Jointly held by Zhejiang Lab

SPIE-CLP Conference on Advanced Photonics 2022

21-23 November, 2022

Organizers

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之江实验室 ZHEJIANG LAB

SPIE.

Conference Schedule

Conference Schedule	Nov 21	Nov 22	Nov 23
Advanced Endoscopy Workshop	09:00-16:45		
Lithium Niobate Photonics Workshop	09:00-16:45		
Orbital Angular Momentum Workshop	09:00-16:45		
Technical Sessions		08:30-11:45	08:30-11:45 14:00-17:15
Opening & Plenary Session		14:00-17:50	
Poster Session		17:50-18:50	

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之江实验室 ZHEJIANG LAB

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Honorary Chair

Shiqiang Zhu
Zhejiang Lab, China

General Chairs

Xu Liu
Zhejiang University, China

Anatoly Zayats
King's College London, UK

Xiaocong Yuan
Shenzhen University, China

Plenary Speakers

Andrew Forbes
University of the Witwatersrand Johannesburg, South Africa

Xu Liu
Zhejiang University, China

Demetri Psaltis
Ecole Polytechnique Federale de Lausanne (EPFL)
Switzerland

Jianyu Wang
Hangzhou Institute for Advanced Study, UCAS, China

Sessions

Biophotonics

Endoscopic imaging, Novel imaging techniques, Optical imaging, Photoacoustic imaging, Raman imaging, Super-resolution imaging.

Session Chairs

Dan Elson
Imperial College London, UK

Mike Somekh
Shenzhen University, China

Xunbin Wei
Peking University, China

Peng Xi
Peking University, China

Laser and nonlinear optics

Advanced materials, Integrated optical comb, Laser technique, Microcavity nonlinear optics, Nonlinear nano-optics, Nonlinear optics.

Session Chairs

Abdul Elezzabi
University of Alberta, Canada

Sarah Houver
University of Paris, France

Xiaoshun Jiang
Nanjing University, China

Dingyuan Tang
Nanyang Technological University, Singapore

Nanophotonics and optical computing

Metamaterials & metasurface, Nano manufacturing, Nano-optical imaging, Nanophotonic waveguides & devices, Surface plasmon polariton, Topological photonics.

Session Chairs

Daoxin Dai
Zhejiang University, China

Junsuk Rho
Pohang University of Science and Technology, Korea

Guohai Situ
Shanghai Institute of Optics and Fine Mechanics, CAS, China

Qinghai Song
Harbin Institute of Technology, China

Sensing and imaging

Advanced optical sensing, Computational imaging, Human-like sensor, New optical fiber sensing, Optical information AI processing, Super space-time.

Session Chairs

Liangcai Cao
Tsinghua University, China

Baiou Guan
Jinan University, China

Tawfique Hasan
University of Cambridge, UK

Qing Yang
Zhejiang University, China

Lithium Niobate Photonics Workshop

Lithium niobate, Thin film lithium niobate, Optical modulator, Photonic integrated circuit, Nonlinear optics, Heterogeneous integration

Chairs

Siyuan Yu
Sun Yat-sen University, China

Ruijun Wang
Sun Yat-sen University, China

Orbital Angular Momentum Workshop

OAM nonlinearity, Optical vortex theory, OAM for quantum information,OAM free sapce communications, OAM data storage

Chairs

Qiwen Zhan
University of Shanghai for Science and Technology (USST), China

Fu Feng
Shenzhen University, China

Luping Du
Shenzhen University, China

Advanced Endoscopy Workshop

Endoscopic imaging, Multimodal endoscope, Endoscopic therapy

Chairs

Qing Yang
Zhejiang University, China

Liqiang Wang
Zhejiang University, China

Ji Qi
Zhejiang Lab, China

Yizhou Tan
First Medical Center of Chinese PLA General Hospital, China

Ling Fu
Huazhong University of Science and Technology, China

Lithium Niobate Photonics Workshop

Online
November 21, 2022

Presider: Siyuan Yu, Sun Yat-sen University, China

09:00-09:30	High speed thin-film lithium niobate devices Xinlun Cai Sun Yat-sen University, China
09:30-10:00	Integrated active/passive photonic devices on thin film lithium niobate Ya Cheng East China Normal University, China
10:00-10:15	Break
10:15-10:45	Commercialization opportunity and development of thin film lithium niobate modulators Weihua Guo Huazhong University of Science and Technology, China
10:45-11:15	Lithium niobate photonic integrated circuits for future optical and microwave links Cheng Wang City University of Hong Kong, China
11:15-13:30	Lunch

Presider: Ruijun Wang, Sun Yat-sen University, China

13:30-14:00	Femtosecond laser writing of lithium niobate nonlinear photonic crystals Yong Zhang Nanjing University, China
14:00-14:30	Optical ranging using integrated lithium niobate electro-optic frequency combs Yang Li Tsinghua University, China
14:30-15:00	Broadband and cascaded second-order nonlinear optical effects in lithium niobite ridge waveguides Fang Bo Nankai University, China
15:00-15:15	Break
15:15-15:45	Deterministic N-photon State Generation Using Lithium Niobate on Insulator Device Zhenda Xie Nanjing University, China
15:45-16:15	Nonlinear optics based on devices on thin-film lithium niobate Jinsong Xia Huazhong University of Science and Technology, China
16:15-16:45	Frequency conversion in micrometer lithium niobate-on-insulator waveguides Yuanlin Zheng Shanghai Jiao Tong University, China

