



ESIT 2026

Earth & Space: from Infrared to Terahertz International Conference 2026

Sept. 18 - 20 / Shanghai, China

Hosts

Fudan University

Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Executive Organizers

Institute of Optoelectronics, Fudan University

State Key Laboratory of Infrared Physics, Shanghai Institute of Technical Physics, CAS



Conference Schedule

Plan	Sep.18	Sep.19	Sep.20	Location
Registration	09:00-19:00	08:00-18:00	08:00-15:00	Lobby, 1F 一楼 大堂
Opening Ceremony		08:30-09:00		Ya Mei Ballroom, 3F 三楼 亚美宴会厅
Plenary Session		09:00-12:00		Ya Mei Ballroom, 3F 三楼 亚美宴会厅
Track 1: Infrared physics and devices		13:30-17:15	08:30-17:00	Ya Mei Ballroom 2, 3F 三楼 亚美 2
Track 2: Terahertz and Millimeter Waves		13:30-17:20	08:30-14:30	Ya Mei Ballroom 1, 3F 三楼 亚美 1
Track 3: Remote Sensing and Space Exploration		13:30-16:45	08:30-15:05	Noah Room 6, 3F 三楼 诺亚会议室 6
Track 4: Digital Earth and Intelligent Cognition		13:30-16:55	08:30-15:35	Noah Room 3, 3F 三楼 诺亚会议室 3
Track 5: Infrared and Interdisciplinary Fields		13:30-17:15	08:30-16:50	Ya Mei Ballroom 3, 3F 三楼 亚美 3
Young Scientists Forum		13:30-16:25		Noah Room 1+2, 2F 2楼 诺亚会议室 1+2
Poster Session		17:00-18:30		Pre-function Area, 3F 三楼 会场序厅
红外光电技术产业论坛	13:30-18:00			Noah Room 5, 3F 三楼 诺亚会议室 5
《红外与毫米波学报》第九届编委会第一次工作会议暨改版发布会	13:30-15:30			Noah Room 3, 3F 三楼 诺亚会议室 3
Banquet & Awards		18:30-20:30		Ya Mei Ballroom, 3F 三楼 亚美宴会厅



Opening Ceremony & Plenary Talk

Sep.19 Saturday, Ya Mei Ballroom, 3F

08:30-09:00

Opening Ceremony & Launch of the MSDE Early Warning Research Platform

Presider: Jianlu Wang, Fudan University

09:00-09:40

Plenary Talk

From Visible to Terahertz Detection: Device Innovation Driven by Laser Precision Manufacturing

Hongbo Sun, Tsinghua University

09:40-10:20

Plenary Talk

Cascade structures for single and multi-pixels IR detectors

Piotr Martyniuk, Military University of Technology

10:20-10:40

Coffee Break

Presider: Antoni Rogalski, Military University of Technology

10:40-11:20

Plenary Talk

Miniaturised Computational Light Detection

Tawfique Hasan, University of Cambridge

11:20-12:00

Plenary Talk

Metasurfaces for Controlling Light: From Interfacial Phases to Flat Optics

Lei Zhou, Fudan University

12:00-13:30

Lunch



ESIT2026 Young Scientists Forum

Committee

Chairs:

Weida Hu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Junhao Chu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Shengli Sun, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Wei Lu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Jiang Tang, Huazhong University of Science and Technology

Chunlai Li, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Kai Zhang, Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences

Haiding Sun, University of Science and Technology of China

Xiaopeng Hao, Tsinghua University

Qiming Zhang, University of Shanghai for Science and Technology

Junpeng Lu, Southeast University

Zhenhua Ni, Southeast University

Jianlu Wang, Fudan University

Time: September 19, 2026, Saturday, 13:30–16:25

Venue: Noah Meeting Room 1+2, 2nd Floor, Crowne Plaza Shanghai Noah Square, Putuo District, Shanghai

