



由中国光学工程学会（CSOE）与国际光学工程学会（SPIE）共同主办的“2022 世界光子大会暨第 11 届国际应用光学与光子学技术交流大会（AOPC2022）”定于 2022 年 6 月 26-28 日在北京国家会议中心举办。AOPC2022 是中国光学工程学会年会，本届大会设有 21 个专题分会，规模近两千人。组委会力邀 350 余位国内外著名科学家、学术领军专家出席并做精彩报告。大会开幕式举办中国光学工程学会第七届科技创新奖颁奖盛典！

大会征文已开通，欢迎广大科研人员、研究生、博士生积极投稿参与会议交流！通过评审的稿件将在 SPIE 文集（EI 检索）正式发表，优秀稿件将推荐到 SCI 期刊和 EI 期刊发表。本届大会组委会将评选优秀青年论文奖，获奖作者颁发荣誉证书和奖励。

主办单位:

中国光学工程学会（CSOE）

SPIE

承办单位:

电子科技大学

微光夜视技术重点实验室

光电信息控制和安全技术重点实验室

清华大学电子系微纳光电子实验室

大会主席:

张广军（东南大学）

Byoung-ho Lee (Seoul National University, Korea)

征文议题:

Topic 1: Advanced Laser Materials and Laser Technology / 新型激光材料与激光器

专题主席:

黄永箴（中国科学院半导体研究所）

周 朴（国防科技大学）

李文雪（华东师范大学）

章 健（中国科学院上海硅酸盐研究所）

议题方向:

Crystals, glasses, ceramic and semiconductors gain materials

Nonlinear materials and optics

Fibers and waveguides
Short pulse and ultrashort pulse lasers
High peak power lasers
Fiber lasers
Beam combination
Laser micro and nano processing
New Laser applications
Other related technologies

Topic2: Advanced Laser Processing and Manufacturing / 激光先进制造与装备

专题主席:

林学春（中国科学院半导体研究所）
柳强（清华大学）

议题方向:

High power laser processing technology and equipment
Application and equipment of small and medium power laser precision machining
Precision machining of advanced laser materials, films and components
Additive manufacturing
Latest technology development of laser cleaning
Femtosecond laser processing technology and application

Topic3: Laser Transmission and Communication / 激光传输与通信技术

专题主席:

马晶（哈尔滨工业大学）

议题方向:

Precise, reliable and high gain transceiver optical antenna
Beam capture, alignment and tracking technology
Atmospheric channel impact compensation technology
Laser modulation and emission technology
High sensitivity and low code detection technology
Laser communication network technology
Platform vibration and attitude compensation technology
Space adaptability technology of device components
Laser link network topology and multiple access technology

Topic4: Laser Field Control and Beam Control / 激光光场调控和光束控制

专题主席

蔡阳健（山东师范大学）

议题方向:

Novel characteristics of laser field
Laser field control and Application
Laser beam transmission and quality control
Laser beam combination technology (coherent and incoherent)

Topic5: THz Technology and Applications / 太赫兹技术

议题方向:

Terahertz radiation technology
Terahertz detection and detection technology
Terahertz transmission technology
Terahertz regulation technology
Terahertz interaction with matter
Terahertz wireless communication
Terahertz imaging
Terahertz spectroscopy
Terahertz interdisciplinary research
Other related technologies

Topic6: Infrared Devices and Infrared Detection Technology / 红外器件与红外探测技术

专题主席:

龚海梅 (中科院上海技术物理研究所)
史泽林 (中科院沈阳自动化研究所)
卢进 (天津津航技术物理研究所)

议题方向:

Novel infrared and photo-electronic materials and manufacturing
Advances in shortwave, mid-wave and long-wave infrared detectors and FPAs
Novel infrared detector and technology
Controlling and integration of refrigerator
Infrared devices and microsystem
Infrared optical materials and manufacturing
Advanced Infrared optical system
Infrared detection and recognition
Novel combination of active and passive optical sensing
Space remote sensing and spectral imaging
Novel imaging reconnaissance and early warning
Low level light devices and applications
Information acquisition and signal processing technologies
Testing and evaluation of infrared imaging and detecting system
Industrial, public security, mechanical and other applications

Machine Vision and Internet of things and other applications

Machine Vision and automatic driving and other applications

Other related technologies

Topic7: Optoelectronic Devices and Integration / 光电子器件与集成

专题主席:

黄翊东 (清华大学)

议题方向:

Semiconductor lasers and LEDs

Light detection and devices

Silicon Photonics

New material platform for optoelectronics

Optoelectronic integration

Other related technologies

Topic8: Nano Photonics / 纳米光子学

专题主席:

黄翊东 (清华大学)

议题方向:

Nanostructures, nanomaterials, and their fundamental properties

Optoelectronic materials and devices

Micro/nano manufacturing and metrology

Plasmonics and meta-materials

Applications of nano photonics

Other related technologies

Topic9: Display Technology and Optical Storage / 先进显示技术与光存储

专题主席:

王涌天 (北京理工大学)

Byoungho Lee (Seoul National University, Korea)

议题方向:

Laser display

Laser and light sources

OLED

Optical memories for big data storage

Display technology and process

Optical components

Imaging technologies and devices

Image quality and human vision

Holographic storage and 3D displays technology

liquid Crystal display
QLED
TFT-LCD
Mini LED
Electronic paper display
Micro- LED displays
Emerging techniques

Topic10: Optical Display and Sensing in Augmented, Virtual, and Mixed Reality (AR, VR, MR) /增强、虚拟和混合现实（AR、VR、MR）中的光显示和光传感

议题方向：

VR/AR/MR Input Devices
Touch and Interactive Displa
Tracking and Sensing
Near-eye displays
Naked eye 3D displays
helmet mounted display
Vehicle Display
VR/AR/MR Computer Graphics
Distributed VR/AR/MR

Topic11: Optical Spectroscopy and Imaging / 光谱仪与光谱成像

专题主席：

赵慧洁（北京航空航天大学）
王跃明（中科院上海技术物理研究所）

议题方向：

Sensor design, development, and characterization
Performance evaluation and calibration of sensors and systems
Atmospheric modeling, compensation and application in environment monitoring
Spectral technologies and application in deep space and astronomy exploration
Target detection, classification and characterization method based on multi/hyperspectral imaging technology
Other related technologies

Topic12: Optical Sensing and Imaging Technology / 光电探测与成像技术

专题主席：

蒋亚东（电子科技大学）
吕群波（中国科学院空天信息创新研究院）
刘东（浙江大学）

张登伟（浙江大学）

议题方向：

Ultra-violet, visible and infrared sensing and imaging
Millimeter, sub-millimeter, and far-infrared detectors and instrumentation
Novel lidar technology
Environment characteristics of target and atmospheric transmission
Ocean optics and detection technology
Combination of active and passive optical sensing
Machine vision, automatic target detection, image processing & analysis
Other related technologies

Topic13: Novel Optical Design / 新体制光学设计

议题方向：

Current Developments in Lens Design
Novel Optical Systems, Methods, and Applications
Polymer Optics and Molded Glass Optics: Design, Fabrication, and Materials
Optical Modeling and Performance Predictions
Reflection, Scattering, and Diffraction from Surfaces
Laser Beam Shaping
Nonimaging Optics: Efficient Design for Illumination and Solar Concentration
Other related technologies

Topic14: Optics Ultra Precision Manufacturing and Testing / 超精密光学加工与检测技术

专题主席：

孔令豹（复旦大学）
张大伟（上海理工大学）

议题方向：

Ultra-precision cutting technology
Abrasive machining process
Optical and laser machining technology
Assist ultra-precision machining approaches
Measurement and characterization of complex geometries
Measurement of surface integrity and defects
Inspection of subsurface damage and material property
Sensors and uncertainties
Ultra-precision system integration and equipment development
Frontiers in ultra-precision and green manufacturing technology
Other related technologies

Topic15: Quantum Information Technology / 量子信息技术

专题主席：

王建宇（中科院上海分院）

专题共主席：

陆朝阳（中国科学技术大学）

尤立星（中国科学院上海微系统与信息技术研究所）

议题方向：

Quantum Computation and Simulation
Quantum Communication, Quantum Cryprography
Quantum Metrology, Quantum Sensing
Quantum Networks, Memory and Repeaters
Quantum Error Correction
Quantum Control and Engineering
Quantum Imaging
Quantum Information Theory
Quantum Information Applications in NISQ
Other related technologies

Topic16: Micro-optics and MOEMS / 微光学与微光机电系统

专题主席：

谢会开（北京理工大学）

王跃林（中科院上海微系统与信息技术研究所）

肖云峰（北京大学）

议题方向：

Advanced Fabrication Technologies for Micro/Nano Optics and Photonics
MOEMS and Miniaturized Systems
Emerging Digital Micromirror Device Based Systems and Applications
Microfluidics, BioMEMS, and Medical Microsystems
Adaptive Optics and Wavefront Control for Biological Systems

Topic17: Biomedical Optics / 生物医学光子学

专题主席：

魏勋斌（北京大学）

刘丽炜（深圳大学）

议题方向：

Biomedical optics components, products, instrumentation, and applications
Molecular imaging
Therapeutic lasers
Nano/biophotonics
Biosensors

Spectroscopic/microscopic imaging

Other related technologies

Topic18: Atmospheric and Environmental Optics / 大气与环境光学

专题主席:

刘建国（中科院合肥物质科学研究院）

议题方向:

Sensor design, development, and characterization

Performance evaluation and calibration of sensors and systems

Atmospheric modeling, compensation and application in environment monitoring

Spectral technologies and application in deep space and astronomy exploration

Target detection, classification and characterization method based on multi/hyperspectral imaging technology

Other related technologies

Topic19: Optical Information and Network / 光信息与光网络

专题主席:

刘德明（华中科技大学）

纪越峰（北京邮电大学）

唐雄燕（中国联通）

张成良（中国电信股份有限公司）

执行主席:

张杰（北京邮电大学）

议题方向:

Optical communications and networking

Big data in optical communications and networking

Optical and Photonic Metrology

Quantum Optics, Atomic Physics and Quantum Information

Submarine optical cable and communication, Ocean observation and remote sensing, Ocean engineering

Micro and Nanophotonics, and Light Trapping

Optical Communication Systems and Networks

Information security, optical information security

Optical fiber and optical cable

Optical Fiber and Waveguide Technologies

Semiconductor and Integrated Optical Devices

Silicon Photonics

Optical Signal Processing

Other related technologies

Topic20: Novel technologies and instruments for astronomical multi-band observations /

天文多波段探测新技术及仪器

专题主席:

朱永田 (中国科学院南京天文光学技术研究所)

薛随建 (中国科学院国家天文台)

专题共主席:

张紫阳 (西湖大学)

议题方向:

High-resolution spectroscopy and high-contrast imaging for astronomy

Millimeter, sub-millimeter, and far-infrared detectors and instrumentation for astronomy

High Energy, Optical, and infrared detectors and instrumentation for astronomy

Specialty optical fibers for astronomy

Advances in optical and mechanical technologies for telescopes and instrumentation

- ◇ Atmospheric compensation
- ◇ Materials, Manufacturing, Test and Metrology
- ◇ Coatings, Filters and Gratings

Application of micro-/nanophotonics in astronomy

Topic21: AI in Optics and Photonics / 人工智能在光学与光子学中的应用

专题主席:

罗海波 (中国科学院沈阳自动化研究所)

左超 (南京理工大学)

专题共主席:

邸江磊 (西北工业大学)

方璐 (清华大学)

斯科 (浙江大学)

议题方向:

Theories and technologies of artificial intelligence

- ◇ Learning theory
- ◇ Active learning
- ◇ Online learning
- ◇ Distributed AI
- ◇ Reinforcement learning
- ◇ Cost-Sensitive learning
- ◇ Evolutionary computation
- ◇ Transfer, adaptation, multi-task learning
- ◇ Semi-supervised/unsupervised learning
- ◇ Structured learning

- ◇ Other related technologies

Applications of artificial intelligence in optics and photonics


- ◇ Computational imaging with deep neural networks
- ◇ Artificial intelligence based optical sensing, and display
- ◇ Learning based optical signal processing
- ◇ Optical system design by machine learning
- ◇ Free space optical neural networks for classification
- ◇ Integrated photonics for artificial neural computing
- ◇ Photonic neuromorphic computing
- ◇ Machine-learning-based digital holography
- ◇ Optical neuron networks

发表须知:

会议论文由SPIE正式出版, EI核心收录。作者请登陆投稿网站先提交英文摘要(不少于500单词), 大会学术委员会审查后, 组委会用邮件给作者发录用通知。录用通知根据提交摘要的前后顺序发放。英文摘要截稿日期: **2022年3月31日(第一轮)**。

评审为优秀的摘要, 作者可按照组委会规定重新提交论文全文(中英文均可), 组委会协助推荐到指定SCI期刊或EI期刊复审。

英文摘要投递网址: <https://b2b.csoe.org.cn/submission/AOPC2021.html>

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支持期刊:

Photonix, Journal of Electronic Imaging (SCI), Journal of Applied Remote Sensing (SCI), Optical Engineering (SCI), Journal of Micro/Nanolithography, MEMS, and MOEMS (SCI), Photonic Sensors (SCI), Journal of Infrared and Millimeter Waves (SCI), Infrared and Laser Engineering(Ei), Acta Photonica Sinica(Ei), International Journal of Extreme Manufacturing, Study on Optical Communications, Journal of Terahertz Science and Electronic Information Technology, SPIE Proceedings(Ei), etc.

会议日程:

6月26日, 会议报到

6月27日上午, AOPC2021大会开幕式+AOPC2021大会主旨报告

6月27日下午-6月28日全天, 专题特邀专家报告、口头报告、海报交流。

会议地点: 北京国家会议中心(北京市朝阳区天辰东路7号)

同期活动: 2022第十四届光电子·中国博览会

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