

2019亚洲光电子会议同期  
西湖光电子论坛  
Photonics Asia 2019  
WEST-LAKE PHOTONICS SYMPOSIUM

# Agenda



College of Optical Science  
and Engineering (COSE),  
Zhejiang University



The State Key Laboratory  
of Modern Optical  
Instrumentation



Joint International  
Research Laboratory  
of Photonics (JIRLOP)

Oct. 20, 2019  
Hangzhou, China.

# Contents

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- 1、 West-Lake Photonics Symposium Agenda ..... 01**
- 2、 College of Optical Science and Engineering Introduction ..... 06**
- 3、 The State Key Laboratory of Modern Optical Instrumentation Introduction..... 10**
- 4、 Joint International Research Laboratory of Photonics Introduction ..... 12**



# 2019 Photonics Asia

## WEST-LAKE PHOTONICS SYMPOSIUM AGENDA

Hangzhou, China. Oct. 20, 2019

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### Workshop 1 Metasurface

| Workshop: Metasurface, Room: 102A        |             |                 |   |  |
|--|-------------|-----------------|---|--|
| Chairs: Baile Zhang, Yungui Ma           |             |                 |   |  |
| No.                                      | Time        | Invited Speaker | Affiliation   | Topic  |
| 1  | 13:00-13:25 | Jianhua Teng    | IMRE,A*STAR,<br>Singapore   | Flat Metaoptics with Smooth Si Surface and Nanosieves                                    |
| 2  | 13:25-13:50 | HUI Liu         | Nanjing University  | Transformation optics based on metasurfaces  |
| 3  | 13:50-14:15 | Baile Zhang     | University of Nanyang Technology  | 3D topological light and sound   |
| 4  | 14:15-14:40 | Yun Lai         | Nanjing University  | Pseudo-local materials with tunable dispersions and extraordinary waveguiding properties |
| 5  | 14:40-15:05 | Jensen Li       | Department of Physics,<br>The Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong, China | Plasmonic Q-plates with exceptional point  |
| 6  | 15:05-15:30 | Huanyang Chen   | Xiamen University   | Experiments of Transformation Optics and Curved Surfaces                                 |
| Group photo & Coffee break (15:30-15:50) |             |                 |   |  |
| 7  | 15:50-16:15 | Yongmin Liu     | North Eastern University,USA  | Enhancing Chiral Light-Matter Interactions by Metamaterials                              |
| 8  | 16:15-16:40 | Qiang Cheng     | Southeast University  | Signal Modulation With the Active Time Domain Metasurface                                |
| 9  | 16:40-17:05 | Feng Liu        | Zhejiang University   | The development of the optically active gate-defined quantum dots                        |
| 10                                       | 17:05-17:30 | Jianhua Jiang   | Suzhou University   | Photonic and acoustic metamaterials with higher-order topology                           |

# 2019 Photonics Asia

## WEST-LAKE PHOTONICS SYMPOSIUM AGENDA

Hangzhou, China. Oct. 20, 2019

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### Workshop 2 Optical trapping and manipulation

| Workshop: Optical trapping and manipulation, Room: 102B |             |                 |  |   |
|---|-------------|-----------------|--|---|
| Chairs: Min Qiu, Huizhu Hu                              |             |                 |  |   |
| No.   | Time        | Invited Speaker | Affiliation  | Topic   |
| 1   | 13:00-13:25 | Min Qiu         | Weslake University                                       | Weslake University  |
| 2   | 13:25-13:50 | Ming Lei        | Xi'an Institute of Optics and Precision Mechanics of CAS | Simultaneous optical trapping and imaging in the axial plane                            |
| 3   | 13:50-14:15 | D.C. Moore      | Yale University  | Precision force and torque sensing using optically levitated sensors                    |
| 4   | 14:15-14:40 | Fangwen Sun     | University of Science and Technology of China            | Calibration and mass measurement of optically levitated nanoparticle sensors            |
| 5   | 14:40-15:05 | Huizhu Hu       | Zhejiang University                                      | Practical optically levitated sensors   |
| 6   | 15:05-15:30 | Guangzong Xiao  | National University of Defense Technology                | Progress of on-chip optical trapping technology in vacuum                               |
| Group photo & Coffee break (15:30-15:50)                |             |                 |  |   |
| 7   | 15:50-16:15 | Zhangqi Yin     | Beijing Institute of Technology                          | Quantum information processing with nitrogen-vacancy centers in a levitated nanodiamond |
| 8   | 16:15-16:40 | Tongcang Li     | Purdue University, USA                                   | Fast rotation and torque detection with a levitated nanoparticle                        |