Orbital Angular Momentum Workshop

Online
November 21, 2022

Presider: Fu Feng, Shenzhen University, China

09:00-09:30	Plasma acceleration driven by super intense Laguerre–Gaussian laser Wenpeng Wang Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, China
09:30-10:00	Manipulating OAM in Nonlinear Photonic Crystals Yong Zhang Nanjing University, China
10:00-10:15	Break
10:15-10:45	Do Vortex Beams Carry Orbital Angular Momentum? Wei Liu National University of Defense Technology, China
10:45-11:15	Spatiotemporal Vortices of Light Chenhao Wan Huazhong University of Science and Technology, China
11:15-13:30	Lunch

Presider: Qiwen Zhan, University of Shanghai for Science and Technology, China

13:30-14:00	Vector beams beyond orbital angular momentum Carmelo Rosales-Guzmán Centro de Investigaciones en Optica, Mexico
14:00-14:30	Sensing and Multiplexing Optical Vortices at The Nanoscale Xiangping Li, Jinan University, China
14:30-15:00	Angular Momentum and Its Topology in A General Electromagnetic Field Peng Shi Shenzhen University, China
15:00-15:15	Break

Presider: Luping Du, Shenzhen University, China

15:15-15:45	Spin-Orbit Interaction of Light: From Optical Analog Computing to Quantum Microscope Hailu Luo Hunan University, China
15:45-16:15	Geometric Phase and Nonlinear Photonic Metasurface Guixin Li Southern University of Science and Technology, China
16:15-16:45	Active modulating of orbital angular momentum states of light Shibiao Wei Shenzhen University, China

Advanced Endoscopy Workshop

Online
November 21, 2022

Presider:Ling Fu, Huazhong University of Science and Technology, China	
09:00-09:30	High stable multimode fiber imaging Qing Yang Zhejiang Lab/Zhejiang University, China
09:30-10:00	Progress in the Application of Digestive Endoscopy Zhendong Jin Shanghai Changhai Hospital, China
10:00-10:15	Break
10:15-10:45	In vivo structural and functional endoscopic imaging technology Xibin Yang Suzhou Institute of Biomedical Engineering and Technology,Chinese Academy of Sciences, China
10:45-11:15	Real-time volumetric imaging using time-stretched chromatic confocal microscopy Pu Wang Beihang University, China
11:15-13:30	Lunch
Presider: Yizhou Tan, First Medical Center of Chinese PLA General Hospital, China	
13:30-14:00	Design and Implementation of Ultra High Magnification Endoscopic Imaging System Liqiang Wang Zhejiang University, China
14:00-14:30	Endoscope-guided Navigation System for Skull Base Minimally Invasive Surgery Jingfan Fan Beijing Institute of Technology, China
14:30-15:00	Clinical Application of Neuroendoscope Qun Wu The Second Affiliated Hospital Zhejiang University School of Medicine, China
15:00-15:15	Break
Presider: Ji Qi, Zhejiang Lab, China	
15:15-15:45	Multidimensional optical multiplexing over a multimode fiber Yi Xu Guangdong University of Technology, China
15:45-16:15	The application of intravascular multi-modality technologies in atherosclerosis diagnosis Zhihua Xie Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China
16:15-16:45	Endoscopic OCT angiography Peng Li Zhejiang University, China

Opening Ceremony & Plenary Talks

November 22, 2022

Presider: Xu Liu, Zhejiang University, China	
14:00-14:30	Opening Remarks
14:30-14:35	Introduction of Advanced Photonics/AP Nexus (Xiaocong Yuan, Shenzhen University, China)
Presider: Xiaocong Yuan, Shenzhen University, China	
14:35-15:20	Application of photon detection technology in space communication （Plenary) Jianyu Wang Hangzhou Institute for Advanced Study, UCAS, China
15:20-16:05	High throughput laser 3D nanometer direct writing techniques （Plenary) Xu Liu Zhejiang University, China
16:05-16:20	Break
Presider: Anatoly Zayats, King's College London, United Kingdom	
16:20-17:05	Optical learning machines （Plenary) Demetri Psaltis Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland
17:05-17:50	Advances in structured light lasers （Plenary) Andrew Forbes University of the Witwatersrand, South Africa
17:50-18:50	Poster Session

SC1. Biophotonics

Online
November 22, 2022

Presider: Leiting Pan, Nankai University, China

08:30-09:00	Polarization-sensitive imaging of the uterine cervix (Invited) Jessica Ramella-Roman Florida International University, United States
09:00-09:30	Single-shot femtosecond stimulated Raman histopathology with deep learning (Invited) Minbiao Ji Fudan University, China
09:30-10:00	Deep-learning 4D live microscopy (Invited) Peng Fei Huazhong University of Science and Technology, China
10:00-10:15	Break

