southeast University		
14:00-14:30	**Yan Feng（冯衍）** Hangzhou Institute for Advanced Study, UCAS	Nonlinear conversion between single frequency laser and frequency comb	Keynote

14:30-14:50	**Wenbin He （何文彬）** Shanghai Institute of Optics and Fine Mechanics, CAS	**Self-emergent Kuramoto transition in collective oscillations of massive optical solitons through optomechanical interactions**	**Invited**
14:50-15:10	**Xiabing Zhou（周夏冰）** Shanghai Jiao Tong University	**Generation of 95 fs mode-locked pulses from dispersion-managed Er:ZBLAN fiber laser at 2.8 μm**	**Invited**
15:10-15:30	**Junsong Peng（彭俊松）** East China Normal University	**Nonlinear dynamics and intelligent control of ultrafast breather laser**	**Invited**
15:30-15:50	**Tea Break**		
	Chair: Yan Feng（冯衍）Hangzhou Institute for Advanced Study, UCAS		
15:50-16:10	**Xingliang Li（李星亮）** Hebei Normal University	**Dynamics characteristics of noise-like pulses**	**Invited**
16:10-16:30	**Chaoqing Dai（戴朝卿）** Zhejiang A & F University	**Information encoding based on solitons in the mode-locked fiber laser**	**Invited**
16:30-16:50	**Yongjian Pan（潘勇剑）** Anhui Institute of Optics and Fine Mechanics, CAS	**A self-starting mode-locked figure-9 fiber laser with large energy and narrow pulse width**	**Invited**
16:50-17:10	**Yiyang Luo（罗亦杨）** Chongqing University	**Programmable manipulation on dissipative solitons and the sensing applications**	**Invited**
17:10-17:30	**Bokun Liu** National University of Defense Technology	**Compact and fast frequency stabilization for single-frequency fiber lasers**	**Invited**
19:00-21:00	**Dinner**		

Jan 28, 2024

Session3： 光纤激光与智能控制/Fiber Laser and Intelligent Control

Time	Speaker/Affiliation	Title	Type
	Chair：Kan Wu（吴侃）Shanghai Jiao Tong University		
09:00-09:20	**Dong Mao（毛东）** Northwestern Polytechnical University	**Polychromatic soliton in fiber laser**	**Invited**
09:20-09:40	**Jian Wu（吴坚）** National University of Defense Technology	**Ultrafast pulse fiber lasers generation via Van der Waals layered materials devices**	**Invited**
09:40-10:00	**Xiuqi Wu（吴修齐）** East China Normal University	**Intelligent control of nonlinear dynamics in mode-locked lasers**	**Invited**
10:00-10:20	**Mengmeng Han（韩孟孟）** Hebei Normal University	**Pulsating soliton with synchronized and unsynchronized resonant dispersive waves**	**Invited**
10:30-10:50	**Tea Break**		
	Chair：Dong Mao（毛东）Northwestern Polytechnical University		
10:50-11:10	**Tianhao Xian（贤天浩）** Shanghai Jiao Tong University	**Non-Hermitian coupling and mode-locked laser**	**Invited**
11:10-11:30	**Edgar Kakais** Vienna University of Technology	**High-energy cryogenic Yb amplifiers and their applications to nonlinear post-compression and tunable wavelength shifting**	**Invited**
11:30-11:50	**Yudong Cui（崔玉栋）** Zhejiang University	**Dichromatic soliton molecule in ultrafast fiber laser**	**Invited**
12:00-14:00	**Lunch**		

Session Chairs

Xueguang Qiao —— NorthWest University

Limin Tong —— Zhejiang University

Xueming Liu —— Southeast University

Lilin Yi —— Shanghai Jiao Tong University

Session Committee

Dabing Li
Changchun Institute of Optics, Fine Mechanicsand Physics, CAS

Junsong Peng
East China Normal University

Meng Pang
Shanghai Institute of Optics and Fine Mechanics, CAS

Qinghai Song
Harbin Institute of Technology

Kan Wu
Shanghai Jiao Tong University

Guoqiang Xie
Shanghai Jiao Tong University

Yulei Wang
Hebei University of Technology

Anbang Wang
Guangdong University of Technology

Gang Xu
Huazhong University of Science and Technology

Fei Xu
Nanjing University

Pu Zhou
National University of Defense Technology

Yaohui Zheng
Shanxi University

Jan 27, 2024

Session4： 超快激光智能制造/Ultrafast Laser Intelligence Manufacturing

Time	Speaker/Affiliation	Title	Type
	Chair：Xuesong Mei（梅雪松） Xi'an Jiaotong University		
09:00-09:30	Qidai Chen（陈岐岱） Jilin University	Ultra-fast laser micro/nanofabrication technologies and applications	Invited
09:30-10:00	Quanzhong Zhao（赵全忠） Shanghai Institute of Optics and Fine Mechanics, CAS	Ultrafast laser micromaching of superhard materials	Invited
10:00-10:30	Jianjun Yang（杨建军） Changchun Institute of Optics,Fine Mechanicsand Physics, CAS	Femtosecond laser induced high-quality subwavelength periodic structures and their applications	Invited
10:30-10:45	Tea Break		
	Chair：Jianrong Qiu（邱建荣）Zhejiang University，Dezhi Tan（谭德志）Zhejiang Lab		
10:45-11:10	Jianfeng Yan（闫剑峰） Tsinghua university	Research progress in ultrafast laser processing of functional devices	Invited
11:10-11:35	Shaolin Xu（徐少林） Southern University of Science and Technology	Liquid-assisted patterned laser ablation for high-precision grooving with controllable cross sections	Invited
11:35-12:00	Hongliang Liu（刘洪亮） Nankai University	2D and 3D mmi demultiplexers fabricated by femtosecond laser direct writing in crystals	Invited
12:00-14:00	Lunch		
	Chair：Hongbo Sun（孙洪波） Tsinghua University		
14:00-14:30	Yonglai Zhang（张永来） Jilin University	Laser fabrication of soft electromechanical systems	Invited
14:30-15:00	Tianqing Jia（贾天卿） East China Normal University	Mechanisms and manipulation of ultrafast laser-induced high-spatial frequency Lipss	Invited
15:00-15:30	Xin Li（李欣） Beijing Institute of Technology	Micro/nano manufacturing with multi-dimensional photochemical regulation by spatially/temporally shaped femtosecond laser	Invited
15:30-15:50	Tea Break		
	Chair：Jianjun Yang（杨建军） Changchun Institute of Optics, Fine Mechanicsand Physics, CAS		
15:50-16:15	Zhengjie Fan（凡正杰） Xi'an Jiaotong University	Research on control of vector and relative beam attitude during femtosecond laser drilling of film cooling hole	Invited
16:15-16:40	Yuechen Jia（贾曰辰） Shandong University	Micro-/nano-photonic devices based on localized material modification in optical crystals	Invited
16:40-17:05	Qisong Li（李奇松） University of Shanghai for Science and Technology	Two-dimensional suprawavelength periodic structuring of ZnO indueced by femtosecond laser for absorption enhancement and functional applications	Invited
17:05-17:30	Lei Wang（王磊） Jilin University	Optical far-field modulation of femtosecond pulses for nearfield-induced nanostructures	Invited
17:30-17:55	Jinglan Huo（霍静岚） Xidian university	Fabrication of biomimetic super-wettability micro-nano structures by femtosecond laser and its application	Invited
19:00-21:00	Dinner		

Jan 28, 2024

Session4： 超快激光智能制造/Ultrafast Laser Intelligence Manufacturing

Time	Speaker/Affiliation	Title	Type
	Chair：Huigao Duan（段辉高）Hunan University		
09:00-09:30	Dong Wu（吴东） University of Science and Technology of China	High-efficiency femtosecond laser microfabrication for 3D functional devices	Invited
09:30-10:00	Linhan Lin（林琳涵） Tsinghua University	Laser 3D nanoprinting of inorganic materials	Invited
10:00-10:30	Changrui Liao（廖常锐） Shenzhen University	Ultrafast laser fabricated optical fiber devices	Invited
10:30-10:45	Tea Break		

	Chair：Tianqing Jia（贾天卿）East China Normal University		
10:45-11:10	Dongshi Zhang（张东石） Shanghai Jiao Tong University	Recent progress in laser synthesis and applications	Invited
11:10-11:35	Lisha Fan（范丽莎） Zhejiang University of Technology	Laser induced periodic surface structure in functional oxides	Invited
11:35-12:00	Jiangyou Long（龙江游） Guangdong University of Technology	Functional surface structures prepared by ultrafast laser-based methods for efficient boiling heat transfer	Invited
12:00-14:00	Lunch		
	Chair：Dong Wu（吴东）University of Science and Technology of China		
14:00-14:30	Honghua Fang（方红华） Tsinghua University	Ultrafast meets ultrasmall: laser writing at the quantum frontier	Invited
14:30-15:00	Dezhi Tan（谭德志） Zhejiang Lab	Ultrafast laser induced structure regulation of glass and applications	Invited
15:00-15:30	Qiang Wu（吴强） Nankai University	Terahertz stimulated phonon polariton and terahertz integration on lithium niobate chip	Invited
15:30-15:40	Tea Break		
	Chair：Yonglai Zhang（张永来） Jilin University		
15:40-16:05	Qifeng Ruan（阮奇峰） Harbin Institute of Technology	Multiplexed structural colors by two-photon polymerization lithography	Invited
16:05-16:30	Yunlu Sun（孙允陆） Fudan University	Multiphysical laser micro/nano-fabrication of optical or electronic devices	Invited
16:30-16:55	Guodong Zhang（张国栋） Northwestern Polytechnical University	Ultrafast laser inducing nanovoids in bulk and its application	Invited
16:55-17:20	Aifei Pan（潘爱飞） Xi'an Jiaotong University	Multi-scale theoretical research and the model construction of ultrashort laser processing	Invited
17:20-17:45	Xiaodong Wang（王晓东） Westlake university	Snapshot compressive microscopy enables wide-field and high-resolution in-situ monitoring of ultrafast laser processsing	Oral
19:00-21:00	Dinner		

Session Chairs

Hongbo Sun —— Tsinghua University

Jianrong Qiu —— Zhejiang University

Xuesong Mei —— Xi'an Jiaotong University

Session Committee

Qidai Chen
Jilin University

Huigao Duan
Hunan University

Tianqing Jia
East China Normal University

Dong Wu
University of Science and Technology of China

Wei Xiong
Huazhong University of Science and Technology

Jianjun Yang
Changchun Institute of Optics, Fine Mechanics and Physics, CAS

Quanzhong Zhao
Shanghai Institute of Optics and Fine Mechanics, CAS

Yonglai Zhang
Jilin University

Jan 27, 2024

Session5： 飞秒光梳及应用/Optical Frequency Comb and Applications

Time	Speaker/Affiliation	Title	Type
	Chair：Guanhao Wu（吴冠豪）Tsinghua University		
09:00-09:30	Zhenda Xie（谢臻达） Nanjing University	Low-noise frequency synthesis based on microcomb at a few gigahertz	Invited
09:30-09:50	Chengying Bao（鲍成英） Tsinghua University	Dual-microcomb generation and its application in spectroscopy	Invited
09:50-10:10	Chunhua Dong（董春华） University of Science and Technology of China	Frequency comb in the lithium niobate microresonators	Invited
10:10-10:30	Guochao Wang（王国超） National University of Defense Technology	A generation system of repetition-rate-locked Kerr soliton microcombs	Invited
10:30-10:50	Tea Break		
	Chair：Chengying Bao（鲍成英）Tsinghua University		
10:50-11:10	Guanhao Wu（吴冠豪） Tsinghua University	Dual-comb ranging methodologies, systems and applications	Invited
11:10-11:30	Youjian Song（宋有建） Tianjin University	Ultra-high timing precision femtosecond lasers and applications	Invited
11:30-11:45	Xinyu Fan（樊昕昱） Shanghai Jiao Tong University	Dual-comb spectrosocy with electro-optic combs	Invited
11:45-12:00	Zejiang Deng（邓泽江） East China Normal University	Dual-comb spectroscopy based coherent multidimensional spectroscopy	Invited
12:00-14:00	Lunch		

	Chair：Linqiang Hua（华林强）Institute of Precision Measurement Science and Technology Innovation, CAS		
14:00-14:20	Yanyan Zhang（张颜艳） Northwestern Polytechnical University	Erbium-doped femtosecond optical frequency comb and its applications in precisephysical measurements	Invited
14:20-14:40	Lulu Yan（闫露露） National Time Service Center, CAS	Photonic microwave generation in the X- and W-band using erbium-doped fiber optical frequency comb	Invited
14:40-15:00	Ziyang Chen（陈子扬） Peking University	Optical-frequency-comb-based time-frequency transfer	Invited
15:00-15:15	Yufei Zhang（张宇飞） Peking University	Fiber optical time delay measurement with dual-comb linear optical sampling up to hundred femtosecond precision	Invited
15:15-15:30	Dongrui Yu（于东睿） Peking University	Femtosecond-level electrical signal time-interval measurement with linear optical sampling	Invited
15:30-15:50	Tea Break		
	Chair：Yanyan Zhang （张颜艳）Northwestern Polytechnical University		
15:50-16:10	Linqiang Hua（华林强） Institute of Precision Measurement Science and Technology Innovation, CAS	Measurement on the linewidth of a home-build XUV comb using direct frequency comb spectroscopy with molecule	Invited
16:10-16:30	Xin Zhao（赵欣） Beihang University	Single-cavity dual-comb fiber laser and applications	Invited
16:30-16:50	Chenliang Zhao（赵晨亮） Anhui Institute of Optics and Fine Mechanics, CAS	An efficient mid infrared dfg optical comb with broadband and wide-range	Invited
16:50-17:05	Tingting Liu (刘婷婷) East China Normal University	Compact all-fiber laser comb and its applications	Invited
17:05-17:20	Shangsu Ding（丁尚甦） Bejing University of Post and Telecommunication	High-resolution comb-assisted microwave frequency identification and down-conversion system	Oral
17:20-17:35	Linbo Tian（田遴博） Tsinghua University	Multi-parameters analysis of the gases based on mid-infrared optical frequency comb and deep learning	Oral
17:35-17:50	Linbo Tian（田遴博） Tsinghua University	Spectra:an ad adaptable transformer model for broadband spectroscopic gas quantification independent of hardware constraints	Oral
19:00-21:00	Dinner		