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Hangzhou, China. Oct. 20, 2019

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### Workshop 3 Super-resolution imaging

| Workshop: Super-resolution imaging, Room: 102C |             |                 |                                     |  |
|--|-------------|-----------------|-------------------------------------|--|
| Chairs: Xu Liu, Cuifang Kuang                  |             |                 |                                     |  |
| No.  | Time        | Invited Speaker | Affiliation                         | Topic  |
| 1  | 13:00-13:30 | Thomas Klar     | Johannes-Kepler-Universität in Linz | STED Lithography   |
| 2  | 13:30-14:00 | Guoan Zhen      | University of Connecticut           | Super-resolution microscopy via speckle illumination and ptychographic structured modulation |
| 3  | 14:00-14:30 | Liang Gao       | West Lake University                | Versatile 3D Imaging of Multicellular Specimens Using Tiling Light Sheet Microscope          |
| 4  | 14:30-15:00 | Emil Kromann    | Technical University of Denmark     | Live Cell STED Microscopy  |
| 5  | 15:00-15:30 | Yongli Zhang    | Yale University                     | Optical Tweezer  |
| Group photo & Coffee break (15:30-15:50)       |             |                 |                                     |  |
| 6  | 15:50-16:20 | Ke Wang         | Shenzhen University                 | Recent progress in deep-brain multiphoton microscopy excited at the 1700-nm window           |
| 7  | 16:20-16:40 | Wei Zheng       | Chinese Academy of Science          | Expanding the versatility of two-photon excitation fluorescence microscopy                   |
| 8  | 16:40-16:55 | Meng Lu         | University of Cambridge             | Advanced Imaging of amyloid- $\beta$ protein aggregation                                     |

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### Workshop 4 Microcavity

| Workshop: Microcavity, Room: 103A        |             |                 |  |  |
|--|-------------|-----------------|--|--|
| Chairs: Qinghai Song, Wei Fang           |             |                 |  |  |
| No.                                      | Time        | Invited Speaker | Affiliation  | Topic  |
| 1  | 13:00-13:25 | Yunfeng Xiao    | Peking University                                    | Microcavity enhanced surface nonlinear optics  |
| 2  | 13:25-13:50 | Xiaoshun Jiang  | Nanjing University                                   | Kerr-comb generation in high-Q silica microtoroid resonators with large-diameters and dry-etched silica microdisk resonators |
| 3  | 13:50-14:15 | Xiaoqin Shen    | ShanghaiTech University                              | Organic-hybrid high-Q microcavities for high efficiency frequency conversion   |
| 4  | 14:15-14:40 | Changling Zou   | University of Science and Technology of China        | Cascaded nonlinear photonics in microcavities  |
| 5  | 14:40-15:05 | Chunhua Dong    | University of Science and Technology of China        | Non-reciprocity in the high-Q microresonator   |
| 6  | 15:05-15:30 | Wenjie Wan      | Shanghai Jiao Tong University                        | Slow and fast light enhanced light drag in a moving microcavity  |
| Group photo & Coffee break (15:30-15:50) |             |                 |  |  |
| 7  | 15:50-16:15 | Qinghai Song    | Harbin Institute of Technology, Shenzhen             | Mode interactions in optical microcavities   |
| 8  | 16:15-16:40 | Jintian Lin     | Shanghai Institute of Optics and Fine Mechanics, CAS | High-Q lithium niobate microcavities and ultralow loss waveguides  |
| 9  | 16:40-17:05 | Huailiang Xu    | Jilin University                                     | Femtosecond laser fabrication of microcavities   |
| 10                                       | 17:05-17:30 | Xiulai Xu       | Institute of Physics, CAS                            | Manipulating the coupling strength in a strongly coupled quantum dot and photonic crystal cavity system                      |
| 11                                       | 17:30-17:55 | Mark Hopkinson  | University of Sheffield                              | In-situ interference lithography for the self-assembly of InAs quantum dots  |