Presider: Peng Fei, Huazhong University of Science and Technology, China

10:15-10:45	Organic Semiconductors for Biomedical Imaging (Invited) Changfeng Wu Southern University of Science and Technology, China
10:45-11:15	Single-Molecule localization super-resolution microscopy and its applications on erythrocyte cytoskeleton (Invited) Leiting Pan Nankai University, China
11:15-11:45	Upconversion Super-resolution Microscopy (Invited) Qiuqiang Zhan South China Normal University, China

SC1. Biophotonics

Online
November 23, 2022

Presider: Ke Si, Zhejiang university, China

08:30-09:00	Super-resolution: an adventure on a new dimension (Invited) Peng Xi Peking University, China
09:00-09:30	Time-streched real-time volumetric confocal microscopy (Invited) Pu Wang Beihang University, China
09:30-10:00	Upconversion nanophotonic systems for super-resolution imaging and single-molecule assays (Invited) Dayong Jin Southern University of Science and Technology, China
10:00-10:15	Break

Presider: Pu Wang, Beihang University, China

10:15-10:45	Multi-dimensional Single Particle Tracking in Live Cells (Invited) Ning Fang Xiamen University, China
10:45-11:15	Ultrafast 3D histological imaging based on tissue clearing and machine learning (Invited) Ke Si Zhejiang university, China
11:15-11:45	Plasmonic Fano-resonant Metamaterial for Nanoparticle Trapping and Biosensing (Invited) Domna Kotsifaki Duke Kunshan University, China; Okinawa Institute of Science and Technology Graduate University, Japan

Presider: Lei Xi, Southern University of Science and Technology, China

14:00-14:30	Optical imaging for photodynamic therapy dosimetry (Invited) Buhong Li Hainan University, China
14:30-15:00	Stimulated Raman scattering imaging reveals signatures of lipid metabolism in human diseases (Invited) Shuhua Yue Beihang University, China
15:00-15:30	Multimodality photoacoustic imaging: Progress in medical applications from microscopy to endoscopy (Invited) Sihua Yang South China Normal University, China
15:30-15:45	Break

Presider: Shuhua Yue, Beihang University, China

15:45-16:15	Photoacoustic microscopy of brain functions (Invited) Lei Xi Southern University of Science and Technology, China
16:15-16:45	Emerging Brillouin Imaging in Biophotonics (Invited) Francesca Palombo University of Exeter, United Kingdom
16:45-17:15	Autofluorescence-Raman Analysis of Surgical Margins During Mohs Micrographic Surgery (Invited) Loan Notingher University of Nottingham, United Kingdom
17:15-17:45	Re-scan Non-linear Optical Microscopy: Architecture, Advantages and Perspectives Stefan G. Stanciu University Politehnica of Bucharest, Romania

SC2. Laser and nonlinear optics

Online
November 22, 2022

Presider: Zhenda Xie, Nanjing University, China	
08:30-09:00	Recent progress and perspectives in antiresonant hollow-core fiber technologyge fiber technology (Invited) Pu Wang Beijing University of Technology, China
09:00-09:30	Fiber-based ultrafast mid-infrared source at unprecedented power levels (Invited) Wonkeun Chang Nanyang Technological University, Singapore
09:30-10:00	Strong second harmonic generation from bilayer graphene with symmetry breaking by molecular Adsorption (Invited) Xuetao Gan Northwestern Polytechnical University, China
10:00-10:15	Break
Presider: Pu Wang, Beijing University of Technology, China	
10:15-10:45	Development of nonlinear optical functionalities on lithium-niobate photonic integrated circuits (Invited) Qiang Lin University of Rochester, United States
10:45-11:15	Non-Hermitian optics in a single nonlinear microcavity (Invited) Wenjie Wan Shanghai Jiao Tong University, China
11:15-11:45	Low-noise frequency synthesis based on microcomb at a few gigahertz (Invited) Zhenda Xie Nanjing University, China