Program

Presider: Weida Hu

Time	Agenda
13:30-13:40	Opening Remarks
13:40-13:50	Infrared Astronomical Detectors for Deep Space Exploration Peng Wang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
13:50-14:00	CWafer-Scale Fabrication and Automated Integration of p-Type Semiconductors Bei Zhao, Southeast University
14:00-14:10	Quantum Geometry as a New Resource for Infrared and Terahertz Photocurrents Anyuan Gao, Shanghai Jiao Tong University



14:10-14:20	Optical Enhancement and Sensing in Two-Dimensional Optoelectronics Li Gao, Nanjing University of Posts and Telecommunications
14:20-14:30	Multidimensional Intelligent Infrared Photodetectors Hangyu Xu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
14:30-14:40	Polarization Sensing and Enhanced Photodetection in Low-Dimensional Semiconductors Ziqi Zhou, Institute of Semiconductors, Chinese Academy of Sciences
14:40-14:50	Infrared optical comb spectroscopy and imaging Ming Yan, East China Normal University
14:50-15:00	Weak-Signal Infrared Detectors and Their Intelligent Remote-Sensing Applications Research Fang Wang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
15:00-15:15	Coffee Break
15:15-15:25	Non-Pixelated Intelligent Sensing Based on Position-Sensitive Detectors Wenhui Wang, Southeast University
15:25-15:35	Encapsulation epitaxy of 2D superconductors for quantum circuits Kenan Zhang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
15:35-15:45	Space Photovoltaic Device Hong Zhang, Fudan University
15:45-15:55	Monolithically Integrated SWIR Imaging Chip Boxiang Song, Huazhong University of Science and Technology
15:55-16:05	Terahertz programmable and intelligent metasurface Jingbo Wu, Nanjing University
16:05-16:15	Narrow-bandgap van der Waals semiconductor and their infrared light-emitting devices Junyong Wang, Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), Chinese Academy of Sciences
16:15-16:25	Optical Neuromodulation and Infrared Vision Zhen Wang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

Tips: Presentation: 7 mins, Q&A: 3 mins

Track 1: Infrared physics and devices

Sep.19 Saturday, Ya Mei Ballroom 2, 3F (三楼 亚美 2)

Presider: Chunlai Xue, Institute of Semiconductors, Chinese Academy of Sciences

13:30-13:55	Keynote Talk Recent Progress in Light-Matter Interactions in 2D Materials from Visible to THz Jianbin Xu, The Chinese University of Hong Kong
13:55-14:20	Keynote Talk Second Harmonic Generation From Centrosymmetric Graphene Induced by Interfacial Charge Doping Xuetao Gan, Northwestern Polytechnical University
14:20-14:35	Invited Talk Research on High Performance and Multifunctional Infrared Detection Technology Using Organic Materials Jun Wang, University of Electronic Science and Technology of China
14:35-14:50	Invited Talk Crosstalk study on InGaAs/InP short wavelength single-photon focal plane arrays Yanli Shi, Yunnan University
14:50-15:05	Invited Talk AI-native robotic vision enabled by in-sensor computing Changsoon Choi, Sungkyunkwan University
15:05-15:20	Coffee Break
Presider: Jianbin Xu, The Chinese University of Hong Kong	
15:20-15:45	Keynote Talk Silicon-Based Group IV Thin Film for Extended-Wavelength Infrared Photonics Chunlai Xue, Institute of Semiconductors, Chinese Academy of Sciences
15:45-16:10	Keynote Talk 2D Polarization-Sensitive Photodetectors Zhongming Wei, Institute of Semiconductors, Chinese Academy of Sciences
16:10-16:35	Keynote Talk Van der Waals Hetero-integration for Infrared Photodetection Junpeng Lv, Southeast University
16:35-16:50	Invited Talk Low-Dimensional Antimonide and Optoelectronic Devices Zaixing Yang, Shandong University