Session Chairs

Shougang Zhang —— National Time Service Center, CAS

Zhongmin Yang —— South China Normal University

Shuiming Hu —— University of Science and Technology of China

Session Committee

Chengying Bao
Tsinghua University

Xinyu Fan
Shanghai Jiao Tong University

Wei Ren
Chinese University of Hong Kong

Guanhao Wu
Tsinghua University

Qiang Wang
Changchun Institute of Optics Fine Mechanics and Physics, CAS

Zhenda Xie
Nanjing University

Zheng Zheng
Beihang University

Jan 27, 2024

Session6： 原子分子精密光谱/Atomic and Molecular Spectroscopy

Time	Speaker/Affiliation	Title	Type
	Chair：Chuanshan Tian（田传山）Fudan University		
09:00-09:30	Ming Yan（闫明） East China Normal University	Molecular fingureprinting with optical frequency combs	Invited
09:30-09:50	Cunfeng Cheng（程存峰） University of Science and Technology of China	Precision measurements on molecules	Invited
09:50-10:10	Hailing Wang（汪海玲） East China Normal University	Molecular spectra of metal–containing molecules relevant to precision mesurements	Invited
10:10-10:30	Gaoren Wang（王高仁） Dalian University of Technology	Analyzing the photoassociation spectrum of ultracold $^{85}Rb^{133}Cs$ molecule	Invited
10:30-10:50	Tea Break		
	Chair：Cunfeng Cheng（程存峰）University of Science and Technology of China		
10:50-11:10	Leilei Yan（闫磊磊） Zhengzhou University	Quantum information thermodynamics and enhanced sensing in the trapped ion system	Invited
11:10-11:30	Haitao Sun（孙海涛） East China Normal University	Study on the electronic structures of weak bond clusters using high–resolution negative ion photoelectron spectra	Invited
11:30-11:50	Xuetao Gan (甘雪涛) Northwestern Polytechnical University	Second harmonic generation spectroscopy of two–dimensional materials	Invited
12:00-14:00	Lunch		
	Chair：Wenkai Zhang（张文凯）Beijing Normal University		
14:00-14:20	Yufei Ma（马欲飞） Harbin Institute of Technology	Quartz–tuning–fork based laser spectroscopy for trace gas sensing	Invited
14:20-14:40	Weiguang Ma（马维光） Shanxi University	A robust NICE–OHMS spectrometer based on optical feedback frequency locking	Invited

14:40-15:10	Chuanliang Li（李传亮） Taiyuan University of science and technology	CRDS and its application in radical molecule spectroscopy and chemical kinetics	Invited
15:10-15:30	Zhenhui Du（杜振辉） Tianjin University	Progress towards in-situ traceability of gas thermometry with molecular spectroscopy	Invited
15:30-15:50	Tea Break		
	Chair：Yufei Ma（马欲飞）Harbin Institute of Technology		
15:50-16:10	Wenkai Zhang（张文凯） Beijing Normal University	X-ray free electron laser and its application in ultrafast dynamics research	Invited
16:10-16:30	Chuancun Shu (束传存) Central South University	Precision control of molecular-polariton rotation	Invited
16:30-16:50	Huadong Lu（卢华东） Shanxi University	High power all-solid-state single-frequency continuous-wave laser with low noise	Invited
16:50-17:10	Xingdong Zhao（赵兴东） Henan Normal University	High-order and multiple exceptional points in pt-symmetric photonic lattice	Invited
17:10-17:30	Xiaoguo Zhou（周晓国） University of Science and Technology of China	In situ Raman spectral indicator for succinimide intermediates in amyloid fibrillation kinetics of proteins	Invited
19:00-21:00	Dinner		

Session Chairs

Tiancai Zhang —— Shanxi University

Yufang Liu —— Henan Normal University

Xiaojun Liu —— Innovation Academy for Precision Measurement Science and Technology, CAS

Chuanshan Tian —— Fudan University

Session Committee

Cunfeng Cheng
University of Science and Technology of China

Gang Chen
Zhengzhou University

Shixun Dai
Ningbo University

Lunhua Deng
East China Normal University

Chuanliang Li
Taiyuan University of Science and Technology

Weiguang Ma
Shanxi University

Yufei Ma
Harbin Institute of Technology

Haibin Wu
East China Normal University

Ming Yan
East China Normal University

Jan 27, 2024

Session7： 量子精密测量与器件/Quantum Metrology and Devices

Time	Speaker/Affiliation	Title	Type
	Chairs：Hong Guo（郭弘）Peking University Teng Wu（吴腾）Peking University		
09:00-09:30	Xinhua Peng（彭新华） University of Science and Technology of China	Spin-based quantum sensing and its applications	Invited
09:30-09:50	Fangwen Sun（孙方稳） University of Science and Technology of China	Nanoscale quantum sensing with solid spins	Invited
09:50-10:10	Wei Li（李卫） Shanxi University	Distribute quantum sensing for radio-frequency signal	Invited
10:10-10:30	Chenxi Sun（孙晨曦） Peking University	Optimizing biomagnetic sensor performance through in silico diagnostics: a novel approach using simulated testing	Invited
10:30-10:50	Tea Break		
	Chair：Xinhua Peng（彭新华）University of Science and Technology of China		
10:50-11:20	Teng Wu（吴腾） Peking University	Atomic magnetometry for fundamental physics	Invited
11:20-11:40	Linjie Zhang（张临杰） Shanxi University	Enhanced measurement of radio electric field based on Rydberg atoms	Invited
11:40-12:00	Yu Zhou（周宇） Harbin Institute of Technology	Silicon carbide quantum photonic devices and chips	Invited
12:00-14:00	Lunch		
	Chairs：Zhongkun Hu（胡忠坤）Huazhong University of Science and Technology Yiqiu Ma（马怡秋）Huazhong University of Science and Technology		
14:00-14:30	Jietai Jing（荆杰泰） East China Normal University	Orbital angular momentum multiplexed quantum entanglement and its applications	Invited

14:30-14:50	**Fengxiao Sun（孙风潇）** Peking University	Generation of cat states via quantum entanglement and ultrafast optics	Invited
14:50-15:10	**Yin Cai（蔡寅）** Xi'an Jiaotong University	Reconfigurable multimode optical quantum entanglement networks：from generation to application	Invited
15:10-15:30	**Junfeng Wang（王俊峰）** Sichuan University	Quantum control and quantum precision measurement of silicon carbide color centers	Invited
15:30-15:50	**Tea Break**		
	Chair：Jietai Jing（荆杰泰）East China Normal University		
15:50-16:10	**Yiqiu Ma（马怡秋）** Huazhong University of Science and Technology	Quantum metrology in the gravitational wave detector and macroscopic quantum mechanics	Invited
16:10-16:30	**Hao Yan（颜浩）** Huazhong University of Science and Technology	High precision optical measurements in spacebore gravitational wave detectors	Invited
16:30-16:50	**Lingxiao Zhu（朱凌晓）** National University of Defense Technology	Progress of the movable quantum absolute gravimeter	Invited
16:50-17:10	**Wei Huang（黄巍）** South China Normal University	Terahertz technology based on Rydberg atoms	Invited
17:10-17:25	**Guilan Li（李贵兰）** Beijing Institute of Radio Measurement	Quantum measurement of electromagnetic fields	Invited
19:00-21:00	**Dinner**		

Jan 28, 2024

Session7： 量子精密测量与器件/Quantum Metrology and Devices

Time	Speaker/Affiliation	Title	Type
	Chairs：Fangwen Sun（孙方稳）University of Science and Technology of China **Geng Chen（陈耕）University of Science and Technology of China**		
09:00-09:30	**Mingtao Cao（曹明涛）** National Time Service Center, CAS	Towards the development of quantum interconnects: multiplexed efficient quantum memory	Invited
09:30-09:50	**Shaoping Shi（史少平）** Shanxi University	Demonstration of channel multiplexing quantum communication exploiting entangled sideband modes	Invited
09:50-10:05	**Lai Zhou** Beijing Academy of Quantum Information Sciences	Long distance quantum key distribution overcomes the rate–loss limit with open quantum channel	Oral
10:05-10:20	**Xie He** National University of Defense Technology	Research on multi–ion electroquadrupole frequency shift compensation algorithm	Oral
10:30-10:50	**Tea Break**		
	Chairs：Shougang Zhang（张首刚）National Time Service Center, CAS **Mingtao Cao（曹明涛）National Time Service Center, CAS**		
10:50-11:20	**Geng Chen（陈耕）** University of Science and Technology of China	Quantum metrology with indefinite causal order	Invited
11:20-11:35	**Chongyu Zhang** National University of Defense Technology	Feasibility study of gravitational wave measurement based on space light clock	Oral
11:35-11:50	**Bochen Wang** Beijing Jiaotong University	Spectral features of nondegenerate PDC and generation of heralded Fock states	Oral
12:00-14:00	**Lunch**		

Session Chairs

Hong Guo —— Peking University

Jing Zhang —— Shanxi University

Zhongkun Hu —— Huazhong University of Science and Technology

Xuehua Wang —— Sun Yat-sen University

Session Committee

Geng Chen
University of Science and Technology of China

Mingtao Cao
National Time Service Center, CAS

Wei Huang
South China Normal University

Yin Cai
Xi'an Jiaotong University

Kelin Gao
Wuhan Institute of Physics and Mathematics, CAS

Yao Huang
Wuhan Institute of Physics and Mathematics, CAS

Jietai Jing
East China Normal University

Bin Luo
Beijing University of Posts and Telecommunications

Guilan Li
STL, China Electronics Technology Group Corporation

Fangwen Sun
University of Science and Technology of China

Yiqiu Ma
Huazhong University of Science and Technology

Heng Shen
Shanxi University

Xiulai Xu
Peking University

Linjie Zhang
Shanxi University

Minkang Zhou
Huazhong University of Science and Technology

Mingsheng Zhan
Wuhan Institute of Physics and Mathematics, CAS

Shouzhu Zhang
Southern University of Science and Technology

Jan 27, 2024

Session8： 光谱遥感及应用/Spectroscopic Sensing and Applications

Time	Speaker/Affiliation	Title	Type
	Chair：Yongkang Dong （董永康）Harbin Institute of Technology		
09:00-09:30	**Mengyun Hu（胡梦云）** East China Normal University	Femtosecond plasma grating induced breakdown spectroscopy and applications	Keynote
09:30-09:50	**Weiwei Cai（蔡伟伟）** Shanghai Jiao Tong University	Recent progress in miniaturized reconstructive spectrometers	Invited
09:50-10:10	**Wei Ren（任伟）** The Chinese University of Hong Kong	Cavity-enhanced photoacoustic dual-comb spectroscopy	Invited
10:10-10:30	**Lianbo Guo（郭连波）** Huazhong University of Science and Technology	Fundamentals, instruments and applications of laser-induced breakdown spectroscopy	Invited
10:30-10:50	**Tea Break**		
	Chair：Lei Dong（董磊）Shanxi University		
10:50-11:20	**Yongkang Dong（董永康）** Harbin Institute of Technology	High-performance distributed optical fiber sensing and applications	Keynote
11:20-11:40	**Lixian Liu（刘丽娴）** Xidian University	High sensitive T-type resonator enhanced photoacoustsic trace gas detection	Invited
11:40-12:00	**Liang Mei（梅亮）** Dalian University of Technology	Atmospheric remote sensing using tunable diode laser absorption spectroscopy	Invited
12:00-14:00	**Lunch**		

Jan 27, 2024

Session8： 光谱遥感及应用/Spectroscopic Sensing and Applications

Time	Speaker/Affiliation	Title	Type
	Chair：Tengfei Wu（武腾飞）Changcheng Institute of Metrology & Measurement		
14:00-14:40	Lei Dong（董磊） Shanxi University	Ultra-sensitive gas photoacoustic technology and applications	Keynote
14:40-15:05	Zhe Wang（王哲） Tsinghua University	Last mile for LIBS to realize accurate quantification	Invited
15:05-15:30	Qingdong Zeng（曾庆栋） Hubei Engineering University	Research on the application of portable LIBS combined with machine learning algorithm in the detection and classification of special steel	Invited
15:30-15:50	Tea Break		
	Chair：Weiwei Cai （蔡伟伟）Shanghai Jiao Tong University		
15:50-16:20	Tengfei Wu（武腾飞） Changcheng Institute of Metrology & Measurement	Some metrology application examples by using the optical frequency comb	Keynote
16:20-16:40	Pengfei Zhang（张鹏飞） Shanxi University	One-dimensional atomic array coupled with optical nanofiber waveguides	Invited
16:40-17:00	Kun Liu（刘锟） Anhui Institute of Optics and Fine Mechanics, CAS	Applications of molecular absorption spectroscopy in high precision greenhouse gas measurement and fast diagnosis of combustion	Invited
17:00-17:20	Ping Lu（鲁平） Huazhong University of Science and Technology	Photoacoustic recognition and broad spectrum detection technology	Invited
17:20-17:40	Daping Luo（罗大平） East China Normal University	Frequency comb technology and dual-comb spectroscopy	Invited
19:00-21:00	Dinner		