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### Workshop 5 Oceanic and Atmospheric Optics

| Workshop: Oceanic and Atmospheric Optics, Room: 103C |             |                             |   |   |
|--|-------------|-----------------------------|---|---|
| Chairs: Dong Liu, Chuanfeng Zhao                     |             |                             |   |   |
| No.  | Time        | Invited Speaker             | Affiliation   | Topic   |
| 1  | 13:00-13:25 | Chuanfeng Zhao              | Beijing Normal University   | Application of Micropulse Lidar in Cloud Detection  |
| 2  | 13:25-13:50 | Lei Bi                      | Zhejiang University   | Modeling optical properties of aerosols: methods and applications   |
| 3  | 13:50-14:15 | Aleksey V. Malinka Stepanov | Institute of Physics, Belarusian National Academy of Sciences, Minsk, Belarus | Retrieval of the sea ice concentration and melt pond fraction from satellite data using information on cumulative melting degree day                                |
| 4  | 14:15-14:40 | Chengfeng Le                | Zhejiang University   | Ocean color remote sensing for Carbon cycle studies   |
| 5  | 14:40-15:05 | Jing Xu                     | Zhejiang University   | Underwater Wireless Optical Communications using unconventional detectors   |
| 6  | 15:05-15:30 | Lei Zhou                    | Shanghai Jiaotong University  | Sub-seasonal variability, a bridge between weather and climate  |
| Group photo & Coffee break (15:30-15:50)             |             |                             |   |   |
| 7  | 15:50-16:15 | Dong Liu                    | Zhejiang University   | High-spectral-resolution lidar for atmosphere and ocean studies   |
| 8  | 16:15-16:40 | Zhibin Wang                 | Zhejiang University   | Dependence of the hygroscopicity on particle size, humidity and solute concentration: implications for laboratory experiments, field measurements and model studies |
| 9  | 16:40-17:05 | Dave Donovan                | Koninklijk Nederlands Meteorologisch Instituut, Netherlands                   | Development of ATLID Retrieval Algorithms   |
| 10   | 17:05-17:30 | Yong Han                    | Sun Yat-sen University  | The Characteristics of Large Scale Cloud System and Planetary Boundary Layer from Satellite and Sounding Data   |



# College of Optical Science and Engineering (COSE), Zhejiang University

浙江大学光电科学与工程学院

(<http://opt.zju.edu.cn/>)

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The College of Optical Science and Engineering (COSE) at Zhejiang University is the successor of the Division of Optical Instrumentation, which was founded in 1952 as the first education & research base of optical engineering for college students in China. Currently the college has seven research institutes and centers. There are two national research laboratories, two provincial key laboratories as well as two international joint laboratories. The college also has an outstanding training system for young people, including one postdoctoral workstation, three PhD programs, two graduate programs and one undergraduate program. Under these programs, there are about 120 undergraduate students, 110 graduate students and 50 PhD students admitted to the college annually. In the college, there are 48 full professors and 38 associate professors. All of them have strong academic and professional backgrounds in the field of optics & photonics.

With the great successes in the past 60 years, the college has a reputation for being a world-class institute with outstanding research & teaching for optics & photonics. It has become well-known as "the cradle of talents for optical engineering in China". In the past years the Minister of Education (MOE) of China organized three official evaluations for all the departments of optical engineering in China, and ZJU-COSE had been ranked No. 1 in China. In 1960s, the department had developed ultra-fast camera, which was awarded with the outstanding collectivity award at the first National Science and Technology Congress held in 1978. In 2008, the college won a national outstanding award of Science and Technology regarding to the significant contributions.