SC2. Laser and nonlinear optics

Online
November 23, 2022

Presider: Tian Jiang, National University of Defense Technology, China	
08:30-09:00	Recent development and future prospects of ~3 μm lasers based on sesquioxide ceramics (Invited) Deyuan Shen Jiangsu Normal University, China
09:00-09:30	All-fiber multifunction-integrated devices (Invited) Fei Xu Nanjing University, China
09:30-10:00	Passive phase demodulation in nonlinear frequency mixing (Invited) Yan Feng Shanghai Institute of Optics and Fine Mechanics,CAS, China
10:00-10:15	Break
Presider: Deyuan Shen, Jiangsu Normal University, China	
10:15-10:45	Ultrafast spectroscopic investigation of low-dimensional semiconductor cavity quantum electrodynamics (Invited) Tian Jiang National University of Defense Technology, China
10:45-11:15	Controlling the light-matter interactions in nanostructures for high efficient photonic applications (Invited) Zhangkai Zhou Sun Yat-sen University, China
11:15-11:45	Electrochromic WO_3 for nanophotoncis (Invited) Eric Hopmann University of Alberta, Canada
Presider: Heng Zhou, University of Electronic Science and Technology of China, China	
14:00-14:30	Recent progress in multicomponent photonic glass and fibers (Invited) Shifeng Zhou South China University of Technology, China
14:30-15:00	Structure evolution at the gate-tunable suspended graphene/electrolyte Interface (Invited) Chuanshan Tian Fudan University, China
15:00-15:30	High quality colloidal microlasers enabled by manipulating optical properties of 2D nanoplatelets and controlled assembly (Invited) Handong Sun Nanyang Technological University, Singapore
15:30-15:45	Break
Presider: Shifeng Zhou, South China University of Technology, China	
15:45-16:15	The generation and application of ultra-low noise Kerr soliton microcombs (Invited) Heng Zhou University of Electronic Science and Technology of China, China
16:15-16:45	Dissipative Kerr cavity solitons for frequency comb generation (Invited) Xiaoxiao Xue Tsinghua University, China
16:45-17:15	Deterministic switching soliton dynamics in dispersion-managed microresonator frequency combs (Invited) Wenting Wang Xiongan Institute of Innovation, CAS, China

SC3. Nanophotonics and optical computing

Online
November 22, 2022

Presider: Daoxin Dai, Zhejiang University, China	
08:30-09:00	Light-induced vacuum micromotors（Invited) Min Qiu Westlake University, China
09:00-09:30	Geometric Phase and Nonlinear Photonic Metasurfaces (Invited) Guixin Li Southern University of Science and Technology, China
09:30-10:00	Nonlinear Thouless Pumping (Invited) Fangwei Ye Shanghai Jiao Tong University, China
10:00-10:15	Break
Presider: Renmin Ma, Peking University, China	
10:15-10:45	Single-mode waveguide photon sieves (Invited) Qing Cao Shanghai University, China
10:45-11:15	Rational design of wide field-of-view flat optics (Invited) Juejun Hu Massachusetts Institute of Technology, United States
11:15-11:45	Elastic ice optical microfibers (Invited) Xin Guo Zhejiang University, China
11:45-12:15	Integrated lithium niobate electro-optic modulator with wavelength division and multiplexing (Invited) Zejie Yu Zhejiang University, China

SC3. Nanophotonics and optical computing

Online
November 23, 2022

Presider: Guohai Situ, Shanghai Institute of Optics and Fine Mechanics, CAS, China	
08:30-09:00	Diffractive Optical Networks & Computational Imaging Without a Computer (Invited) Aydogan Ozcan University of California, United States
09:00-09:30	Reconfigurable Optical Metamolecules and Metamaterials(Invited) Yuebing Zheng University of Texas at Austin, United States
09:30-10:00	Lasing Action of Topological Bound State in the Continuum: A New Approach Towards On-Chip Integrated Light Source (Invited) Chao Peng Peking University, China
10:00-10:15	Break
Presider: Chao Peng, Peking University, China	
10:15-10:45	Magic angle nanolasers and twisted lattice nanocavity (Invited) Renmin Ma Peking University, China
10:45-11:15	Optimize Performance of Diffractive Neural Network (DNN) by Controlling the Fresnel Number (Invited) Lei Shi Fudan University, China
11:15-11:45	Merging metamaterials with artificial intelligence（Invited) Hongsheng Chen Zhejiang University, China
Presider: Xiangping Li, Jinan University, China	
14:00-14:30	A way towards zero-spacing photonic integrated circuits (Invited) Yun Lai Nanjing University, China
14:30-15:00	Polarization- and angle-resolved cathodoluminescence spectroscopy for nanophotonics (Invited) Zheyu Fang Peking University, China
15:00-15:30	Generation and manipulation of structured beams (Invited) Yuanjie Yang University of Electronic Science and Technology of China, China
15:30-15:45	Break
Presider: Yuanjie Yang, University of Electronic Science and Technology of China	
15:45-16:15	Intrinsic Chiral BIC Meta-structures (Invited) Chengwei Qiu National University of Singapore, Singapore
16:15-16:45	Direct laser writing based multiplexed structural colors (Invited) Qifeng Ruan Harbin University of Technology, China
16:45-17:15	Metasurface chirality and polarization optics (Invited) Xiangping Li Jinan University, China

SC4. Sensing and imaging

Online
November 22, 2022

Presider:Qing Yang, Zhejiang University, China	
08:30-09:00	The soul of computational imaging（Invited） Xiaopeng Shao Xidian University, China
09:00-09:30	Efficient deep learning on low-power perception system（Invited） Guiguang Ding Tsinghua University, China
09:30-10:00	Three-dimensional imaging through, around, and inside scattering medium（Invited） Xiaohua Feng Zhejiang Lab, China
10:00-10:30	Digital adaptive optics for aberration-corrected 3D imaging（Invited） Jiamin Wu Tsinghua Univerisity, China
10:.30-10:45	Break
Presider: Baiou Guan, Jinan University, China	
10:45-11:15	Fiber-enhanced spectroscopic gas sensors（Invited） Wei Jin Hong Kong Polytechnic University,Hong Kong, China
11:15-11:45	Ultrafast distributed Brillouin optical fiber sensor based on optical chirp chain（Invited） Yongkang Dong Harbin Institute of Technology, China