16:50-17:05	Invited Talk Direct tensor processing with coherent light Yufeng Zhang, Aalto University
17:05-17:15	Oral Talk Solid-state Transparent Infrared Electrochromic Device Based on Aluminum-doped Zinc Oxide Nanocrystals Xu Zheng, National University of Defense Technology
17:00-18:30	Poster Session
18:30-20:30	Banquet

Track 1: Infrared physics and devices

Sep.20 Sunday, Ya Mei Ballroom 2, 3F (三楼 亚美 2)

Presider: Kai Wei, Zhejiang University

08:30-08:55	Keynote Talk Room temperature terahertz detector integrated with 2D materials Kai Zhang, Suzhou Institute of Nano-Tech and Nano-Bionics,CAS
08:55-09:20	Keynote Talk Hybrid integration of superconducting nanowire single photon detectors Qingyuan Zhao, Nanjing University
09:20-09:35	Invited Talk III-V Semiconductor Based Nanostructures for High-Performance Infrared Photodetection and Imaging Ziyuan Li, Beijing Institute of Technology
09:35-09:50	Invited Talk Broadband absorption limit of terahertz and infrared waves by nanofilms and its optoelectronic detection applications Tao Zhao, University of Electronic Science and Technology of China
09:50-10:05	Invited Talk Quantum Dot-based Intelligent Sensing and Imaging Systems Kun Ba, Shanghai University
10:05-10:20	Invited Talk Infrared Upconversion Photodetector Based on Colloidal Quantum Dot Wenjia Zhou, ShanghaiTech University
10:20-10:30	Oral Talk Encapsulation and beyond encapsulation of 2D semiconductors Guichen Teng, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
10:30-10:45	Coffee Break
Presider: Qingyuan Zhao, Nanjing University	
10:45-11:10	Keynote Talk Advances in Optical Phased Arrays for Long-Range All-Solid-State Integrated Lidar and Communication Kai Wei, Zhejiang University



11:10-11:35	Keynote Talk Colloidal Quantum Dot Superlattice for Infrared Photodetectors and Light Emitting Diode Zhijun Ning, ShanghaiTech University
11:35-11:50	Invited Talk Research Progress of HgCdTe Two-color Detectors at Kunming Institute of Physics Gang Qin, Kunming Institute of Physics
11:50-12:05	Invited Talk Nonlinear Hall Responses in CsV_3Sb_5 toward Wireless Rectification Shanshan Liu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
12:05-12:20	Invited Talk InP nanostructures and their optoelectronic devices Xutao Zhang, Northwestern Polytechnical University
12:20-12:30	Oral Talk Mid-Infrared Fluoride Glass Optical Fibers and Devices Changjun Xu, Northeast Normal University
12:30-13:30	Lunch

Track 1: Infrared physics and devices

Sep.20 Sunday, Ya Mei Ballroom 2, 3F (三楼 亚美 2)

Presider: Junpeng Lv, Southeast University

13:30-13:55	Keynote Talk TBA Wenfu Zhang, Xi'an Institute of Optics and Precision Mechanics
13:55-14:20	Keynote Talk TBA Jiang Tang, Huazhong University of Science and Technology
14:20-14:35	Invited Talk Reversible Switching for Mid-Wave and Long-Wave Infrared Dual-Band I Menglu Chen, Beijing Institute of Technology
14:35-14:50	Invited Talk Manipulation of Carrier Dynamics in Narrow-Bandgap Semiconductors and Their Optoelectronic Devices Qisheng Wang, Nanchang University
14:50-15:05	Invited Talk Broadband Infrared Photodetection and Emerging Optoelectronic Devices for Integrated Sensing and Computing Hai Huang, Fudan University
15:05-15:15	Oral Talk Dual-band Colloidal Quantum Dot Focal Plane Array Yunxiang Di, Fudan University
15:15-15:30	Coffee Break
Presider: Menglu Chen, Beijing Institute of Technology	
15:30-15:55	Keynote Talk Two Dimensional Semiconductors based Broadband Photodetector for Neural Network Recognition Zhigao Hu, East China Normal University
15:55-16:10	Invited Talk T2SL technology developments in MWIR band operating at high operating temperature Donghai Wu, Institute of Semiconductors, Chinese Academy of Sciences