## National Research Laboratories

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- ✦ State Key Laboratory of Modern Optical Instrumentation
- ✦ National Engineering Research Center of Optical Instrumentation

## Provincial & Ministries' Research Laboratories

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- ✦ National Defense Key Discipline Laboratory
- ✦ Zhejiang Provincial Key Laboratory for Sensing Technologies

## Research Institutes

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- ✦ Institute of Optoelectronic Engineering
- ✦ Institute of Optical Imaging & Testing Engineering
- ✦ Institute of Optical Engineering
- ✦ Institute of Biophotonics
- ✦ Institute of Nanophotonics
- ✦ Centre for Optical and Electromagnetic Research
- ✦ Centre for Optical Inertial Technology

## Academic Research

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During the period from 2013 to 2017, the college secured more than 130 national research projects with 120 million RMB research fund annually, supported by National Basic Research Program of China (973-Program), National High-Tech R&D Program (863-program), National Key R&D Program, National Natural Science Foundation, etc. The college has published more than 890 papers in international journals, and 15 books. The college has been awarded with 5 National/Provincial Scientific and Technological Awards. There are four major research directions as shown below.

- ✦ Optical materials and devices, including nanophotonics, integrated photonics, plasmonics, quantum photonics, nano-fibers, 2D materials, meta-materials, etc.
- ✦ Optical imaging and display, including super-resolution microscopy, optical imaging systems, 3D display, optical coherence tomography, color optics, etc.
- ✦ Optical sensing and testing, including optical fiber sensors, lidar, optical technologies and instruments.
- ✦ Emerging applications of photonics, including solar cell, photothermal technology, under-water photonics.

# International Exchange

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The college has built up strong international cooperation for research and education with many institutes in the world, including Hamamatsu Photonics Corporation (Japan), the Royal Institute of Technology (KTH, Sweden), Rochester University (USA), Eindhoven University of Technology (Netherlands), etc. Currently, more than 70 graduate students are recommended to study abroad every year. There are four international joint labs as shown below.

- ◆ Joint International Research Laboratory of Photonics.
- ◆ Joint International Research Center for Photonics.
- ◆ Sino-Swedish Joint Research Center of Photonics.
- ◆ International Laboratory of Hamamatsu Photonics.





# **The State Key Laboratory of Modern Optical Instrumentation**

**现代光学仪器国家重点实验室**

(<http://moi-lab.zju.edu.cn/>)

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The State Key Laboratory of Modern Optical Instrumentation (SKL-MOI) at Zhejiang University was founded in 1989. In 1995, the laboratory got approved by the nation, and was officially opened to the public in the year after. The mission of SKL-MOI is to develop modern optical imaging and sensing techniques, with a commitment to becoming one of the leading international research and training centers, and meet the national key needs in modern optical science and industrial development of instruments.

The main research directions of the SKL-MOI include: Precision Equipment for Optical Sensing, Advanced Optoelectronic Technology and Devices, Micro/Nano Photonics and Devices, and Optical Detection and Instruments for Life and Environment. Ever since the establishment of SKL-MOI, a large series of studies on scientific and technological frontiers have been carried out to fulfill the key needs of the nation in these fields.

Over the last twenty years, SKL-MOI has introduced and cultivated a number of outstanding scholars from home and abroad. Currently, SKL-MOI has 67 full-time faculty members, and more than 30 non-faculty members, including one CAS Academician, 18 State Specially Recruited Experts, 9 winners of the National Science Foundation for Distinguished Young Scholars, 6 awardees of Cheung Kong Scholar Professorships, and 4 winners of National Science Foundation for Excellent Young Scientists. In addition, SKL-MOI has 1 innovation team approved by the Ministry of Education of China, 1 national defense innovation team, and 2 innovative teams approved by the Department of Science and Technology of Zhejiang Province.

SKL-MOI now houses approximately 8,000 square meters of laboratory space area, and owns a series of equipment and facilities for optical fiber sensing, micro/nano fibers, optoelectronic thin films, biophotonics, optoelectronic lasers, etc., with a total value of more than 355 million Yuan.