Session Chairs

Yihua Hu —— National University of Defense Technology

Dengxin Hua —— Xi'an University of Technology

Ruifeng Kan —— Hefei Institutes of Physical Science, CAS

Baojun Li —— Sun Yat-sen University

Session Committee

Feng Chen
Shandong University

Nan Chi
Fudan University

Weiwei Cai
Shanghai Jiao Tong University

Lei Dong
Shanxi University

Yongkang Dong
Harbin Institute of Technology

Chen Ge
Institute of Physics, CAS

Lianbo Guo
Huazhong University of Science and Technology

Long Jin
Jinan University

Cheng Liu
University of Science and Technology of China

Xiaoqiang Lu
Fuzhou University

Zenghui Wang
University of Electronic Science and Technology of China

Zhe Wang
Tsinghua University

Shumin Xiao
Harbin Institute of Technology

Jun Yang
Guangdong University of Technology

Jan 26, 2024

Session9： 太赫兹科学与技术/Terahertz Science and Technology

Time	Speaker/Affiliation	Title	Type
	Chairs：Juncheng Cao（曹俊诚）Shanghai Institute of Microsystem and Information Technology Caihong Zhang（张彩虹）Nanjing University		
13:30-14:00	**Yihua Hu（胡以华）** National University of Defense Technology	Dynamic super-resolution remote laser Imaging	Keynote
14:00-14:20	**Kaixue Ma（马凯学）** Tianjin University	Investigation of channel parasitic effect of CMOS transistor for high responsivity 2.58 THz detector array with patch antennas in chip	Invited
14:20-14:40	**Min Hu（胡旻）** University of Electronic Science and Technology of China	Mechanism of terahertz near field microscopy and its applications	Invited
14:40-15:00	**Ziran Zhao（赵自然）** Tsinghua University	Time-resolved spectroscopy of long-wavelength photons	Invited
15:00-15:20	**Huabin Wang（王化斌）** Chongqing Institute of Green and Intelligent Technology，CAS	Terahertz near-field bio-detection techniques	Invited
15:20-15:30	**Yunyun Ji** Nankai University	Terahertz chiral and beam manipulation devices for liquid crystal integrated metasurfaces	oral
15:30-16:00	**Tea Break**		
	Chairs：Kaixue Ma（马凯学）Tianjin University Min Hu（胡旻）University of Electronic Science and Technology of China		
16:00-16:20	**Weiwei Liu（刘伟伟）** Nankai University	Fast and broadband THz detector working at room temperature based on micro-structured material	Invited
16:20-16:40	**Jianing Chen（陈佳宁）** Institute of Physics, CAS	Probing transient plasmons in semiconductors	Invited
16:40-17:00	**Caihong Zhang（张彩虹）** Nanjing University	High resolution terahertz spectrum and its application on imaging and sensing	Invited
17:00-17:20	**Huanjun Chen（陈焕君）** Sun Yat-sen University	Polaritonic 2D crystals in the terahertz and mid-infrared regimes	Invited
19:00-21:00	**Dinner**		

Jan 27, 2024

Session9： 太赫兹科学与技术/Terahertz Science and Technology

Time	Speaker/Affiliation	Titile	Type
	Chairs：Jian Chen（陈健）Nanjing University Jingbo Wu（吴敬波）Nanjing University		
09:00-09:20	**Yutong Li（李玉同）** Institute of Physics, CAS	Intense laser-produced terahertz radiation and applications	Invited
09:20-09:40	**Jianqiang Gu（谷建强）** Tianjin University	Terahertz metasurface design based on transfer learning and complex network	Invited
09:40-10:00	**Lin Wang（王林）** Shanghai Institute of Technical Physics, CAS	Investigation of non-equilibrium terahertz detection in low-dimensional materials	Invited
10:00-10:20	**Shaoqing Du（杜少卿）** Shanghai Institute of Microsystem and Information Technology, CAS	Sensing ultrafast terahertz dynamics of single molecules in sub-nm gap electrodes	Invited
10:20-10:30	**Xiaokai Pan** Shanghai Institute of Technical Physics, CAS	Multi-mechanism terahertz photoelectric detection based on two-dimensional quantum materials	Oral
10:30-10:50	**Tea Break**		
	Chairs：Yutong Li（李玉同）Institute of Physics, CAS Jianqiang Gu（谷建强）Tianjin University		
10:50-11:10	**Yiming Zhu（朱亦鸣）** University of Shanghai for Science and Technology	THz s-SNOM technique and its study on probing polaritons	Invited
11:10-11:30	**Kai Zhang（张凯）** Suzhou Institute of Nano-Tech and Nano-Bionics, CAS	2D materials integrated room temperature THz detector	Invited
11:30-11:50	**Jingbo Wu（吴敬波）** Nanjing University	Terahertz time-varying metasurface for linear frequency conversion	Invited
11:50-12:10	**Zheng Wang** University of Electronic Science and Technology of China	An 83.2 Gbit/s SISO wireless communication system utilizing polarization and frequency division multiplexing	Invited

12:10-14:00	Lunch		
	Chairs：Lianshan Yan（闫连山）Southwest Jiaotong University Xuecou Tu（涂学凑）Nanjing University		
14:00-14:20	Yan Zhang（张岩） Capital Normal University	Terahertz metasruface for mathematic operation	Invited
14:20-14:40	Junqi Liu（刘俊岐） Institute of Semiconductors, CAS	Ultrahigh-speed quantum cascade lasers by semiconductor integration	Invited
14:40-15:00	Tianwu Wang（王天武） Aerospace Information Research Institute, CAS	High spatial and temporal THz spectroscopy for 2D materials	Invited
15:00-15:20	Lan Wang（王兰） University of Electronic Science and Technology of China	High-order direct-modulation terahertz communication with a wideband time-coding meta-chip modulator	Invited
15:20-15:40	Runfeng Su（苏润丰） Nanjing University	Development of kinetic inductance detectors for terahertz and very long wave infrared detection	Invited
15:40-16:00	Tea Break		
	Chairs：Yiming Zhu（朱亦鸣）University of Shanghai for Science and Technology Shaoqing Du（杜少卿）Shanghai Institute of Microsystem and Information Technology, CAS		
16:00-16:20	Hua Li（黎华） Shanghai Institute of Microsystem and Information Technology, CAS	Chip-scale terahertz semiconductor laser frequency combs	Invited
16:20-16:40	Liangliang Zhang（张亮亮） Capital Normal University	Water-based coherent detection of terahertz wave	Invited
16:40-17:00	Xuecou Tu（涂学凑） Nanjing University	Terahertz detectors with integrated micro/nano functional structures	Invited
17:00-17:20	Baile Chen（陈佰乐） ShanghaiTech University	Ultrafast III-V photodetectors: from near-infrared to mid-infrared	Invited
17:20-17:40	Fei Fan（范飞） Nankai University	Terahertz magneto-optical metasurface for nonreciprocal beam steering	Invited
19:00-21:00	Dinner		

Jan 28, 2024

Session9： 太赫兹科学与技术/Terahertz Science and Technology

Time	Speaker/Affiliation	Title	Type
	Chairs：Guozhong Zhao（赵国忠）Capital Normal University Lei Hou（侯磊）Xi'an University of Technology		
09:00-09:20	Jingbo Qi（齐静波） University of Electronic Science and Technology of China	Ultrafast manipulation of collective modes via chiral fermions in a charge density wave Weyl semimetal	Invited
09:20-09:40	Wenxin Liu（刘文鑫） Aerospace Information Research Institute	Design and developments of terahertz vacuum electronic devices in AIRCAS	Invited
09:40-10:00	Xueqian Zhang（张学迁） Tianjin University	Simultaneous terahertz generation and manipulation enabled by nonlinear nanophotonics	Invited
10:00-10:20	Dongwen Zhang（张栋文） National University of Defense Technology	Modulated near-bandgap harmonics from bulk Mgo by strong terahertz field	Invited
10:20-10:30	Ruoxi Wu（吴若曦） Capital Normal University	Research on the modulation of the terahertz beam distribution generated by laser-induced air plasma	Oral
10:30-10:50	Tea Break		
	Chairs：Wenxin Liu（刘文鑫）Aerospace Information Research Institute Chang Wang（王长）Shanghai Institute of Microsystem and Information Technology, CAS		
10:50-11:10	Guozhong Zhao（赵国忠） Capital Normal University	Research progress on biochemical sensing based on terahertz metasurfaces	Invited
11:10-11:30	Ya Zhang（张亚） Tokyo University of Agriculture and Technology	Novel uncooled bolometric THz detection through thermomechanical transduction	Invited
11:30-11:50	Feihu Wang（王飞虎） Southern University of Science and Technology	Ultrafast terahertz detection technology and its applications	Invited
11:50-12:10	Lei Hou（侯磊） Xi'an University of Technology	Highly sensitive, room-temperature terahertz quantum detector based on Rydberg atoms	Invited

12:10-14:00	**Lunch**		
	Chairs：Jingbo Qi（齐静波）University of Electronic Science and Technology of China Ya Zhang（张亚）Tokyo University of Agriculture and Technology		
14:00-14:20	**Gangyi Xu（徐刚毅）** Shanghai Institute of Technical Physics, CAS	**Continuous frequency tuning in terahertz micro-laser arrays**	**Invited**
14:20-14:40	**Xiaojun Xie（谢小军）** Southwest Jiaotong University	**mmWave/THz photonics heterogeneous integrated devices and chips**	**Invited**
14:40-15:00	**Chang Wang（王长）** Shanghai Institute of Microsystem and Information Technology	**Dynamic properties of semiconductor terahertz quantum cascade lasers and their applications**	**Invited**
15:00-15:20	**Jierong Cheng（程洁荣）** Nankai University	**THz beam scanning with controllable polarization and wavefront**	**Invited**
15:20-15:30	**Hao Chen** Aerospace Information Research Institute	**Highly accurate and efficient generalized terahertz time-domain spectroscopic ellipsometry**	**Oral**
15:30-16:00	**Tea Break**		
	Chairs：Gangyi Xu（徐刚毅）Shanghai Institute of Technical Physics, CAS Xiaojun Xie（谢小军）Southwest Jiaotong University		
16:00-16:20	**Yue Wang（王玥）** Xi'an University of Technology	**Modal coupling and topological characteristics in THz metasurfaces**	**Invited**
16:20-16:40	**Bo Zhang（张波）** Capital Normal University	**Multifunctional dual stimuli-triggered metadevice in terahertz regime**	**Invited**
16:40-17:00	**Yuping Yang（杨玉平）** Minzu University of China	**High-efficiency identification of hydration state and evolution for raffinose hydrates by terahertz spectroscopy and imaging**	**Invited**
17:00-17:20	**Liang Cheng（程亮）** University of Electronic Science and Technology of China	**THz emission study of topological semimetals**	**Invited**
17:20-17:40	**Yang Cao** Hebei University of Technology	**Versatile reconfigurable terahertz plasmonic circuits**	**Invited**
19:00-21:00	**Dinner**		

Session Chairs

Weili Zhang —— Oklahoma State University

Juncheng Cao —— Shanghai Institute of Microsystem and Information Technology, CAS

Jian Chen —— Nanjing University

Session Committee

Chao Chang
Peking University

Xiaoshuang Chen
Shanghai Institute of Technical Physics, CAS

Guangyou Fang
Aerospace Information Research Institute, CAS

Jiaguang Han
Guilin University of Electronic Technology

Biaobing Jin
Nanjing University

Weiwei Liu
Nankai University

Kaixue Ma
Tianjin University

Hua Li
Shanghai Institute of Microsystem and Information Technology, CAS

Lianshan Yan
Southwest Jiaotong University

Guozhong Zhao
Capital Normal University

Yaxin Zhang
University of Electronic Science and Technology of China

Yiming Zhu
University of Shanghai for Science and Technology

Jan 27, 2024

Session10 ： 生物医学光子学/Biomedical Photonics

Time	Speaker/Affiliation	Title	Type
	Chairs：Jie Tian（田捷）Beihang University Yan Peng（彭滟）University of Shanghai for Science and Technology		
09:00-09:30	Xianting Ding（丁显廷） Shanghai Jiao Tong University	Single cell proteomics analysis and clinical application	Invited
09:30-10:00	Feng Zhang（张峰） University of Shanghai for Science and Technology	Spatiotemporal omics of life energy: towards medicine of frequencies and terahertz drugs	Invited
10:00-10:30	Yong He（贺永） Zhejiang University	3D bioprinting: from organ model to organ printing	Invited
10:30-10:50	Tea Break		
	Chairs：Junle Qu（屈军乐）Shenzhen University Qinghua Jiang（蒋庆华）Harbin Institute of Technology		
10:50-11:15	Zhen Tian（田震） Tianjin University	Potential applications of terahertz photoacoustic in biomedical research	Invited
11:15-11:40	Chao Tian（田超） University of Science and Technology of China	High performance biomedical photoacoustic imaging	Invited
11:40-12:05	Zhenhui Zhang （张振辉） Sihua Yang（杨思华） South China Normal University	Polarization-photoacoustic tomography	Invited
12:05-14:00	Lunch		
	Chairs：Buhong Li（李步洪）Hainan University Qianchun Weng（翁钱春）Shanghai Institute of Technical Physics, CAS		
14:00-14:25	Tian Jiang（江天） National University of Defense Technology	Terahertz physics and device research based on metal metasurface	Invited
14:25-14:50	Fei Fan（范飞） Shengjiang Chang (常胜江) Nankai University	Chiral enantiomers of drugs recognized by terahertz polarization sensing on the asymmetric metasurface	Invited