SC4. Sensing and imaging

Online
November 23, 2022

Presider: Kebin Shi, Peking University, China	
08:30-09:00	Macro-scale 3D printing of glass with micro-scale 3D resolution（Invited） Ya Cheng East China Normal University, China
09:00-09:30	3D radial junction si nanowire structures for flexible photovoltaics and advanced Biomimetic Sensing Applications（Invited） Linwei Yu Nanjing University, China
09:30-10:00	Artificial neuromorphic sensors for intelligent perception application（Invited） Xiaojian Zhu Ningbo Institute of Materials Technology and Engineering, China
10:00-10:15	Break
Presider: Liangcai Cao, Tsinghua University, China	
10:15-10:45	High-sensitivity hyperspectral photoacoustic microscopy（Invited） Lidai Wang The City University of Hong Kong, Hong Kong, China
10:45-11:15	Single objective light sheet imaging by using axial-to-lateral signal mapping（Invited） Kebin Shi Peking University, China
11:15-11:45	Multi-composite super-resolution microscopy based on fluorescence fluctuations（Invited） Jiong Ma Fudan University, China
Presider: Chao Zuo, Nanjing University of Science and Technology, China	
13:40-14:00	Quest camera and LCOS-SLM for quantitative imaging and light modulation (Sponsor) Xin Qi Hamamatsu Photonics (China) Co.,Ltd.
14:00-14:30	Novel infrared photodetectors and their smart chips（Invited） Weida Hu Shanghai Institute of Technical Physics, CAS, China
14:30-15:00	Deep learning-based optical synthetic aperture imaging technology（Invited） Jianlin Zhao Northwestern Polytechnical University, China
15:00-15:15	Break
Presider: Weida Hu, Shanghai Institute of Technical Physics, CAS, China	
15:15-15:45	Brillouin-Kerr soliton and optomechanical optical microcombs in chip-based microresonators（Invited） Xiaoshun Jiang Nanjing University, China
15:45-16:15	Structured illumination using deep learning —— with applications to high-speed 3D surface imaging（Invited） Chao Zuo Nanjing University of Science and Technology, China
16:15-16:45	Graphene oxide metalens for diffraction limited imaging and particle nanotracking application（Invited） Xueyan Li Zhejiang Sci-Tech University, China