16:10-16:25	Invited Talk Mid-infrared single-photon upconversion spectroscopy based on temporal-spectral E Wu, East China Normal University
16:25-16:40	Invited Talk Infrared Visualization: From Monochromatic to Full-Color Upconversion Ge Mu, Beijing Institute of Technology
16:40-16:50	Oral Talk Band-Engineered Novel Blackbody-Sensitive vdW Infrared Detectors Runze Sun, Hangzhou Institute for Advanced Study, UCAS
16:50-17:00	Oral Talk High-quality mid-wave infrared HgCdSe grown on GaSb substrates with molecular beam epitaxy Zekai Zhang, Jiangnan University



Track 2: Terahertz and Millimeter Waves

Sep.19 Saturday, Ya Mei Ballroom 1, 3F (三楼 亚美 1)

Presider: Yiming Zhu, University of Shanghai for Science and Technology
Dongwen Zhang, National University of Defense Technology

13:30-13:55	Keynote Talk Terahertz Wavefront Engineering with Active Metasurfaces Yan Zhang, Capital Normal University
13:55-14:20	Keynote Talk Quantum Cascade Lasers: Research Progress and Application Prospects Junqi Liu, Ocean University of China
14:20-14:35	Invited Talk Surface-Emitting THz Quantum Cascade Lasers via Valley-Edge Topological Cavities Qi Qin, Shenzhen University
14:35-14:50	Invited Talk Dynamic terahertz beam manipulation for communication and imaging applications Jierong Cheng, Nankai University
14:50-15:05	Invited Talk Research on High-Performance and High-Efficiency Photonic Terahertz Sensing and Communication Integrated System Min Zhu, Southeast University
15:05-15:20	Invited Talk Reconfigurable Terahertz Diffractive Spiral Zone Plates from Patterned Carbon Nanotube Films on Stretchable Elastomers for OAM and Focal Control Nikolay Petrov, Harbin Institute of Technology/ITMO University
15:20-15:30	Oral Talk A scalable platform for high-cooperativity and multi-mode ultrastrong plasmon-phonon coupling Li Yu, Shanghai Institute of Technical Physics Chinese Academy of Sciences
15:30-15:45	Coffee Break
Presider: Yan Zhang, Capital Normal University Junqi Liu, Ocean University of China	
15:45-16:10	Keynote Talk Terahertz Intelligent Diffractive Devices and Their Applications in Next-Generation Communications Yiming Zhu, University of Shanghai for Science and Technology

16:10-16:35	Keynote Talk Weak Temperature Dependence of Electron-Ion Coupling in Warm Dense Gold from Single-Shot Terahertz Time-Domain Spectroscopy Dongwen Zhang, National University of Defense Technology
16:35-16:50	Keynote Talk Research on thin-film-based micro-nano photonic devices Shaowei Wang, East China Normal University
16:50-17:05	Invited Talk Terahertz surface-emitting photonic devices for vortex beam generations and wireless communications Song Han, Zhejiang University
17:05-17:20	Invited Talk Terahertz heterogeneous integrated photonic devices Xuecou Tu, Nanjing University
17:00-18:30	Poster Session
18:30-20:30	Banquet



Track 2: Terahertz and Millimeter Waves

Sep.20 Sunday, Ya Mei Ballroom 1, 3F (三楼 亚美 1)

Presider: Hai Zhang, Harbin Institute of Technology
Huabin Wang, Chongqing Institute of Intelligence

