9th Applied Optics and Photonics China

https://www.csoe.org.cn/meeting/AOPC2020/
27-29 June 2020  CNCC, Beijing, China

9th Applied Optics and Photonics China (AOPC 2020) will be held from 27 (registration) to 29 June 2020 in Beijing China. Participating in AOPC 2020, you will see the latest researches and developments in the field of optics and photonics technology and application. On behalf of the Organizing Committee, we warmly invite optics and photonics scientists, engineers, technicians, entrepreneurs, graduate students, and all interested people, to attend this unique and innovative conference.

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Topics:

**Topic1: Advanced Laser Materials and Laser Technology**
- 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**
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

**Topic 3: Laser Transmission and Communication**
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

**Topic 4: THz Technology and Applications**
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

**Topic 5: Infrared and Photo-electronic Device**
Novel infrared and photo-electronic materials
Advances in shortwave, mid-wave and long-wave infrared detectors and FPAs
Novel laser radar detector and technology
Combination of active and passive optical sensing
Information acquisition and signal processing technologies
Testing and evaluation of infrared imaging and detecting system
Cryogenic package, cooler, and optics technology
Infrared Cameras and systems
Industrial, public security, mechanical and other applications
Other related technologies

**Topic 6: Optoelectronic Devices and Integration**
Semiconductor lasers and LEDs
Light detection and devices
Silicon Photonics
New material platform for optoelectronics
Optoelectronic integration
Other related technologies

**Topic 7: Nano Photonics**
- 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

**Topic 8: Display Technology and Optical Storage**
- Optical memories for big data storage
- Display technology and process
- Laser and light sources
- Optical components
- Imaging technologies and devices
- Image quality and human vision
- Holographic storage and 3D displays technology
- Laser display
- VR/AR display technology
- Innovative materials for advanced photonic applications
- Emerging techniques
- Systems and applications
- Other related technologies

**Topic 9: Optical Display and Sensing in Augmented, Virtual, and Mixed Reality (AR, VR, MR)**
- Networks, Applications and Access
- Photonic Systems and Subsystems
- Optical Components, Devices and Fiber
  - Special optical fiber, fiber optic gyro technology
- Optical communications and networking
- 5G technology
- Big data in optical communications and networking
- Optical fiber and optical cable
- Other related technologies

**Topic 10: Optical Spectroscopy and Imaging**
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

**Topic 11: Optical Sensing and Imaging Technology**
- 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

**Topic 12: Novel Optical Design**
- 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

**Topic 13: Optics Ultra Precision Manufacturing and Testing**
- 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
**Topic 14: Quantum Information Technology**

- Fundamental Quantum Tests
- Quantum Optics
- Quantum Cryprography
- Free-Space Quantum Communications
- Quantum Tele-Communications
- Quantum Memory and Repeaters
- Single-Photon Sources
- Integrated Quantum Photonics
- Single-Photon Detection
- Quantum Imaging and Metrology
- Quantum Simulation and Computing
- Other related technologies

**Topic 15: Photonic MEMS/NEMS, THz MEMS and Metamaterials**

- Micro-optics and MOEMS: Theory, Modeling, Design, Materials, Fabrication, Measurement and Sensing
- Optical MEMS/NEMS and Miniaturized Systems
- Optical MEMS for optical telecommunications, VOAs, WSS, and OXCs
- Optical MEMS for LiDAR and 3D sensing
- Optical MEMS for VR/AR
- Microfluidics, BioMEMS, and Medical Microsystems with Photonics
- Mid IR metasurface and applications
- THz MEMS and applications
- Metamaterials for 5G/6G Applications
- Tunable metamaterials and metamaterials for sensing
- Actuators for Photonic MEMS/NEMS, THz MEMS and Metamaterials
- Devices: Passive Devices, Dynamic and Functional Devices, EO/OE and Active Devices
- Advanced Packaging and 3D Printing Technology – Heterogeneous Integration, Surface Activated Bonding (SAB), Low-Temperature Bonding, 2.5/3D, TSV, Substrates/Interposers, Micro-optics on Wafers/Chips
- Wearable Photonics
- Photonics based IoT Technology

**Topic 16: Biomedical Optics**

- Biomedical optics components, products, instrumentation, and applications
- Molecular imaging
- Therapeutic lasers
- Nano/biophotonics
- Biosensors
Spectroscopic/microscopic imaging
Other related technologies

**Topic 17: Atmospheric and Environmental Optics**

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

**Topic 18: Optical Information and Network**

Novel optical fiber sensor and system
Special optical fiber, fiber optic gyro technology
Optical communications and networking
5G technology
Big data in optical communications and networking
Optical fiber and optical cable
Optical and Photonic Metrology
Quantum Optics, Atomic Physics and Quantum Information
Micro and Nanophotronics, and Light Trapping
Optical Communication Systems and Networks
Optical Fiber and Waveguide Technologies
Semiconductor and Integrated Optical Devices
Silicon Photonics
Optical Signal Processing
Other related technologies

**Topic 19: Space Optics, Telescopes and Instrumentation**

High resolution earth imaging, geolocation and mapping
Nano and cube satellites
Weather satellites
Space telescopes and instrumentation: ultraviolet, optical, infrared, and millimeter wave
Optical and IR interferometry and imaging
Adaptive optics systems
High-energy, optical, and infrared detectors in astronomy
Astrophotonics
Novel optical fibers in telescope systems
Other related technologies
**Topic 20: AI in Optics and Photonics**

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

- Feature Extraction/Selection/Construction
- Super-resolution Imaging
- Image Enhancement
- Automatic Target Recognition/ Detection
- Target Tracking
- Multi-source Information Fusion
- Motion Control
- Path Planning
- Biometrics
- Others

**Submission:**

Abstracts Submission Deadline: 6 May 2020

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