AP 2022 Poster Lists

SC1. Biophotonics

AP2022-2022-000041	Particle manipulation behind a turbid medium based on the intensity transmission matrix Kaige Liu1 ; Hengkang zhang[2] ; shanshan du[1] ; zeqi liu[1] ; bin zhang[3*] ; xing fu[1*] ; Qiang Liu[4*] 1.Tsinghua Unversity;2.Beijing Institute of Control Engineering;3.Beijing Institute of Electronic System Engineering; 4.Tsinghua University
AP2022-2022-000050	Autocorrelation Function Analysis of Rotational Dynamics of Plasmonic Gold Nanorods Yuanfang Sun[1] 1.Xiamen University
AP2022-2022-000051	SVM-based classification on AFM images of prostate cancer cells Hanxing Gao[1];Xiaoxia Si[1];Hongqin Yang[1];Yuhua Wang[1] 1.College of Photonic and Electronic Engineering, Fujian Normal University
AP2022-2022-000053	The surface nanostructure features of ovarian cancer cells by atomic force microscopy Xiaoxia Si[1];Hanxing Gao[1];Xiaoqiong Tang[1];Hongqin Yang[1];Yuhua Wang[1*] 1.College of Photonic and Electronic Engineering, Fujian Normal University
AP2022-2022-000054	Using single particle orientation and rotational tracking and deep learning to resolve the orientation of gold nanoparticles in the complex environment of living cells Dongliang Song[1] 1.Xiamen University
AP2022-2022-000057	Visualizing rotational behaviors of rod-like cargoes to assess the influences of proteins at different endocytosis stages by multimodal imaging Xin Zhang (张欣)[1] 1.Xiamen University
AP2022-2022-000063	Unsupervised learning network for noise reduction in optical-resolution photoacoustic microscopy Shuchong Peng[1];Kanggao Tang[1];Song Xianlin* 1.Nanchang University
AP2022-2022-000067	A novel volumetric fusion algorithm for optical-resolution photoacoustic microscopy based on 3D-SWT and joint weighted evaluation optimization Xianlin Song[1*];Sihang Li[1] 1.Nanchang University
AP2022-2022-000071	CellGAN: deep-learning-based virtual stimulated Raman cytology Tinghe Fang[1];Xun Chen[1];Zhouqiao Wu[2];Zhongwu Li[3];Ziyu Li[2];Shuhua Yue[1*] 1.Key Laboratory of Biomechanics and Mechanobiology (Beihang University), Ministry of Education, Institute of Medical Photonics, Beijing Advanced Innovation Center for Biomedical Engineering, School of Biological Science and Medical Engineering, Beihang University, Beijing, 100191, China.;2.Gastrointestinal Cancer Center, Key Laboratory of Carcinogenesis and Translational Research (Ministry of Education), Peking University Cancer Hospital & Institute, Beijing 100142; 3.Department of Pathology, Peking University Cancer Hospital & Institute, Beijing 100142
AP2022-2022-000091	Stimulated Raman Scattering Microscopy Uncovers Reduced Lipid Accumulation in Glioblastoma without MGMT Methylation Nana Wang[1];Jiejun Wang[2];Nan Ji[3*];Shuhua Yue[1*] 1.Institute of Medical Photonics, Beijing Advanced Innovation Center for Biomedical Engineering, School of Biological Science and Medical Engineering, Beihang University, Beijing, China;2.Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing, China;3.Department of Neurosurgery, Beijing Tiantan Hospital, Capital Medical University, Beijing,China
AP2022-2022-000118	Classification of skin cancer using hyperspectral microscopic imaging and machine learning Meijie Qi[1];Yujie Liu[1];Yanru Li[1];Lixin Liu[1*];Zhoufeng Zhang[2] 1.Xidian University;2.Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences
AP2022-2022-000130	Combined Acoustic-Optics Endoscopy System For Colorectal Cancer In APC-Immunodeficient Mouse Models Chen Zhuoquan[1];Kong Ruiming[1];Song Yuting[1];Dai Cuixia[2];Ma Teng[1*] 1.Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences; 2.College of sciences, Shanghai Institute of Technology
AP2022-2022-000131	Early Detection and dynamic monitor of Colitis-Associated Colorectal Cancer By Using Integrated OCT-US-NIRF Tri-modality Endoscopic Imaging System Kong Ruiming[1];Dai Cuixia[2];Wang Bing[1];Chen Zhuoquan[1];Song Yuting[1];Ma Teng[1] 1.Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences;2.College of sciences, Shanghai Institute of Technology
AP2022-2022-000134	Diagnosis of retinal diseases using the vision transformer model based on optical coherence tomography images Zenan Zhou[1];Chen Niu[1];Huanhuan Yu[1];Jiaqing Zhao[1];Yuchen Wang[1];Cuixia Dai[1*] 1.Shanghai Institute of Technology
AP2022-2022-000136	Analysis of fluorescence collection efficiency for fiber-optic scanning two-photon endomicroscopy lishuang feng[1*];conghgao wang[1] 1.School of Instrumentation and Optoelectronic Engineering,Beihang University
AP2022-2022-000142	Stimulated Raman scattering microscopy reveals aberrant triglycerides accumulation in lymphatic metastasis of papillary thyroid carcinoma Junjie Zeng[1];Shuhua Yue[2*];Jian Wang[3*];Guoliang Wu[3];Changjian Liu[3] 1.School of Biological Science and Medical Engineering, Beihang University;2.School of Biological and Medical Engineering, Beihang University.;3.Department of Head and Neck Surgery, National Cancer Center/National Clinical Research Center for Cancer/Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College