08:30-08:55	Keynote Talk High-Speed Terahertz Direct Modulation and Indoor Omnidirectional High-Speed Information Hub Technologies Yaxin Zhang, University of Electronic Science and Technology of China
08:55-09:20	Keynote Talk Terahertz photoacoustics and applications Zhen Tian, Tianjin University
09:20-09:35	Invited Talk Complex structured light manipulations enabled by metasurfaces and metasystems Shulin Sun, Fudan University
09:35-09:50	Invited Talk Combined Resonant Tunneling and Rate Equation Model for Room Temperature THz Quantum Cascade Lasers Feihu Wang, Quantum Science Center of Guangdong-Hong Kong-Macao Greater Bay Area
09:50-10:05	Invited Talk Quantum-Geometry Effect-for-Infrared and Terahertz Optoelectronics Lin Wang, Shanghai Institute of Technical Physics
10:05-10:20	Invited Talk Broadband Terahertz Comb Spectroscopy and Applications Min Li, University of Shanghai for Science and Technology
10:20-10:30	Oral Talk Transient Chirp Dynamics in Terahertz Quantum Cascade Lasers Xianglong Bi, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences
10:30-10:45	Coffee Break
Presider: Zhen Tian, Tianjin University Shulin Sun, Fudan University	
10:45-11:10	Keynote Talk Three-Dimensional Wide-Bandwidth Quantum Energy Truncation Terahertz Coherence Tomography Hai Zhang, Harbin Institute of Technology



11:10-11:25	Invited Talk Terahertz bio-detection of single protein molecules Huabin Wang, Chongqing Institute of Intelligence
11:25-11:40	Invited Talk Recent development of room temperature terahertz sources based on difference-frequency generation from mid-IR QCLs Quanyong Lu, Beijing Academy of Quantum Information Sciences
11:40-11:55	Invited Talk Design and Application of Carbon Nanotube Terahertz Metasurface Sensors for Trace Substance Detection Yue Wang, Xi'an University of Technology
11:55-12:10	Invited Talk Terahertz semiconductor laser chaos Binbin Liu, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences
12:10-13:30	Lunch



Track 2: Terahertz and Millimeter Waves

Sep.20 Sunday, Ya Mei Ballroom 1, 3F (三楼 亚美 1)

Presider: Min Li, University of Shanghai for Science and Technology

13:30-13:45	Invited Talk Optoelectronic Devices for Millimeter-Wave & Terahertz Generation and Detection Feiliang Chen, University of Electronic Science and Technology of China
13:45-14:00	Invited Talk On-Chip Light Field Manipulation with Metasurfaces: From Surface Waves to Vector Optical Fields Zhuo Wang, Fudan University
14:00-14:10	Oral Talk Multifunctional Vectorial Optical Field Generation with on-chip Metasurface Shuai Du, Fudan University
14:10-14:20	Oral Talk Millimeter-Wave/Sub-Terahertz Metadevices and Circuit Design: Progress and Perspectives LePeng Zhang, Southeast University
14:20-14:30	Oral Talk Quantum-Geometry-Enabled Terahertz Rectification in the Weyl Semimetal TaP Wenqi Mo, Hangzhou Institute for Advanced Study, UCAS



Track 3: Remote Sensing and Space Exploration

Sep.19 Saturday, Noah Room 6, 3F (三楼 诺亚会议室 6)