14:50-15:15	Di Bao（鲍迪） Qiang Cheng（程强） Southeast University	Research on artificial surface plasmon sensor and its application	Invited
15:15-15:40	Ride Wang（王日德） Chao Chang（常超） National Innovation Institute of Defense Technology	Trace biomolecular sensor detection based on terahertz superstructure surface	Invited
15:40-15:50	Tea Break		
	Chairs：Wei Shi（施卫）Xi'an University of Technology Sihua Yang（杨思华）South China Normal University		
15:50-16:15	Fuhong Cai（蔡夫鸿） Buhong Li（李步洪） Hainan University	High throughput biological tissue spectral detection	Invited
16:15-16:40	MingKun Zhang（张明焜） Chongqing Institute of Green and Intelligent Technology, CAS	Terahertz spectroscopy detection and characteristic analysis of biological samples in aqueous solution	Invited
16:40-17:05	Shaoyang Wang（王劭阳） Buhong Li（李步洪） Hainan University	Modulation of cellular signaling and function by femtosecond laser	Invited
17:05-17:20	Jia Shi（石嘉） Tianjin Polytechnic University	Resin-based dielectric terahertz meta-devices and biomedical applications	Invited
19:00-21:00	Dinner		

Jan 28, 2024

Session10 ： 生物医学光子学/Biomedical Photonics

Time	Speaker/Affiliation	Title	Type
	Chairs：Jian Ye（叶坚）Shanghai Jiao Tong University Xiangping Li（李向平）Jinan University		
09:00-09:25	Yaning Li（李雅宁） Peng Xi（席鹏） Peking University	Open source, ultra-fast, dual-mode, self-polarization modulated structural light microscopic imaging	Invited

09:25-09:50	**Yueshu Feng（冯悦姝）** **Liwei Liu（刘丽炜）** Shenzhen University	**Single frame spatial light interferometric microscopy imaging**	**Invited**
09:50-10:25	**Weisong Zhao（赵唯淞）** Harbin Institute of Technology	**High-throughput super-resolution made easy**	**Invited**
10:30-10:50	**Tea Break**		
	Chairs：Liwei Liu（刘丽炜）Shenzhen University **Chao Tian（田超）University of Science and Technology of China**		
10:50-11:15	**Zhou Chen（陈舟）** Shanghai Jiao Tong University	**Applications and challenges of artificial intelligence in surface-enhanced Raman spectroscopy**	**Invited**
11:15-11:40	**Kangwen Yang（杨康文）** University of Shanghai for Science and Technology	**Synchronized fiber lasers for coherent Raman scattering imaging**	**Invited**
11:40-11:55	**Wuwei Ren（任无畏）** ShanghaiTech University	**Multi-parameter optical tomography system based on simple hardware design**	**Invited**
12:00-14:00	**Lunch**		

Session Chairs

Peng Xi —— Peking University

Junle Qu —— Shenzhen University

Buhong Li —— Hainan University

Jie Tian —— Beihang University

Yan Peng —— University of Shanghai for Science and Technology

Session Committee

Shengjiang Chang
Nankai University

Qiang Cheng
Southeast University

Yong He
Zhejiang University

Qinghua Jiang
Harbin Institute of Technology

Tian Jiang
National University of Defense Technology

Liwei Liu
Shenzhen University

Xiangping Li
Jinan University

Wei Shi
Xi'an University of Technology

Chao Tian
University of Science and Technology of China

Zhen Tian
Tianjin University

Qianchun Weng
Shanghai Institute of Technical Physics, CAS

Jian Ye
Shanghai Jiao Tong University

Sihua Yang
South China Normal University

Shaoqun Zeng
Huazhong University of Science and Technology

Jan 27, 2024

Session11： 光子探测与计算成像/Photon Detection and Computational Imaging

Time	Speaker/Affiliation	Title	Type
	Chair：Zhiliang Yuan（袁之良）Beijing Academy of Quantum Information Sciences		
09:00-09:20	**Yanli Shi（史衍丽）** Yunnan University	**High performance InP/InGaAs SPADs**	**Invited**
09:20-09:40	**Weitao Liu（刘伟涛）** National University of Defense Technology	**Imaging through harsh environment based on computational aberration cancellation**	**Invited**
09:40-10:00	**Guangwei Deng（邓光伟）** University of Electronic Science and Technology of China	**Detecting acoustic quantum states based on single photon detector**	**Invited**
10:00-10:15	**Luchuan Liu（刘陆川）** University of Science and Technology of China	**Super-resolution imaging based on active optical intensity interferometry**	**Oral**
10:15-10:30	**Miao Wu** Nanjing University of Science and Technology	**Enhancing the signal-to-noise ratio for LiDAR with photon-number-resolving detection**	**Oral**
10:30-10:50	**Tea Break**		
	Chair：Yanli Shi（史衍丽）Yunnan University		
10:50-11:10	**Zhiliang Yuan（袁之良）** Beijing Academy of Quantum Information Sciences	**What is Incoherent Scattering?**	**Invited**
11:10-11:30	**Feihu Xu（徐飞虎）** University of Science and Technology of China	**Long-distance single-photon LiDAR**	**Invited**
11:30-11:45	**Yanwei Chen（陈炎炜）** University of Science and Technology of China	**113 km absolute ranging with nanometer precision**	**Oral**
11:45-12:00	**Zhongtao Cheng（成中涛）** Sichuan University	**Manipulating optical scattering with wavefront shaping techniques**	**Oral**
12:00-14:00	**Lunch**		

	Chair：Feihu Xu（徐飞虎）University of Science and Technology of China		
14:00-14:20	**Kun Huang（黄坤）** East China Normal University	Mid-infrared upconversion detection and imaging	Invited
14:20-14:40	**Mingjie Sun（孙鸣捷）** Beihang University	Advances in single-pixel imaging and single-photon imaging	Invited
14:40-15:00	**Ruifang Dong（董瑞芳）** National Time Service Center, CAS	Nonlocality of energy-time entangled light source and its application in quantum information technology	Invited
15:00-15:15	**Yanqiang Guo（郭龑强）** Taiyuan University of Technology	Photon statistics determination using single-photon counting and deep-learning homodyne detection	Oral
15:15-15:30	**Jinjian Han（韩金剑）** University of Science and Technology of China	Dual-comb spectroscopy over 100 km open-air path	Oral
15:30-15:50	Tea Break		
15:50-17:30	Free Discussion		
19:00-21:00	Dinner		

Session Chairs

Liantuan Xiao —— Taiyuan University of Technology

Qiang Zhang —— University of Science and Technology of China

Baosen Shi —— University of Science and Technology of China

Session Committee

Liangcai Cao
Tsinghua University

Xun Cao
Nanjing University

Qun Hao
Changchun University of Science and Technology

Kun Huang
East China Normal University

Shensheng Han
Shanghai Institute of Optics and Fine Mechanics, CAS

Xiaojun Jia
Shanxi University

Weitao Liu
National University of Defense Technology

Xiaopeng Shao
Xidian University

Yanli Shi
Yunnan University

Kai Wei
Institute of Optoelectronic Technology, CAS

Feihu Xu
University of Science and Technology of China

Lixing You
Shanghai Institute of Microsystems, CAS

Zhiliang Yuan
Beijing Academy of Quantum Information Sciences

Guihua Zeng
Shanghai Jiao Tong University

Yuan Zhao
Harbin Institute of Technology

Jan 27, 2024

Session12： 红外光子学与器件/Infrared Photonics and Devices

Time	Speaker/Affiliation	Title	Type
	Chair：Wei Wei（韦玮）Chongqing University		
09:00-09:20	**Qiang Li（李强）** Zhejiang university	Control over thermal radiation and its applications	Invited
09:20-09:40	**Xiaopeng Hao（郝小鹏）** National Institute of Metrology	Research progress of hyperspectral radiance temperature standard of infrared remote sensing	Invited
09:40-10:00	**Li Shen（沈力）** Huazhong University of Science and Technology	Group IV integrated photonics for mid-infrared applications	Invited
10:00-10:20	**Yuanlin Zheng（郑远林）** Shanghai Jiao Tong University	Nonlinear frequency conversion in lithium-niobate-on-insulator micro-waveguides	Invited
10:20-10:35	**Quanyong Lu（陆全勇）** Beijing Academy of Quantum Information Sciences	Recent development of mid-IR quantum cascade laser and frequency comb	Oral
10:35-10:50	Tea Break		
	Chair：Qiang Li（李强）Zhejiang university		
10:50-11:10	**Wei Wei（韦玮）** Chongqing University	Mid-infrared free-space optical modulator based on tunable surface plasmons	Invited
11:10-11:30	**Hui Zhou（周慧）** Shanghai Institute of Microsystem and Information Technology, CAS	Mid-infrared NbN-based superconducting nanowire single photon detectors	Invited
11:30-11:50	**Houkun Liang（梁厚昆）** Sichuan University	Highly efficient octave-spanning long-wavelength infrared generation in a $\chi^{(2)}$ waveguide	Invited
11:50-12:05	**Yu Chen（陈昱）** East China Normal University	Mid-infrared single-photon spectroscopy based on temporal-spectral quantum correlation	Oral
12:05-14:00	Lunch		

	Chair：Yuanlin Zheng（郑远林）Shanghai Jiao Tong University		
14:00-14:20	Jinwei Zhang（张金伟） Huazhong University of Science and Technology	100 W high power femtosecond thin disk oscillator	Invited
14:20-14:40	Qingqing Cheng（程庆庆） University of Shanghai for Science and Technology	Engineering complex vectorial light field in leaky-wave metasurfaces: harnessing structural parameter-independent detour and geometric phases	Invited
14:40-15:00	Wen Chen（陈文） East China Normal University	A molecular optomechanical nanocavity platform for continuous-wave mid-infrared to visible frequency upconversion	Invited
15:30-15:50	Tea Break		
15:50-17:30	Free Discussion		
19:00-21:00	Dinner		

Session Chairs

Wei Lu —— Shanghai Institute of Technical Physics

Qian Chen —— North University of China

Zhichuan Niu —— Institute of Semiconductors, CAS

Session Committee

Jingmin Dai
Harbin Institute of Technology

Weida Hu
Shanghai Institute of Technical Physics

Zhiming Huang
Shanghai Institute of Technical Physics

Fengqi Liu
Institute of Semiconductors, CAS

Hong Liu
Shandong University

Haizhi Song
Southwest Institute of Technical Physics

Pengfei Wang
Harbin Engineering University

Songlin Yu
China Electronics Technology Group Corporation eleventh Research Institute

Long Zhang
Shanghai Institute of Optics and Fine Mechanics, CAS

Jan 27, 2024

Session13： 光场调控及应用/Light Field Manipulation and Applications

Time	Speaker/Affiliation	Title	Type
	Chair：Pei Zhang（张沛）Xi'an Jiaotong University		
09:00-09:20	Gang Chen（陈刚） Chongqing University	Super-resolution imaging based on new types of meta-lenses	Invited
09:20-09:40	Xinzhong Li（李新忠） Henan University of Science and Technology	Multidimensional particles manipulation via structured light	Invited
09:40-10:00	Xiaolong Zhu（朱晓龙） East China Normal University	Resonant laser printing of large-area optical metasurfaces	Invited
10:00-10:15	Xiaoyang Duan Beijing Institute of Technology	Valley-addressable monolayer lasing through Berry phase photonic cavities	Oral
10:15-10:30	Chaoliang Ding（丁超亮） Tianjin University of Technology	Generation and propagation of spatiotemporal coherency vortices	Oral
10:30-10:50	Tea Break		
	Chair：Lingling Huang（黄玲玲）Beijing Institute of Technology		
10:50-11:10	Pei Zhang（张沛） Xi'an Jiaotong University	Vortex light manipulation and its application in high-dimensional quantum information	Invited
11:10-11:30	Dangyuan Lei（雷党愿） City University of Hong Kong	Nonlinear plasmonic nanocavities for single-molecule quantum sensing	Invited
11:30-11:45	Yuancheng Fan（樊元成） Northwestern Polytechnical University	Silicon metasurface based active control of terahertz wave	Oral
11:45-12:00	Hao Zhang（张浩） Henan University of Science and Technology	Real-time information recovery of random obstructed partially coherent vortex beam	Oral
12:00-14:00	Lunch		