SC2. Laser and nonlinear optics

AP2022-2022-000022	Flat multi-wavelength cylindrical vector beam fiber laser by using a re-circulating frequency shifter loop with two external injections Jialang Zhang[1];Anting Wang[1*] 1.Department of Optics and Optical Engineering, University of Science and Technology of China
AP2022-2022-000035	Study on fabrication and nonlinear frequency conversion of micro/nano photonic devices based on the film lithium niobate on insulator Congliao Yan[1];Sheng Zhao[1];Shaoqian Wang[1];Sha Wang[1*] 1.Sichuan university
AP2022-2022-000036	Study on Performance of Multi-user MRR Laser Communication in Atmospheric Turbulence Fading Gaosi Li[1*] 1.Beijing Institute of Space Long March Vehicle
AP2022-2022-000047	1030 nm Multilayer Oxide Aperture VCSELs with 25 GHz Modulation Bandwidth and 40 Gb/s NRZ Transmission Wang Yanjing[1] 1.The State Key Laboratory of Luminescence and Application, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
AP2022-2022-000048	Optical characterization and morphology analysis of 3d polymer x-ray lens through confocal microscope Rilond Pattia Matital[1*];Danila Anatolievich Kolymagin[1];Denis Alexievich Shcherbakov[1];Dmytro Anatolievich Chubich[1]; Alexei Grigorievich Vitukhnovsky[1,2] 1.Moscow Institute of Physics and Technology;2.Lebedev Physical Institute, Russian Academy of Sciences
AP2022-2022-000072	The influence of light source linewidth on power spectrum of four light coherent mixing signal Jianying Ren[1*] 1.Beijing Institute of Tracking and Telecommunications Technology
AP2022-2022-000074	Generation of multi-band reconfigurable microwave waveforms based on dual-chirped fiber combs xiong wenhao[1] 1.Beijing University of Technology
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AP2022-2022-000099	High-gain free-electron laser with orbital angular momentum seeded by an x-ray regenerative amplifier Hao Sun[1,2];Chao Feng[3*];Yaozong Xiao[1,2];Bo Liu[3*] 1.Shanghai Institute of Applied Physics, Chinese Academy of Sciences;2.University of the Chinese Academy of Sciences; 3.Shanghai Advanced Research Institute, Chinese Academy of Sciences
AP2022-2022-000108	Transparent Realization of Rhombohedral PMN-PT single crystal and excellent electro-optical properties Yiyang Wen[1];He Chongjun[2*];Deng Chengguang[3] 1.Nanjing University of Aeronautics and Astronautics;2.Chongjun He,Associate Professor,Nanjing University of Aeronautics and Astronautics;3.Tsinghua University
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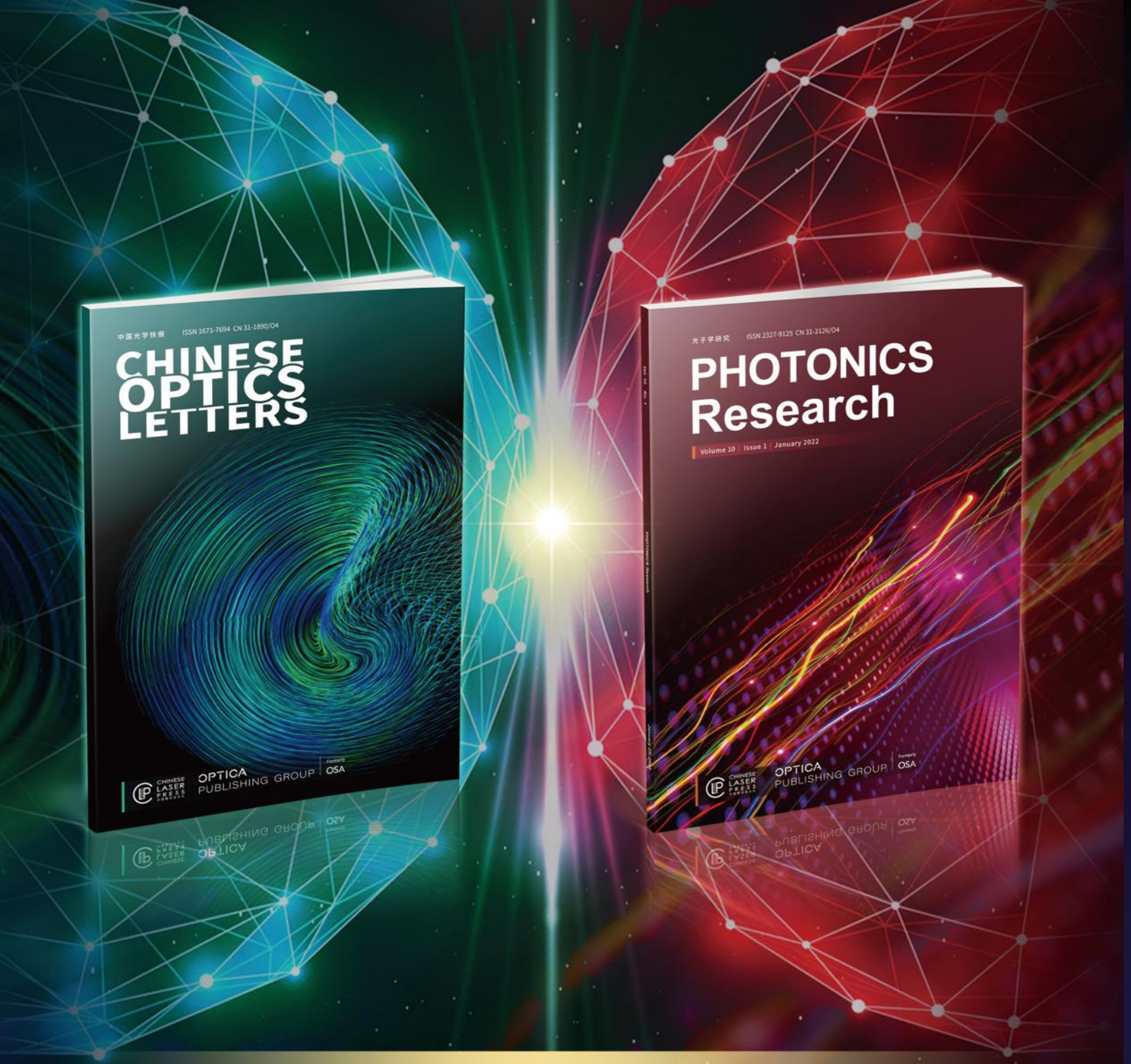

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集成电路是现代工业的基础。光刻机是集成电路制造的核心装备，其技术水平决定了集成电路的集成度。

几十年来，光刻机曝光波长从 436 nm 可见光波段减小到 193 nm 深紫外波段，再到目前最短的 13.5 nm 极紫外波段。投影物镜的数值孔径从初期的 0.28 增大到干式光刻机的 0.93，再到浸液式光刻机的 1.35。利用光学邻近效应校正、光源掩模联合优化、多重图形等分辨率增强技术，光刻工艺因子已突破理论极限。光刻机技术与光刻技术的不断进步，支撑着集成电路不断向更小技术节点发展。不断涌现的新技术、新工艺、新材料、新设备使得光刻技术水平不断提升，集成电路特征尺寸不断减小，目前已逼近尺寸微缩的物理极限。