Presider: Fengming Hu, Fudan University

13:30-13:55	Keynote Talk Research progress of radiance temperature standard of benchmark infrared remote sensing Xiaopeng Hao, Tsinghua University
13:55-14:10	Invited Talk Quartz-enhanced laser spectroscopy gas sensing technology Yufei Ma, Harbin Institute of Technology
14:10-14:25	Invited Talk Paradigm Exploration for Infrared Hyperspectral Imaging Instruments Chunlai Li, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
14:25-14:40	Invited Talk On-Orbit Radiometric Calibration and Radiometric Reference Transfer of Satellite Infrared Instruments Using the Moon Yunzhao Wu, Purple Mountain Observatory, Chinese Academy of Sciences
14:40-14:55	Invited Talk High-Performance Optical Fiber Distributed Acoustic Sensor (DAS) Bin Pan, Nankai University
14:55-15:05	Oral Talk Scalable Multi-Pixel Tunable-Tc NbN MKIDs at 4 K: Enabling Cost-Effective Terahertz Detection for Remote Sensing, Space Exploration and Quantum Photonics Yao Ting, Gusu Laboratory of Materials/Suzhou Rysview Terahertz Technology Co., Ltd
15:05-15:20	Coffee Break
Presider: Yunzhao Wu, Purple Mountain Observatory, Chinese Academy of Sciences	
15:20-15:35	Invited Talk Recursive 3D Phase Unwrapping: Towards Weak Prior Model in Multi-temporal SAR Interferometry Fengming Hu, Fudan University
15:35-15:50	Invited Talk Intelligent perception of infrared images Ruiheng Zhang, Beijing Institute of Technology



15:50-16:05	Invited Talk High-Performance Optical Fiber Distributed Acoustic Sensor (DAS) Jun He, Shenzhen University
16:05-16:20	Invited Talk TBA Ping Zhu, Shenzhen University
16:20-16:35	Invited Talk Tianwen-2 mission: From laboratory to remote sensing observations Pengfei Zhang, Institute of Geochemistry, Chinese Academy of Sciences
16:35-16:45	Oral Talk Spectral imaging for the outer solar system: Missions, instruments and current challenges Yizhi Du, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
17:00-18:30	Poster Session
18:30-20:30	Banquet



Track 3: Remote Sensing and Space Exploration

Sep.20 Sunday, Noah Room 6, 3F (三楼 诺亚会议室 6)

Presider: Kemi Xu, Beijing Institute of Technology

08:30-08:55	Keynote Talk Compact, Highly Reliable, Radiation-Tolerant Fiber Optic Gyroscopes for Spacecraft Ningfang Song, Beihang University
08:55-09:10	Invited Talk A 500-600 GHz Spectrometer for Deep Space Exploration Haotian Zhu, National Space Science Center, the Chinese Academy of Sciences
09:10-09:25	Invited Talk Imaging Techniques and Future Application Developments of the CHASE (Xihe) Solar Imaging Spectrometer Qiang Liu, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
09:25-09:40	Invited Talk Intelligent Infrared Perception from Image Restoration to Small Target Detection and RGB-T Tracking Hanlin Qin, Xidian University
09:40-09:50	Oral Talk From Infrared to Radio waves in the Environmental Domain Simona Niculescu, University of Brest/Institut Universitaire Français (IUF)
09:50-10:00	Oral Talk Identification of Potential Extraterrestrial Materials and Endmember Inversion Based on 266nm Deep-Ultraviolet Raman Spectroscopy Haotian Xu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
10:00-10:15	Coffee Break
Presider: Kemi Xu, Beijing Institute of Technology	
10:15-10:30	Invited Talk Improving LST monitoring from space: conceptual design of a multi-angle thermal infrared satellite sensor Biao Cao, Beijing Normal University
10:30-10:45	Invited Talk Surface Chemical Engineering and Extreme-Environment Protection for Spacecraft Songtao Lu, Harbin Institute of Technology



10:45-11:00	Invited Talk Infrared Astronomy: Advances in Detectors, Observations, and Precision Measurement Zhuoyue Hu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
11:00-11:10	Oral Talk Lunar SAR-to-Optical Image Translation for Permanently Shadowed Region Exploration Tong Xia, Fudan University
11:10-11:20	Oral Talk Martian Geomorphic Feature Mapping with a Multi-Granular Dynamic Aggregation Transformer Yonggang Xiong, Tongji University
11:30-13:30	Lunch



Track 3: Remote Sensing and Space Exploration

Sep.20 Sunday, Noah Room 6, 3F (三楼 诺亚会议室 6)

Presider: Luning Li, Shanghai Institute of Technical Physics, Chinese Academy of Sciences