	Chair：Douguo Zhang（张斗国）University of Science and Technology of China		
14:00-14:20	**Lingling Huang（黄玲玲）** Beijing Institute of Technology	**Metasurface for optical computing**	**Invited**
14:20-14:40	**Shixiang Xu（徐世祥）** Shenzhen University	**Direct space–time manipulation mechanism for spatio–temporal coupling of ultrafast light fields**	**Invited**
14:40-15:00	**Wei Hu（胡伟）** Nanjing University	**Hierarchical liquid crystal microstructures for multidegree optical field manipulation**	**Invited**
15:00-15:15	**Zepeng Zhuang（庄泽鹏）** Sun Yat–sen University	**Manipulation of radiation asymmetry in bilayer metagratings by pseudo–polarization vortex**	**Oral**
15:15-15:30	**Zhenjun Yang（杨振军）** Hebei Normal University	**Transmission dynamics of beam arrays with orbital angular momentum in optical nonlinear media with nonlocal characteristics**	**Oral**
15:30-15:50	**Tea Break**		
	Chair：Shixiang Xu（徐世祥）Shenzhen University		
15:50-16:10	**Douguo Zhang（张斗国）** University of Science and Technology of China	**Highly–sensitive label–free optical imaging enabled by illumination–field manipulation**	**Invited**
16:10-16:30	**Jianjun Chen（陈建军）** Beijing Normal University	**Field manipulation of on–chip micro–nano light sources**	**Invited**
16:30-16:50	**Wenjie Wan（万文杰）** Shanghai Jiao Tong University	**Nonlinear thermal emission**	**Invited**
16:50-17:10	**Yanqing Li（李艳青）** East China Normal University	**Light manipulation in perovskite light emitting diodes**	**Invited**
17:10-17:30	**Peng Li（李鹏）** Northwestern Polytechnical University	**Propagation manipulation and application of vector light fields**	**Invited**
19:00-21:00	**Dinner**		

Session Chairs

Jianlin Zhao —— Northwestern Polytechnical University

Yangjian Cai —— Shandong Normal University

Qiwen Zhan —— University of Shanghai for Science and Technology

Shuqi Chen —— Nankai University

Session Committee

Gang Chen
Chongqing University

Xianfeng Chen
Shanghai Jiao Tong University

Lixiang Chen
Xiamen University

Jianwen Dong
Sun Yat-sen University

Shenhe Fu
Jinan University

Wei Hu
Nanjing University

Lingling Huang
Beijing Institute of Technology

Peng Li
Northwestern Polytechnical University

Xinzhong Li
Henan University of Science and Technology

Bo Liu
Nanjing University of Information Science and Technology

Mengxin Ren
Nankai University

Shuangchun Wen
Hunan University

Shuming Wang
Nanjing University

Xiaomu Wang
Nanjing University

Wenjie Wan
Shanghai Jiao Tong University

Ting Xu
Nanjing University

Yuanjie Yang
University of Electronic Science and Technology of China

Pei Zhang
Xi 'an Jiaotong University

Douguo Zhang
University of Science and Technology of China

Yuanlin Zheng
Shanghai Jiao Tong University

Jan 27, 2024

Session14： 集成光子与光子计算/Integrated Photonics and Photonic Computing

Time	Speaker/Affiliation	Title	Type
	Chair：Li Pei（裴丽）Beijing Jiaotong University		
09:00-09:30	Yunfeng Xiao（肖云峰） Peking University	Single-particle vibrational spectroscopy with optical microresonator	Invited
09:30-10:00	Zhaohui Li（李朝晖） Sun Yat-Sen University	Integrated photonics based on thin-film lithium niobate-chalcogenide hybrid waveguides	Invited
10:00-10:30	Daoxin Dai（戴道锌） Zhejiang University	Silicon photonic spectrometers	Invited
10:30-10:50	Tea Break		
	Chair：Yunfeng Xiao（肖云峰）Peking University		
10:50-11:20	Li Pei（裴丽） Beijing Jiaotong University	Key technologies of information detection and procession	Invited
11:20-11:50	Genxiang Chen（陈根祥） Minzu University of China	Modeling and simulation of semiconductor optoelectronic devices	Invited
11:50-12:20	Yong Liu（刘永） University of Electronic Science and Technology of China	Chip-scale optical pulse generator based on thin-film lithium niobate	Invited
12:20-14:00	Lunch		
	Chair：Genxiang Chen（陈根祥） Minzu University of China		
14:00-14:30	Xingjun Wang（王兴军） Peking University	Silicon photonic integrated chips	Invited
14:30-15:00	Shuhui Bo（薄淑晖） Minzu University of China	Research on electro-optic polymer materials and high-speed modulators	Invited
15:00-15:30	Jinping He（何晋平） Nanjing Institute of Astronomical Optics & Technology, CAS	Integrated optics for astronomy	Invited
15:30-15:50	Tea Break		
	Chair：Daoxin Dai（戴道锌）Zhejiang University		
15:50-16:20	Jianji Dong（董建绩） Huazhong University of Science and Technology	Integrated training and computing optical neural network chip	Invited
16:20-16:50	Jiaxiang Zhang（张加祥） Shanghai Institute of Microsystem and Information Technology, CAS	Hybrid integrated optical quantum devices and chips	Invited
16:50-17:20	Ruijin Hong（洪瑞金） University of Shanghai for Science and Technology	Fabrication and application of integrated optical components based on transparent conductive thin films	Invited
19:00-21:00	Dinner		

Jan 28, 2024

Session14： 集成光子与光子计算/Integrated Photonics and Photonic Computing

Time	Speaker/Affiliation	Title	Type
	Chair：Linjie Zhou（周林杰）Shanghai Jiao Tong University		
09:00-09:30	Junqiu Liu（刘骏秋） Southern University of Science and Technology	Hybrid ultralow-loss silicon nitride integrated photonics	Invited
09:30-10:00	Jiangbing Du（杜江兵） Shanghai Jiao Tong University	Photonic integrated interposer and devices for copackaged optical interconnects	Invited
10:00-10:30	Jie Chen（陈杰） Shanghai Institute of Optics and Fine Mechanics, CAS	Fabrication of silicon-based magneto-optic thin films by ion slicing of YIG ceramic and its on chip application prospect	Invited

10:30-10:50	**Tea Break**		
	Chair：Jianji Dong（董建绩）Huazhong University of Science and Technology		
10:50-11:20	**Linjie Zhou（周林杰）** Shanghai Jiao Tong University	**Silicon hybrid integrated external cavity laser**	**Invited**
11:20-11:50	**Ping Jiang (蒋平)** United Microelectronics Center	**The research of optical phased array based silicon photonics technology**	**Invited**
11:50-12:20	**Jijun Feng（冯吉军）** University of Shanghai for Science and Technology	**Silicon optical phased array chips based beam shaping applications**	**Invited**
12:20-14:00	**Lunch**		
	Chair：Jijun Feng（冯吉军）University of Shanghai for Science and Technology		
14:00-14:30	**Xihua Zou（邹喜华）** Southwest Jiaotong University	**Multi-chirp-rate & multi-band converged inverse synthetic aperture radar using photonic integrated circuit**	**Invited**
14:30-15:00	**Jiajing He（何佳晶）** Shanghai Institute of Optics and Fine Mechanics, CAS	**Room temperature silicon light source and amplifier at communication band by deep cooling**	**Invited**
15:00-15:15	**Zhan Yang（杨展）** Shanghai Institute of Optics and Fine Mechanics, CAS	**All-optical integrated nonlinear activator for optical computing**	**Oral**
15:15-15:30	**Bing Han（韩冰）** AVIC Changcheng Institute of Metrology & Measurement	**Introduction to Journal of Metrology & Measurement Technology**	**Oral**
15:30-15:50	**Tea Break**		
15:50-17:30	**Free Discussion**		
19:00-21:00	**Dinner**		

Session Chairs

Xinliang Zhang —— Xidian University

Yunfeng Xiao —— Peking University

Ming Li —— Institute of Semiconductors, CAS

Zhaohui Li —— Sun Yat-sen University

Session Committee

Genxiang Chen
Minzu University of China

Daoxin Dai
Zhejiang University

Jinping He
Nanjing Institute of Astronomical Optics Technology, CAS

Li Pei
Beijing Jiaotong University

Xifeng Ren
University of Science and Technology of China

Jun Wang
Shanghai Institute of Optics and Fine Mechanics, CAS

Xingjun Wang
Peking University

Xiangjun Xin
Beijing Institute of Technology

Fengping Yan
Beijing Jiaotong University

Linjie Zhou
Shanghai Jiao Tong University

Weiwen Zou
Shanghai Jiao Tong University

Xihua Zou
Southwest Jiaotong University

Jan 26, 2024

Session15 ： 拓扑光子学与非厄米光学/Topological Photonics and Non-Hermitian Optics

Time	Speaker/Affiliation	Title	Type
	Chair：Zhigang Chen（陈志刚） Nankai University		
13:30-14:00	**Costantino De Angelis** University of Brescia, Italy	All-optical computing with nonlinear photonic metasurfaces	Invited
14:00-14:30	**Ling Lu（陆凌）** Institute of Physics, CAS	Topological cavity surface emitting lasers	Invited
14:30-15:00	**Hrvoje Buljan** University of Zagreb, Croatia	Topological phenomena of sub-symmetry protection, disclination vortex waveguide, and charge quantization	Invited
15:00-15:30	**Luqi Yuan（袁璐琦）** Shanghai Jiao Tong University	Studies of topological and non-Hermitian photonics with synthetic frequency dimension	Invited
15:30-15:50	**Tea Break**		
	Chair：Ling Lu（陆凌）Institute of Physics, CAS		
15:50-16:20	**Giuseppe Leo** Université de Paris, France	Nonlinear generation of optical beams with orbital angular momentum on thin films and metasurfaces	Invited
16:20-16:50	**Nikos Efremidis** University of Crete Greece	Thermodynamics of multimoded optical systems	Invited
16:50-17:20	**Cuicui Lu（路翠翠）** Beijing Institute of Technology	Topological nanophotonic multi-wavelength devices in Hermitian and non-Hermitian systems	Invited
19:00-21:00	**Dinner**		

Jan 27, 2024

Session15 ： 拓扑光子学与非厄米光学/Topological Photonics and Non-Hermitian Optics

Time	Speaker/Affiliation	Title	Type
	Chair：Hrvoje Buljan University of Zagreb		
09:00-09:30	**Eugenio Delre** University of Rome, Italy	Exploring high-dimensional topological defects in near-transition ferroelectrics	Invited
09:30-10:00	**Jianhua Jiang（蒋建华）** Soochow University	Topological Wannier cycles	Invited
10:00-10:30	**Xiaodong Chen（陈晓东）** Sun Yat-sen University	Topological photonic crystals in synthetic translation dimensions	Invited
10:30-10:40	**Tea Break**		
	Chair：Tao Li（李涛）Nanjing University		
10:40-11:10	**Renmin Ma（马仁敏）** Peking University	Reconfigurable moiré acute nanolaser arrays with phase synchronization	Invited
11:10-11:40	**Sang Soon Oh** Cardiff University, UK	Delocalising topological edge/corner modes in 2D array of lasers using an imaginary gauge field	Invited
11:40-12:10	**Yiming Pan（潘义明）** Shanghai University of Science and Technology	Constructing Berry-Maxwell's equations with Lorentz invariance and Gauss's law of Weyl monopoles	Invited
12:10-14:00	**Lunch**		
	Chair：Jianhua Jiang（蒋建华）Soochow University		
14:00-14:30	**Shiqi Xia（夏士齐）** Nankai University	Realization of vortex ladder via sisyphus pumping in photonic graphene	Invited
14:30-15:00	**Meng Xiao（肖孟）** Wuhan University	Nonlinearity enabled higher-order exceptional point	Invited
15:00-15:30	**Konstantinos Makris** University of Crete, Greece	Power eigenchannels and phase conjugation in non-Hermitian multimode systems	Invited
15:30-15:50	**Tea Break**		

	Chair：Eugenio Delre, University of Rome, Italy		
15:50-16:20	**Yongchun Liu（刘永椿）** Tsinghua University	**Non-Hermitian physics based on thermal atom ensembles**	**Invited**
16:20-16:50	**Tao Li（李涛）** Nanjing University	**Non-Hermitian modulation for topological photonics states in waveguides**	**Invited**
16:50-17:20	**Guojing Tang（汤国靖）** Sun Yat-sen University	**Broadband and fabrication-tolerant topological 3-dB coupler**	**Invited**
17:20-17:50	**Chenzi Guo（郭宸孜）** Director, eLight; Editor, Light: Science & Applications	**LSA, eLight and LAM: contribute to the wellbeing of optics community**	**Invited**
19:00-21:00	**Dinner**		