SKL-MOI has undertaken a generous amount of national scientific research projects, and trained a large number of industrial and academic professionals. Over the years, SKL-MOI has made several breakthroughs in the fields of high-precision optical fiber sensing, optical payloads for space missions, micro/nano optical fibers and devices, super-resolution microscopy, and integrated optoelectronic devices and sensing, making the laboratory indispensable in the field of optical engineering. With the joint efforts of all its members, SKL-MOI continues to be ranked among the top research organizations for the annual number of papers published in the international leading journals.



# Joint International Research Laboratory of Photonics (JIRLOP)

## 教育部光子学与技术国际合作联合实验室

(<http://jirlop.zju.edu.cn/>)

The Joint International Research Laboratory of Photonics (JIRLOP) is a collective force of the world-class research teams on photonics from Zhejiang University, University of Rochester and Royal Institute of Technology (Sweden). In October 2015, JIRLOP successfully passed the official assessment conducted by the Ministry of Education of China. The goal of JIRLOP is to be a world-leading laboratory of photonics led by top scientists. The research directions include nanophotonic devices, integrated photonics and advanced photonic instrumentation. JIRLOP also provides a high-level international education of photonics. Currently the lab has established many connections with the universities around the world and is seeking more partners in the future.

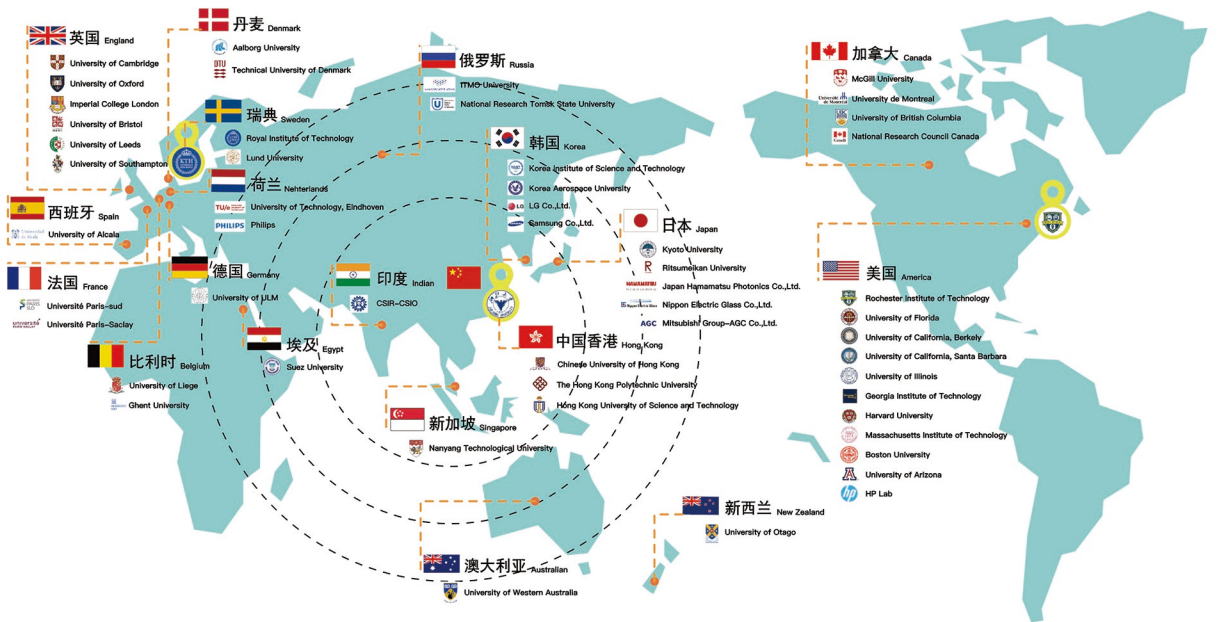
## Laboratory distribution

### 实验室总图



# International Cooperation Network

## 国际合作图



## **Organized by**

College of Optical Science and Engineering  
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Zhejiang University Education Foundation