13:30-13:55	Keynote Talk Single photon & single-photon detector and applications Kemi Xu, Beijing Institute of Technology
13:55-14:10	Invited Talk Alternating Multi-scale Stochastic Differential Equations for Accelerated Inverse Problem Solving Weiwen Wu, Sun Yat-sen University
14:10-14:25	Invited Talk Embodied Intelligence in Unstructured Environments Weiyang Xie, Xidian University
14:25-14:35	Oral Talk Image Deblurring via Frequency Learning Xintian Mao, East China Normal University
14:35-14:45	Oral Talk Chemometric Analysis of Martian LIBS Data Using Deep Learning and Pretrained-Model-Based Transfer Learning Zhicheng Cui, Key Laboratory of Space Active Opto-electronics Technology, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
14:45-14:55	Oral Talk SRRN: A Compact Spectral Residual Refinement Network for Multispectral-to-Hyperspectral Reconstruction of Mars CRISM Data Lu Lu, Tongji University
14:55-15:05	Oral Talk Research on Key Technologies and Retrieval Models for Water Ice Information Extraction from Chang'e-7 Infrared Spectral Imaging Peizheng Liu, Shanghai Institute of Technical Physics, Chinese Academy of Sciences



Track 4: Digital Earth and Intelligent Cognition

Sep.19 Saturday, Noah Room 3, 3F (三楼 诺亚会议室 3)

Presider: Chun Liu, Tongji University

13:30-13:55	Keynote Talk From Near-Space Airships to Tethered Balloons: Earth System Observation from Aerostat Platforms Xianbin Cao, Beihang University
13:55-14:10	Keynote Talk Advances in Onboard Intelligent Information Processing and Applications: Some Reflections Xiyang Zhi, Harbin University of Technology
14:10-14:25	Invited Talk Advances in Multimodal Remote Sensing Large Models Zhenwei Shi, Beihang University
14:25-14:40	Invited Talk MSDE: Memory-driven Self-evolving Digital Earth Hui Xie, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
14:40-14:55	Invited Talk Reflective Tomography-LiDAR for High-Precision 3D Reconstruction of Space Targets Xinyuan Zhang, National University of Defense Technology
14:55-15:05	Oral Talk Physics-Informed Coupled Modeling of Spaceborne Infrared Detection of Weak Aerial Targets Liyuan He, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
15:05-15:20	Coffee Break
Presider: Xiang Li, East China Normal University	
15:20-15:45	Keynote Talk Geoscience Knowledge Graph Xinbing Wang, Shanghai Jiao Tong University
15:45-16:00	Invited Talk TBA Dapeng Tian, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences

16:00-16:15	Invited Talk Perspectives on the Application of Artificial Intelligence in opto-electronic Imaging Fei Liu, Xidian University
16:15-16:30	Invited Talk Multi-scale Issues in Cross-media Detection Pingyue Lv, Shanghai institute of technical physics, Chinese academy of sciences
16:30-16:45	Invited Talk Intelligent Algorithm-Empowered Novel Optical Measurements Jiamiao Yang, Shanghai Jiao Tong University
16:45-16:55	Oral Talk Characterization of the Land Surface Thermal Infrared Background and Comparison with Satellite Observations for the March 28, 2025 Myanmar Earthquake Ningbo Zhang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
17:00-18:30	Poster Session
18:30-20:30	Banquet



Track 4: Digital Earth and Intelligent Cognition

Sep.20 Sunday, Noah Room 3, 3F (三楼 诺亚会议室 3)