Session Chairs

Zhigang Chen —— Nankai University

Jian Zi —— Fudan University

Xiaocong Yuan —— Zhejiang Laboratory

Ling Lu —— Institute of Physics, CAS

Session Committee

Xiaodong Chen
Sun Yat-sen University

Lujun Huang
East China Normal University

Jianhua Jiang
Soochow University

Cuicui Lu
Beijing Institute of Technology

Hui Liu
Nanjing University

Lin Li
East China Normal University

Lei Liao
Hunan University

Yiming Pan
Shanghai University of Science and Technology

Ke Xu
Suzhou Institute of Nanotechnology and Nanobionics, CAS

Luqi Yuan
Shanghai Jiao Tong University

Jan 25, 2024

2024年华东师范大学“超快科学与量子感知”优秀大学生冬令营活动日程安排

Time	Speaker	Title
15:00-15:10	**开营仪式Welcome and Opening Remarks**	
15:10-15:25	**海南院领导** East China Normal University	**华东师范大学海南研究院介绍** **Hainan Institute of East China Normal University Introduction**
15:25-15:40	**Mengyun Hu（胡梦云）** East China Normal University	**精密光谱科学与技术国家重点实验室介绍** **Laboratory Introduction（LPS）**
15:40-15:50	**合影留念Photograph**	
	休息Break	
16:00-16:30	**Haifeng Pan（潘海峰）** East China Normal University	**激光实验安全与防护** **Laser Safety**
16:30-17:00	**Liping Shi（石理平）** Xidian University Hangzhou Institute of Technology	**飞秒激光无油墨彩色打印原理与应用** **Mechanisms and applications of Femtosecond laser inkless printing**
	休息Break	
17:10-17:30	**Kangwen Yang（杨康文）** University of Shanghai for Science and Technology	**非线性光谱成像及其医学应用** **Nonlinear spectroscopy imaging and its biomedical application**
17:30-17:50	**Yan Liang（梁焰）** University of Shanghai for Science and Technology	**高速单光子探测及其应用** **High-speed single-photondetection and application**
	晚餐Dinner	
19:00-19:20	**Junsong Peng（彭俊松）** East China Normal University	**超快光纤激光器及其智能控制** **Ultrafast fibre lasers and their intelligent control**
19:20-19:40	**Fangfang Li（李芳芳）** East China Normal University	**高稳定光纤飞秒激光技术及飞秒等离子光栅的应用** **Applications of Highly Stable Fiber Femtosecond Laser Technology and Femtosecond Plasma Grating**
19:40-20:00	**营员与导师自由交流** **Free Discussion**	

Abstract

International Conference on Ultrafast Science
and Quantum Sensing (USQS)

Name: Andrius Baltuška
Organization: Vienna University of Technology

Biography:
Andrius Baltuška received the diploma in physics from Vilnius University, Lithuania, in 1993 and a Ph.D. degree in chemical physics from the University of Groningen, The Netherlands, in 2000. Since 2006 he is a full professor at the faculty of Electrical Engineering and Information Technology, Vienna University of Technology. His group (http://atto.photonik.tuwien.ac.at) works on the development of intense ultrafast laser and parametric amplifiers and applications of fully controlled optical pulses in ultrafast spectroscopy and high-field physics. He received a European Young Investigator Award (EURYI) from the European Science Foundation (2004), Ignaz L. Lieben Award from the Austrian Academy of Sciences (2006) and a Starting Grant (Consolidator) of the European Research Council (2011). In 2016 he was elected a corresponding member of the Austrian Academy of Sciences (ÖAW).

Title:
Nonlinear optics with femtosecond pulse bursts

Abstract:
Bursts of high-intensity ultrafast laser pulses enable many exciting applications which cannot be driven by traditional types of ultrafast lasers. On the one hand, isolated femtosecond pulses, boosted to high energies from conventional chirped-pulse amplifiers, are ideal for nonlinear-optical frequency conversion, but lack spectral selectivity unless a complex technique of spectral focusing is employed during the up- or down-conversion of the fundamental optical frequency. On the other hand, cw mode-locked sources at MHz-GHz repetition frequencies, which offer high spectral selectivity and enable frequency comb spectroscopies, cannot be amplified to mJ pulse energy levels due to excessive average power of the laser source as well as due to optical load on the spectroscopic targets. Fortunately, operation in the burst mode solves these problems by limiting the average power but allowing one to reach high single-pulse intensity levels that are suitable for many nonlinear applications, including time- and frequency-resolved nonlinear spectroscopy on gas and condensed phase. In addition, high spectral selectivity, essential for resonant nonlinear spectroscopies, becomes available in carefully engineered bursts, where wavelength tunability is obtained by a direct electronic phase control with no moving parts in the laser system.

The talk will present the technology of generating phase- and amplitude-controlled amplified pulse bursts, discuss the limits of energy scaling and solutions, demonstrate applications of burst-driving for parametric frequency conversion and present the blueprint for 3rd and higher-order resonant nonlinear spectroscopies.

Name: Hong Guo
Organization: Peking University

Biography:
Hong Guo (郭弘), Boya Distinguished Professor of Peking University. His research covers quantum sensing and devices such as optical pumped magnetometer (OPM), quantum key distribution (QKD) and quantum random number generations (QRNG), quantum frequency standards and their transfer via optical fiber links, and quantum open systems. In OPM and its applications in magnetic anomaly detections (MAD) and imaging in biomedical sciences, he realized the first OPM-based recording of brain in unshielded earth field environment, and the first movable unshielded magnetocardiography system. His OPM research also extends to many applications, encompassing participating as a joint member station in the Global Network of Optical Magnetometers for Exotic physics (GNOME), which is for the search of the dark matter/energy and other exotic physics beyond the standard model, and the applications in the studies of archaeology and other areas. In time-frequency related fields, he demonstrated a high-precision time-frequency transfer over thousands of kilometers in commercial optical fiber link with the ability to download multi-frequencies simultaneously in different nodes, and achieved femtosecond-level measurements of both time interval of electrical signals and optical fiber delays, which further develops precision measurement technologies. He also achieved the security proof of digital signal processing and the longest-distance transmission in commercial fiber link of continuous-variable QKD, which expands the application scenarios of quantum security.

Title:
Quantum technologies: from sensing to perception

Abstract:
In recent years, quantum technology has become a hotspot term in numerous related areas of science and technology, encompassing quantum supremacy, quantum revolution, etc. This talk explores key aspects of quantum technologies related to information perception and acquisition, the maintenance of the related information security, and information processing. Specifically, I will delve into quantum sensing and focus on magnetic anomaly detection using optically pumped magnetometers (OPM) in unshielded earth environments, and quantum precision measurement and focus on the secure transfer of time-frequency signals vis commercial optical fiber links. Moreover, I would like to mention some potential evolution of quantum technologies over the next decades -- the transition from fundamental quantum sensing technologies to more sophisticated quantum information perception (physics + mathematics, hardware + software, and AI-oriented) technologies.

Name: Oliver H. Heckl
Organization: University of Vienna

Biography:
Oliver H. Heckl is currently serving as an Assistant Professor at the Faculty of Physics at the University of Vienna. In 2007, he earned his diploma in physics from the University of Augsburg, Germany. His introduction to photonics occurred during a one-year student research project with Prof. Bachor at the Australian National University (ANU) in Canberra. In 2011, Heckl chose to further his academic pursuits by joining Prof. Keller's group at ETH Zürich in Switzerland, completing his PhD in laser. His thesis focused on peak power scaling with modelocked thin-disk lasers. In 2014, Oliver Heckl was awarded a Feodor Lynen research scholarship, leading him to join Prof. Jun Ye's group at JILA, CU Boulder, Colorado. During this period, his research interests expanded to include optical frequency combs, nonlinear optics, and molecular spectroscopy with frequency combs.

Since 2017, Oliver Heckl has been at the forefront, heading the Christian Doppler Laboratory for Mid-IR Spectroscopy and Semiconductor Optics at the University of Vienna. His current focus involves advancing frequency comb technology into the mid-IR spectral region, aiming for applications in trace-gas detection, precision spectroscopy, and molecular fingerprinting.

Title:
Crystalline supermirrors for infrared applications

Abstract:
High-performance supermirrors are employed in a variety of applications in optics and photonics: They are a key element for stable optical cavities, which are routinely used to narrow the linewidth of continuous-wave lasers, thereby creating optical references for frequency comb stabilization and precision spectroscopy. Furthermore, they are a vital component for optical interferometers, which enable scientific discovery in fields as seemingly unrelated as microcavity sensing and gravitational wave detection.

Especially at mid-infrared wavelengths, emerging applications in chemical sensing, discrete imaging, ultracold chemistry, and even fundamental physics will benefit immediately from high-performance mirrors. Therefore, the development of low-loss mirrors in this wavelength range is a long-standing goal. However, traditional techniques for the fabrication of high-reflectivity mirrors fail to match the performance readily accessible in the visible and near-infrared wavelength range.

In recent years, substrate-transferred monocrystalline supermirrors have emerged as a promising technology to overcome these limitations. Originally developed as a means to overcome the Brownian-noise limit in precision near-infrared interferometry, crystalline mirrors also exhibit extremely low absorption and scatter losses over their entire transparency window (0.87 µm to 10 µm). This enables supermirror-level reflectivity at mid-infrared wavelengths.

In this talk we will take a look at the key features and wide range of applications of these crystalline Bragg reflector mirrors. Building on this framework, I will also present our achievements in precision characterization and design improvements, including the recent demonstration of unprecedentedly high-reflectivity mirrors at 4.45 µm and a cavity finesse in excess of 400 000.

Name: Zhigang Chen
Organization: Nankai University

Biography:
Zhigang Chen is currently a specially-appointed Chair Professor at Nankai University, a Member of the National High-end Foreign Experts, and a Chief Scientist of the Key R&D Plan Projects of the Ministry of Science and Technology, China. His research interests include nonlinear optics, topological photonics, light-field manipulation and biophotonics. Dr. Chen is a Fellow of the Optical Society of America and a Fellow of the American Physical Society. He has served as an editor for several journals including Light Science & Applications, Optics Letters, Optics Express, Science Bulletin, and Advances in Physics X, and as a chair for numerous conferences and workshops including the Program/General Co-Chair for CLEO-Fundamental Science.

Title:
Nontrivial control of light

Abstract:
Recent advances in light-field manipulation and topological photonics have opened the door for exploring many intriguing fundamental phenomena and unconventional applications. In this talk, I will provide a brief overview of nontrivial control of light from the topological perspective. Then, I will discuss some examples of our recent work on the generation and control of orbital angular momentum beams, including robust vortex transport in both free space and topological structures. Furthermore, I will touch upon nonlinear control of topological states and topological lasers. To conclude, I will offer a brief outlook on the future of topological photonics, highlighting its position as an active and evolving field in the coming decade.

Name: Wentao Wang
Organization: Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences

Biography:
Wentao Wang is a professor of Shanghai Institute of Optics and Machinery, Chinese Academy of Sciences. His research interests include laser wakefield electron accelerator and compact radiation sources, with a preference for experimental physics. He and his colleagues have published more than 70 papers in Nature, Physical Review Letters and others.

Title:
Table-top ultrafast free-electron laser

Abstract:
X-ray free-electron lasers can generate ultrafast and coherent radiation at wavelengths down to the sub-ångström region, and have become indispensable tools for applications in structural biology and chemistry, among other disciplines. Several X-ray free-electron laser facilities are in operation; however, their requirement for large, high-cost, state-of-the-art radio-frequency accelerators has led to great interest in the development of compact and economical accelerators. Laser wakefield accelerators can sustain accelerating gradients more than three orders of magnitude higher than those of radio-frequency accelerators, and are regarded as an attractive option for driving compact X-ray free-electron lasers.

After ten years of efforts, we present an experimental demonstration of undulator radiation amplification in the exponential-gain regime by using electron beams based on a laser wakefield accelerator. The results constitute a proof-of-principle demonstration of free-electron lasing using a laser wakefield accelerator, and pave the way towards the development of compact X-ray free-electron lasers based on this technology with broad applications. In the future, we will further develop compact attosecond free-electron laser based on the characteristics of laser wakefield accelerators, providing powerful tools for the development of ultrafast science.

Name: Jian Wu
Organization: East China Normal University

Biography:
Prof. Jian Wu is a professor in physics of the State Key Laboratory of Precision Spectroscopy, East China Normal University (ECNU), China. His research focuses on the precision measurement and control of the ultrafast dynamics of molecules and nano-macro systems in ultrashort laser pulses.

Title:
Light-induced dynamics of molecules: from uni- to bi-molecules

Abstract:
Understanding the behavior of molecules when exposed to light is of paramount importance across various scientific disciplines, such as chemistry, physics, and biology. The ability to manipulate molecular dynamics using light fields holds significant potential for a wide array of applications, ranging from the development of new materials and structures to the design of more efficient chemical reactions. The laser-induced unimolecular dynamics, in which a single molecule undergoes optical response upon absorption of photons, are of particular interest due to their fundamental importance in understanding the behavior of individual molecules. Furthermore, the light-driven bimolecular reactions, in which two molecules interact with each other following the absorption of light, play a more crucial role in the molecular photochemical reactions by involving both the bond breaking and formation. In this talk, I will present our recent research progresses on the probing and controlling of light-induced ultrafast molecular dynamics: from unimolecule to bimolecule. By employing the waveform-tailored ultrashort laser pulses and electron-ion coincidence measurement technique, we explored the ultrafast electronic and nuclear dynamics of the molecules in the supersonic jet and the molecules inside superfluid helium nanodroplet. We also investigated the ultrafast dynamics of bimolecular reactions. Based on the approach starting from a van der Waals dimer molecule, which offers well-defined spatiotemporal starting point for time-resolved studies, we realize the real-time visualization and coherent control of bimolecular reaction dynamics using femtosecond pump-probe scheme and phase-controlled two-color scheme, respectively.

Name: Zhanshan Wang
Organization: Tongji University

Biography:
Zhanshan Wang, founder of the Institute of Precision Optical Engineering Technology, Tongji University. He is SPIE Fellow, Chinese Optical Society Fellow, and a special professor of Changjiang Scholars of the Ministry of Education, Leader of the National key Research and development technical expert group. He has published more than 200 SCI papers including Light and Optical Letters, and more than 100 authorized patents, one of them won the 2018 China Patent Gold Medal. He won the second prize of the National Technology Invention Award (ranking 1), the first prize of the Chinese Society of Instrumentation Technology Invention Award (ranking 1) in 2021, and the first prize of the Ministry of Education Technology Invention Award (ranking 1) in 2015.