为集中展示国内外光刻技术领域的最新研究进展，促进学术交流，《激光与光电子学进展》推出“光刻技术”专题。本专题以光刻机应用为牵引，汇聚了光学系统、工件台、掩模台、调焦调平等光刻机核心系统的最新研究进展，涵盖了计算光刻、光源、光刻胶等领域的最新研究成果。另外，对光刻机关键零部件与单元技术的最新研究进展也进行了选录。本专题还收录了定向自组装光刻等前瞻性技术的综述论文。最后，对光刻技术 60 年的发展历程进行了回顾。本专题的出版得到了领域内众多知名专家的积极响应，共收录 30 篇高质量论文。由于光刻技术涉及多学科、众多领域，考虑到读者范围广，30 篇论文均为综述文章。

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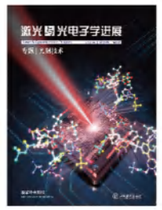

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作者：郭旭东，杨国强，李嫕
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从上世纪至今，光学显微技术为生命科学和医学研究带来了革命性的进步。每一次显微技术的突破，都给生物医学研究带来里程碑式的发展。近年来，生物医学光子学应运而生，其研究内容包括：在生命科学领域，在分子水平上对生物组织结构与功能进行监测与调控；在医学研究领域，以非侵入的方式，实现宏观与微观尺度分子水平的疾病探测、诊断和治疗。生物医学光子学近年的发展重点之一是将各种复杂的光学系统和技术更加深入地应用于生命健康的图像识别及多模态成像中，实现宏观与微观尺度的疾病探测、诊断与治疗。特别是在显微成像和活体小动物成像技术上，其成像性能越来越高，成像质量越来越好，成像速度越来越快。因此，生物医学光子显微与多模态成像技术的发展，在生命科学探索、临床医学诊断、治疗及功能监测等领域，都具有非常重要的应用前景。

为集中展示我国生物医学光子显微与多模态成像技术的最新研究进展，推动相关领域向纵深发展，《激光与光电子学进展》推出“生物医学光子显微与多模态成像”专题，汇聚了生物医学光子显微、生物光学传感技术、生物光学测量技术、跨模态与多模态成像技术4个主题方向的研究成果和最新进展。共收录31篇高质量论文，其中包括15篇特邀综述和11篇特邀研究论文。相信本专题的出版将为从事生物医学光子显微与多模态成像技术研究的相关人员提供很好的参考。

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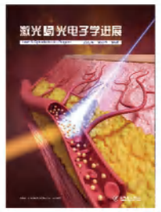

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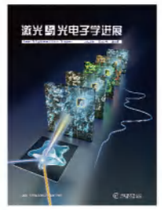

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特色专题

机器视觉技术及应用

59卷第14期 | 2022年7月

机器视觉是研究如何让机器“看”的科学与技术，涉及光学成像、机械控制、数字图像处理、模式识别、人工智能、计算机技术等诸多学科领域。机器视觉采用现代成像技术，从目标图像中提取信息，进行处理并加以理解，让机器在特定场合下拥有比人类视觉更强的视觉功能，更快更好地实现各种测量、检测、识别、定位与引导等任务。随着半导体、数据处理、人工智能等技术的发展，机器视觉技术正朝着成像多维化、决策智能化、系统模块化等方向发展。给机器装上慧眼，实现机器智能化，用机器换人是智能制造领域的必然发展趋势。

目前，中国正成为机器视觉发展最活跃的地区之一。为集中展示国内外机器视觉技术在原理、方法及应用等方面的最新研究进展，促进多学科的交叉融合，推动相关领域向纵深发展，《激光与光电子学进展》推出“机器视觉技术及应用”专题，共收录 29 篇高质量的论文，其中包括 11 篇特邀综述和 13 篇特邀研究论文，内容涵盖了视觉照明与成像技术、视觉系统建模与优化方法、视觉处理技术、视觉系统集成及应用等方面的研究成果与最新进展。

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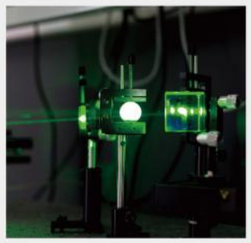
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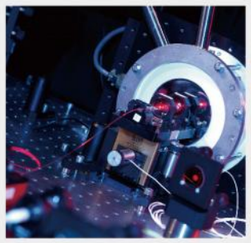
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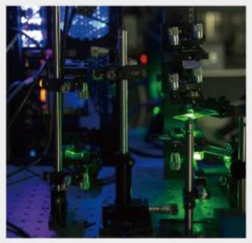
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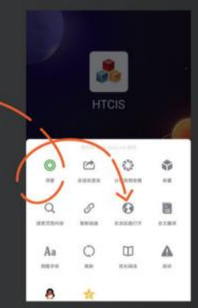

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