Title:
Recent research progress of ultrafast laser coatings

Abstract:
Dispersive coating is the enabling technology of state-of-the-art ultrafast laser systems. This talk presents the research progress range from the multi-objective coatings design, coating materials, high-precision deposition to improve the performance of the dispersive mirrors. We deposit the nanolaminate with different ratio of Ta_2O_5 and TiO_2 to analyze the properties considering the refractive index, bandgap and nonlinear effect. Then we study the different monitoring technologies for dispersive mirrors in detail. Such a study helped overcome the challenges of unstable and inefficient preparation of dispersive mirrors, realizing the important application of GDD monitoring technology in the field of coating manufacturing and opening up new perspectives for high-precision thin film manufacturing. Finally, we develop an efficient multi-objective design method. Broadband negative dispersive mirrors have been designed that demonstrates notable improvements in performances of spectrum, group delay dispersion and electric field distribution, indicating the feasibility to attain mirrors with higher laser induced damage threshold.

Name: Zhongkun Hu
Organization: Huazhong University of Science and Technology

Biography:
Zhongkun Hu Professor of Physics at Huazhong University of Science & Technology. Research field on precision measurement and gravitational experiments. Determined the Newtonian gravitational constant G with a high-Q torsion pendulum and the swing time method, which was cited by CODATA-98/02/06/10 and named as HUST-99 and HUST-05. With an cold atom interferometer, achieved a short-term sensitivity of 2.2 micro-Gal in absolute gravity measurements, and tested the universality of free fall considering atoms' spin degree of freedom.

Title:
High precision measurement with atom interferometry

Abstract:
With the current state of physics, the question concerning the interaction between quantum theory and gravity is entirely open. Therefore it has excited a huge amount of experiments to test the foundational principles of general relativity (GR) on systems in non-classical states. The famous one is testing the validity of universality of free fall (UFF) which is one of the fundamental postulations of GR. In addition, the gravitational acceleration g, a key parameter of gravity, is time and location dependent. Terrestrial gravity measurements have been performed more than 200 years with different instruments. Cold atoms have obvious advantage as the probe for precision measurement, and are the ideal source for matter wave interferometry both in UFF test and gravity measurement. We have performed a series of precision atomic interferometry experiments on testing the UFF considering atoms' spin degree of freedom, and developed an atom gravimeter with the sensitivity of 2.2 μGal /$Hz^{1/2}$(1μGal=1×10^{-9}g).

Name: Zhiyi Wei
Organization: Institute of Physics, Chinese Academy of Sciences

Biography:
Zhiyi Wei obtained Ph.D in 1991 at Xi'an Institute of Optics and Precision Mechanics, China. He joined in the Institute of Physics, Chinese Academy of Sciences since 1997 and was prompted as professor in 1999. He has been devoting in ultrafast laser technology since 1984. Up to now, he published more than 400 peer review papers, reported more than 80 invited talks at international conferences. For his contributions, he won the National Science Fund for Outstanding Young Scholars in 2002, Hu Gangfu Physics Award in 2011. He and his team also won the second prize for National Technological Invention Award in the 2018. He is an Optica fellow and Chinese Optical Society (COS) fellow. Chinese Society of Optical Engineering fellow.

Title:
Advanced ultrafast lasers for ultrafast sciences

Abstract:
With remarkable progresses of ultrafast lasers, many frontier research were developed in last decades. In particular, the shortest pulse has come to attosecond regime, which opened the new world for explore the motion of electron. To generate cutting-edge isolated attosecond laser pulses, advanced femtosecond laser is necessary for interact with matter. In this talk, we will report the research works and new results on femsecond lasers technology, such as diode pumped mode-locking laser, femtosecond thin-disk laser and fiber laser etc. Not only laser pulses were compressed to few cycles and near 100W average power, available wavelength was also extended to MIR with OPO and OPA. By drive noble gases to generate high order harmonics wave, XUV with average power up to 1mW and isolated attosecond pulse with 87as duration were obtained. In view of the wide applications in ultrafast dynamics in condensed physics, chemistry, biology and material sciences, advanced diagnostic instruments such as eTOF, ARPES, PEEM, STM and COLTRIMS etc were also equipped. As new facility, it has been established as an advanced platform to supply scientists for study ultrafast dynamics the with temporal resolutions in the molecule and atomic scale.

Name: Shuangchen Ruan
Organization: Shenzhen Technology University

Biography:
Prof. Shuangchen Ruan currently serves as the president of Shenzhen Technology University and is the chief scientist for key research and development programs in China. He earned his Ph.D. from Tianjin University in 2004. From 1993 to 1994, Prof. Ruan was a senior visiting scholar at Imperial College London, focusing on research related to ultrafast lasers. In 1993, he played a pivotal role in pioneering the development of a 100-micrometer-thick Cr:LiSAF laser, achieving an early international breakthrough. Since 1989, he has made a series of innovation progresses on ultrafast thin disk lasers, mid-infrared fiber lasers, supercontinuum generation, fiber nonlinear characteristics, frequency conversion, and ultrafast optical devices. Up to now, he has published more than 300 peer-reviewed papers. He received the State Natural Science Award (third-class), the Guangdong Province Science and Technology Progress Award (first Class). He also received the Young Scientist Prize by CAS.

Title:
Kilowatt-class ultrafast thin disk laser

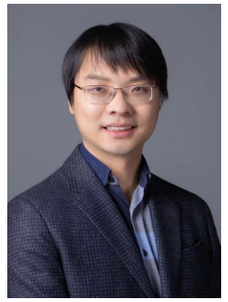
Abstract:
Thin-disk lasers have aroused wide attention about scientific and industrial application, owing to their high peak power, efficiency, and precise pulse characteristics. In optical parametric chirped-pulse amplification (OPCPA), for example, thin-disk lasers play a crucial role as the primary pump source due to their exceptional capabilities. Their ability to generate short-duration, high-energy pulses makes them ideal drivers for nonlinear optical crystals in the OPCPA system. The outstanding peak power and energy density they offer are vital for the efficient laser pulse amplification, which are utilized for generating intense extreme ultraviolet (XUV) and attosecond(as) pulses by high-order harmonic generation. In the realm of industrial application, high-power, efficient and stable thin-disk lasers have become an important tool for the manufacturing new energy vehicles and semiconductor chips. Based on the home-made disk crystals and a 48-pass pump module, we achieved a regenerative amplifier producing 150 W at a repetition rate of 500 kHz, with 7 ps pulse output and a conversion efficiency of 61%. The resulting laser output exhibits exceptional temporal and spatial characteristics. Utilizing this regenerative amplifier as the seed source, a multi-pass thin disk amplification system employing a lens guiding scheme has achieved pulse laser outputs exceeding 1kW with high stability.

Name: Xuehua Wang
Organization: Sun Yat-sen University

Biography:
Dr. Xuehua Wang is a Professor in Optics, School of Physics and Engineering, Sun Yat-Sen (Zhongshan) University, China. He got his PhD degree in 1995 at Shanghai Jiaotong University, China. He has long conducted researches on nano photonics, quantum optics and solid quantum chips, especially on controlling interaction between light and matter. He has made some significant achievements in these fields, including the universal position-dependent theoretical model for quantum light emission in nano structures, fabrication of highly-efficient on-demand controllable quantum light sources, highly-efficient realization of the room-temperature quantum state based upon strong coupling, and highly-efficient propagation and information storage of nano photons. He has published more than 130 peer-reviewed papers on famous international journals, such as Nat. Nanotech., Nat. Photon., Phys. Rev. Lett., Nat. Commun., Sci. Adv., Light: Sci.& Appl., etc.

Title:
Effective control of photon emissions and highly-efficient on-demand quantum light sources

Abstract:
The generation of high-quality photon sources has been a long-sought goal in modern quantum communication and computation. The semiconductor quantum dot (QD) has been successfully demonstrated as a potentially scalable and on-chip integration technology to generate the triggered photon streams. However, the randomicity of the photon streams emitted from the QD seriously hinders the realization of highly-efficient on-demand controllable quantum light sources. In this talk, I will firstly present the strongly-entangled photon pair sources with high brightness and indistinguishability by combining GaAs QDs with new broadband photonic nanostructures: circular Bragg resonators on highly efficient broadband reflectors (CBR-HBR), which was praised as "an important milestone" in this field. Then, I will talk about the on-demand spin-state manipulation of single-photon emission from quantum dot integrated with metasurface, and the bright solid-state sources for single photons with orbital angular momentum. Finall, I will present dynamic resonance fluorescence (i.e., on-demand emissions of highly coherent single photons) in solid-state cavity quantum electrodynamics under ultrafast pulse driving.



Name: Jianwei Wang
Organization: Peking University

Biography:
Dr. Jianwei Wang is an Assistant Processor in the Physics of Peking University. He obtained his PHD in the University of Bristol in 2016. His group focuses on quantum information science and technologies with integrated optics. The group is developing large-scale integrated quantum photonic devices for applications in the fields of quantum computations, quantum simulations and quantum communications, as well as for the understanding of fundamental respects of quantum physics. He has published more than 40 peer-reviewed papers in Science, Nature Physics, Nature Photonics, Nature Review Physics, Nature Computational Science, Nature Communications, Science Advances, PRL and Optica.

Title:
Silicon quantum photonic devices and circuits

Abstract:
On-chip generating, controlling, storing and detecting quantum states of light with integrated photonic circuits provides the way to realizing complex quantum technologies for applications in the fields of quantum computation, simulation and communication. In this talk we present recent progress in large-scale integrated photonic circuit for quantum information processing. We will discuss several silicon-photonic quantum devices that is able to generate, manipulate and analyze various entanglement structures, e.g., multidimensional entanglement, multiphoton entanglement, and topologically protected entanglement. Several state-of-the-art large-scale programmable quantum photonic chips will be introduced, for the study of quantum coherence, generation of entanglement, and quantum computing. We will then show the demonstrations of several quantum computing models and algorithms, including Gaussian quantum Boson sampling, quantum simulation of physical and chemical systems, linear combinations of unitarian for quantum information processing, and cluster-state quantum computing. These results show silicon-integrated quantum photonics as a route towards large-scale quantum information processing, pointing the way to applications in fundamental science and quantum technologies.

Name: Shougang Zhang
Organization: National Time Service Center, Chinese Academy of Sciences

Biography:
Prof. Shougang Zhang is from National Time Service Center of the Chinese Academy of Sciences, has been engaged in quantum time measurement, astronomical time measurement and time-frequency transmission with aim to develop an independent, safe and high-performance national time-frequency service system. As the chief scientist, he is currently responsible for the development of "high-precision time-frequency experimental system in the China Space Station", and also "high-precision ground-based time service system" for a major national science and technology infrastructure.

Title:
Time-frequency measurement and transmission

Abstract:
Time service system is a strategic national major science and technology infrastructure, mainly including the national standard time generation-keeping system, the transmission and broadcasting system. At present, with the application of atomic clock, time-frequency has become the physical quantity with the highest measurement accuracy, the high precision measurement of some physical quantities and physical constants, as well as the high precision test of some physical theory are indirectly through time frequency measurement. With the improvement of atomic clock performance, the corresponding time frequency measurement and transmission technology is also improving. Report summarizes the research status for time-frequency measurement, transmission and application, and also development trend. This paper introduces the "high-precision time-frequency experimental system in the China Space Station" and the national major science and technology infrastructure high-precision ground-based time service system", and gives the Sky-Space-Earth integrated structure for time-frequency service.

Name: Jing Zhang
Organization: Shanxi University

Biography:
Jing Zhang, Director of the Institute of Optoelectronics and the State Key Laboratory of Quantum Optics and Optical Quantum Devices, Shanxi University. He is National Science Fund for Distinguished Young Scholars, Yangtze River Scholars Distinguished Professor, Optical Society of America (OSA) Fellow, American Physical Society (APS) Fellow. He has made a series of important research works in the field of continuous variable quantum information and quantum gases, especially in the spin-orbit coupled degenerate Fermi gases and twisted bilayer optical lattice. The works about quantum simulation based on ultra-cold Fermi gas won the second prize of the National Natural Science Award in 2020. He was selected for the Xplorer prize by Tencent, National Innovation Excellence Award.

Title:
Atomic Bose-Einstein condensate in a twisted-bilayer optical lattice

Abstract:
In the field of condensed matter physics, strong correlations and superconductivity have been observed in twisted bilayers of graphene, giving birth to a new field of research: twistronics, inspiring great interest in its fundamental and applied physics. In this system, two single-layer graphene materials are stacked and twisted with a small angle to create moire fringes, which produce unique properties such as flat electron bands, slow electron velocities and high state densities. This work is based on Bose-Einstein condensation in spin-dependent optical lattices, where atoms in each spin state feel only one set of lattices, and interlayer coupling can be controlled by microwave coupling between spin states. In addition, Moire fringes in real space and diffraction in momentum space have been directly observed, confirming the existence of atomic superfluids in the bilayer lattice. The system integrates twisted bilayer structure, adjustable moire superlattice and interlayer coupling strength in this powerful ultra-cold atomic quantum simulation platform, which can be used to simulate twisted bilayer graphene and study the fundamental physics of its strong correlation and superconductivity. In this new system, many scientific problems such as flat band and superconducting properties can be further studied through rich means such as the structure of optical lattice, Bose-Fermi hybrid system, and high orbital degrees of freedom, as well as other novel quantum phenomena that are difficult to achieve in materials.

Name: Li You
Organization: Tsinghua University

Biography:
Li You, APS Fellow (2007), obtained his BS from Nanjing University in 1987, and his Ph.D. from JILA, University of Colorado in 1993. From 1993-1996, he was an NSF postdoctoral fellow at Institute for Theoretical Atomic and Molecular Physics (ITAMP) of Harvard-Smithsonian Center for Astrophysics. He joined Georgia Tech in 1996 and became Professor of Physics in 2004. He moved to Tsinghua University in 2009. His research interests include atomic physics, quantum optics, and quantum information science.

Title:
Quantum enhanced sensing with spinor atomic condensates in linear and nonlinear interferometries

Abstract:
Statistical inference of a parameter based on measurements from an ensemble of uncorrelated particles is lower bounded by the classical precision limit or the standard quantum limit (SQL). Quantum entangled ensembles can beat the SQL. Several paradigms for such enhanced interferometry will be discussed, and demonstrative experiments with spinor atomic Bose-Einstein condensates reported. Many-atom squeezed states, entangled states with reduced quantum noise, are deterministically generated and applied in linear interferometry, effective time-reversed evolutions of entanglement generating interactions are implemented for nonlinear interferometry to amplify signal preferentially over noise, both demonstrating quantum enhanced precisions.

Name: Qiang Zhang
Organization: University of Science and Technology of China

Biography:
Qiang Zhang, Professor of Physics in University of Science and Technology of China. Qiang got his bachelor and Ph. D. degree in University of Science and Technology of China in 2001 and 2006, respectively. He spent one year in University of Heidelberg as a visiting student from 2005 to 2006. Then he has implemented Postdoctoral research in Stanford University from 2006 to 2011. In 2011, he came back to University of Science and Technology of China as a professor. Dr. Zhang has primarily worked on experimental quantum physics and quantum information. He has published 130 articles in peer-reviewed journals, including 7 in Nature, 14 in Nature sub-journals, and 47 in PRL(X). He was elected as an OSA fellow in 2021, the chair of ITU Focus Group on Quantum Information Technology for Network and the secretary of general of China Quantum Computation and Metrology Standardization Council. He was awarded the Xplore Prize in 2023.

Title:
Optics interference and quantum information processing

Abstract:
Interference contains the only mystery of quantum mechanics. Meanwhile optical interference is a key technology enabling quantum information tasks. Here, I shall briefly review the quantum interference technology. And then I shall focus on recent quantum key distribution and quantum imaging experiments based on the quantum interference technology. In the end of the talk, I shall provide a perspective on quantum network.

Poster List

International Conference on Ultrafast Science
and Quantum Sensing (USQS)

1 Spectral features of nondegenerate PDC and generation of heralded Fock states

Bochen Wang — Beijing Jiaotong University

2 Generation of high power 194 nm deep ultraviolet continuous-wave laser

Yong Shen — National University of Defense Technology

3 Experimental Demonstration of Secure Relay in Quantum Secure Direct Communication Network

Min Wang — Beijing Academy of Quantum Information Sciences

4 Feasibility study of gravitational wave measurement based on space light clock

Chongyu Zhang — National University of Defense Technology

5 Optomechanically induced transparency and directional amplification in a non-Hermitian optomechanical lattice

Pengyu Wen — Tsinghua University

6 Different operation regimes of a novel all-polarization-maintaining Er-doped fiber laser mode-locked by a nonlinear amplifying loop mirror

Xiang Zhang — Institute for Quantum Science and Technology, College of Science, National University of Defense Technology, Changsha 410073

7 Dual-comb spectroscopy over 100km open-air path

Jinjian Han — University of science and techonlogy of China

8 113 km absolute ranging with nanometre precision

Yanwei Chen — University of Science and Technology of China

9 The ellipticity dependence of Rydberg state excitation of noble gas atoms subject to strong laser fields

Zhiqiang Wang — Institute of Theoretical Physics and Department of Physics, State Key Laboratory of Quantum Optics and Quantum Optics Devices, Collaborative Innovation Center of Extreme Optics, Shanxi University, Taiyuan

10 Topological Semimetal Nonlinear Hall Rectification for THz Detection

Zhen Hu — Shanghai Institute of Technical Physics of the Chinese Academy of Sciences

11 Multi-GeV electron beam generation from a wakefield accelerator driven by superintense ultrafast laser

Kangnan Jiang — State Key Laboratory of High Field Laser Physics and CAS Center for Excellence in Ultra-intense Laser Science, Shanghai Institute of Optics and Fine Mechanics (SIOM), Chinese Academy of Sciences (CAS), Shanghai, People's Republic of China

12 Multichannel dispersion compensation by chirped-multimode-grating assisted contradictional-coupler

Zhixiao Lv — Shanghai Jiao Tong University

13 Strong-Coupling with Silver Nanoparticles and J-aggregates at Room Temperature

Fang Li — Hubei Key Laboratory of Optical Information and Pattern Recognition, School of Mechanical and Electrical Engineering, Wuhan Institute of Technology, Wuhan

14 A Compact High-bandwidth Single-beam Optically-pumped Magnetometer for Biomagnetic Measurements

Tianbo Wu — Peking University

15 Detecting radio-frequency magnetic field based on parametric resonances

Xiyu Liu — Peking University

16 High-power intracavity single-cycle THz pulse generation using thin lithium niobate

Yicheng Wang — Ruhr-Universität Bochum

17 Generation of vector-polarized optical frequency comb in the deep ultraviolet region

Zhengrong Xiao — Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences, Wuhan 430071, China

18 Sub-100-fs high quality pulse generation from Yb-doped fiber amplifier with pulse shaping

Kun Guo — National University of Defense Technology

19 Analysis of maximum-likelihood estimation for frequency-modulated continuous wave single photon LiDAR

Shaobo Wu — Aerospace Information Research Institute, Chinese Academy of Sciences

20 Sensing metal contaminants in water by high-intensity laser filaments

Helong Li — Institute of Atomic and Molecular Physics, Jilin University

21 Remotesingle photon 3Dimaging based on photon cluster point cloud statistical filtering

Ruen Chen — Advanced Interdisciplinary Research Center for Optics

22 Single-species atomic comagnetometer employing two-frequency synchronous optical pumping

Yixin Zhao — State Key Laboratory of Advanced Optical Communication Systems and Networks, School of Electronics, and Center for Quantum Information Technology, Peking University, Beijing 100871

23 Research on the modulation of the terahertz beam distribution generated by laser–induced air plasma

Ruoxi Wu — Capital Normal University

24 The Microscopic Mechanisms of Nonlinear Rectification on Terahertz Detector

Yingdong Wei — Shanghai Institute of Technical Physics, Chinese Academy of Sciences

25 Ultrastable fuel-lean ignition by femtosecond laser in the filamentation regime

Hongwei Zang — State Key Laboratory on Integrated Optoelectronics, College of Electronic Science and Engineering, Jilin University

26 Probing ultrafast molecular dynamics with machine-learning-assisted high harmonic spectroscopy

Lixin He — Huazhong University of Science and Technology

27 Air-laser-based coherent Raman spectroscopy of atmospheric molecules

Yao Fu — Jinlin University

Introduction of Sponsors

International Conference on Ultrafast Science and Quantum Sensing (USQS)

Introduction of Sponsors

长沙麓邦光电科技有限公司

麓邦公司是一家专注于光学元件、光学模组与光学系统研发的高新技术企业，致力于为光学领域研发人员提供高端产品和解决方案，并不断推进光学技术的民用化和前沿技术的平民化，以光学科技创造更美生活，从而实现企业价值和用户价值的共同成长。在液晶微纳技术的研发与应用领域，公司已走在全球前列，该技术在航空航天、激光雷达、激光加工、激光照明、AR/VR、医美医疗上有着十分广阔的应用前景。

上海朗研光电科技有限公司

上海朗研光电科技有限公司是国内首批研发和生产工业级超快光纤种子源、飞秒和皮秒光纤激光器、灵敏探测器的一家创新型高新科技公司，已连续九年被认定为上海市高新技术企业。公司拥有高度专业化的研发团队，其中70%以上为具有硕士以上学位的专业人才。多项产品获国家权威部门的高新技术成果认定。已申请发明、实用新型专利150余项；已授权达90余项，其中发明专利60余项。公司先后承担了科技部重大仪器专项、重点研发计划专项及上海市科技企业创新基金、科技启明星、国际科技合作等多个项目。先后荣获2018年度中国激光行业贡献奖“工业激光器创新贡献奖”、2021年上海产学研合作优秀项目奖“一等奖”、2022年度红光奖“超快激光器创新奖”等。朗研光电将继续秉承“专而精”的匠人精神，为科研和工业客户提供服务，打造国际知名的超快激光品牌。

上海链胜科技有限公司

公司成立于2019年，由原来江西连胜科技股份有限公司上海办事处发展为华东地区独家公司，主要经营：从事仪器仪表、信息、智能、机械,、电子科技领域内的技术开发、技术转让、技术咨询、技术服务、仪器仪表、机电设备、机械设备、五金交电、电气设备及配件、电子元器件的销售,机电设备安装、维修,搬运装卸服务,从事货物及技术的进出口业务。(依法须经批准的项目,经相关部门批准后方可开展经营活动）并由初期的单一产品隔振平台，到现在拥有主动隔振平台、电动位移台、光具座、光电仪器应用系统六大系列产品。产品广泛应用于国内外光电企业、科研院所及国内各高校国家重点实验室。

上海链胜科技有限公司已发展成熟了精密隔振和减振系统产品、精密位移台、光具座、光电仪器、光学元件等系列产品。为客户提供科学的隔振解决方案，承载了坚持创新的服务理念，为客户提供全面支持。多年来客户遍布全国各大院校和科研院所，涉及物理、激光、光学、力学、电子信息、精密测量、精密加工、生物工程和电生理等各个专业领域及行业，我司光学平台及自动平衡精密隔振系统产品在国内的市场占有率超过50%，已成为国内最大的精密隔振平台制造基地。

北京海科思锐光电仪器有限公司

北京海科思锐光电仪器有限公司专注于光电领域的国外产品代理，为客户提供专业的全套实验室解决方案以及引进国外先进的技术和光电领域的产品。产品包括各类激光器、光学测量设备、精密光学元件等，所涉足的领域涵盖了材料加工、光通讯、生物医疗、航空航天、激光加工等相关领域。除了拥有一批专业经验的销售工程师之外，还拥有一支强大的技术支持队伍。我们的技术支持团队可以为客户提供完整的设备安装，培训，软硬件开发，系统集成等工作，并针对客户的应用要求提供专业的解决方案。“品质源于专业，专业创造价值”我们坚持以一流的产品，专业的解决方案和完善快捷的优质服务，立足于光电领域，与广大客户和合作伙伴携手合作，共创辉煌。

武汉中科锐择光电科技有限公司

武汉中科锐择光电科技有限公司成立于2016年，公司总部坐落于中国光谷烽火创新谷内，是一家自主创新的国家高新技术企业，国家级“专精特公司简新”小巨人企业，湖北制造业单项冠军产品(特种光器件)企业，“湖北省专精特新中小企业”，湖北省2023-2024年度上市后备金种子企业。

江苏星控激光科技有限公司

江苏星控激光科技有限公司，由徐红星院士发起，联合华东师范大学、武汉大学博士团队共同成立。公司聚焦“光与物质的相互作用”，专注“航空航天、军工、新能源、半导体”等领域的精密激光加工、检测等设备的研制。公司业务覆盖精密激光制孔、切割、焊接、检测等一系列设备生产、销售、加工以及定制化解决方案。已布局航空发动机核心零部件、新能源锂金属电池及金属双极板、金属材料、复合材料等多个细分领域。

莱森光学（深圳）有限公司

莱森光学(深圳)有限公司位于中国科技创新之都——深圳，是一家提供光机电一体化集成解决方案，专注于光谱传感和光电应用系统的研发、生产和销售的高科技公司。

莱森光学一直致力于为高端科研及工业用户提供具有革命性先进技术的光谱传感和光电应用系统，此外我们还具备极其丰富的定制经验：光机设计、机电设计、软件开发、定制系统，以满足不同用户的多样化需求。目前，我们的产品已广泛应用于物理学、化学、生物制药、能源环境和半导体制造等领域。

莱森光学是一家可信赖的、紧跟技术前沿的、提供创新型及高品质服务的和以客户为导向的光学仪器集成解决方案的供应商。

苏州睿科晶创光电科技有限公司

苏州睿科晶创光电科技有限公司(简称：睿科晶创，英文名: Suzhou CTL Photonics Inc.)是一家专注光学超晶格芯片的高科技型公司，睿科晶创集研发、制造、销售于一体，致力于高抗损伤阈值的PPXX(如:PPLN，PPLT和PPKTP等)极化晶体关键材料及其应用产品的研发和生产。

重庆速瑞信息科技有限公司

重庆速瑞信息科技有限公司是华东师范大学重庆研究院孵化的一家集产、学、研结合的高新科技企业。公司以研究院的核心技术及研发团队为依托，生产销售各类激光种子源、超快激光器等。速瑞：速度与机械的极致融合，即为激光装备的寓意。公司致力于以“技术先行，经营致胜，服务为本”的商业推广理念，逐步开拓激光装备在国内外的市场，成为行业内颇具影响力的企业。

Note

Note

Note

Note

Note

Note

Note

Note

Note

Note