Presider: Lei Lv, Henan University of Technology

08:30-08:55	Keynote Talk Spatiotemporal Intelligence Driven Air Ground Collaborative Perception: Technologies and Progress Chun Liu, Tongji University
08:55-09:20	Keynote Talk Remote Sensing Big Data Platform and Its Applications in Sustainable Development in the Digital Intelligence Era Xiaoping Du, Aerospace Information Research Institute, Chinese Academy of Sciences
09:20-09:35	Invited Talk Generative deep-learning-embedded asynchronous structured light for three-dimensional imaging Lei Lv, Henan University of Technology
09:35-09:50	Invited Talk Towards World Model-Empowered Integrated Sensing, Communication, and Decision for Complex Unmanned Systems Yongpeng Wu, Shanghai Jiao Tong University
09:50-10:05	Invited Talk Discussion on Datasets and Typical Problems of Comprehensive Maritime Target Recognition Junfeng Wu, Naval Aviation University
10:05-10:15	Oral Talk AEF-FloodLM: Integrating AlphaEarth Embeddings for Visual Question Answering in Remote Sensing Flood Scenes Xinzhi Zhang, Beihang University
10:15-10:25	Oral Talk Large dynamic range Shack-Hartmann wavefront sensing based on a graph-theoretic computational model Lintong Du, Shanghai Jiao Tong University
10:25-10:40	Coffee Break

Presider: Xinyuan Zhang, National University of Defense Technology	
10:40-10:55	Invited Talk Low-Altitude Intelligent Remote Sensing and Its Applications in Areal Inspection Xiang Li, East China Normal University
10:55-11:10	Invited Talk Research on Key Technologies and Applications of Fengyun-3 Meteorological Satellites for Arctic Sea Ice Monitoring and Identification Cailan Gong, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
11:10-11:25	Invited Talk Modeling and simulation of micro-level crowd behaviors Wenhong Li, Aerospace Information Research Institute, Chinese Academy of Sciences
11:25-11:40	Invited Talk Construction and performance of Multi-dimensional Photonic Information Detectors Wenjie Deng, Beijing University of Technology
11:40-11:50	Oral Talk Tool-Augmented LLM Agents for Trustworthy Earth System Analysis Luyu Han, Shanghai Jiao Tong University
11:50-12:00	Oral Talk Intelligent Recognition Enabled by Large-Scale, Gate-Tunable MoS₂ Optoelectronic Arrays Kunyu Wang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
12:00-13:30	Lunch



Track 4: Digital Earth and Intelligent Cognition

Sep.20 Sunday, Noah Room 3, 3F (三楼 诺亚会议室 3)

Presider: Fei Xue, Zhejiang University

13:30-13:55	Keynote Talk 2D Ferroelectric Materials for Neuromorphic Computing Fucui Liu, University of Electronic Science and Technology of China
13:55-14:10	Invited Talk 2D Electronic Devices for In-memory-computing Fan Wu, Fudan University
14:10-14:25	Invited Talk 2D ferroelectric materials and devices Fei Xue, Zhejiang University
14:25-14:40	Invited Talk Gate-Reconfigurable Multifunctional Photodetection Through Realigning Energy Band Shenglan Hao, East China Normal University
14:40-14:55	Invited Talk Low-Dimensional Heterostructures for Near-Infrared Neuromorphic Optoelectronics: From Photocarrier Physics to In-Sensor Hardware Integration Sichao Du, Zhejiang University
14:55-15:05	Oral Talk Counterfactual Remote-Sensing Screening and Detectability Assessment of Localized Thermal Anomalies Associated with Tunnel Engineering in High-Altitude Cold Regions Haochen Bao, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
15:05-15:15	Oral Talk MST-Mamba: Multi-Scale Token-Enhanced Mamba for Hyperspectral Image Generation Yuanyi Zhang, Beihang University
15:15-15:25	Oral Talk Bidirectional Cross-Spatial Fusion Method of LiDAR Point Clouds and Images for Autonomous Driving Zhenglei Dou, National University of Defense Technology
15:25-15:35	Oral Talk Gate-Tunable Multi-Junction Competition for Joint Position and Wavelength Sensing Yuelin Zhang ^{1,3} , Xiao Fu ^{1,2*} ¹ State Key Laboratory of Infrared Physics, Shanghai Institute of Technical Physics ² University of Chinese Academy of Sciences ³ Hubei University

Track 5: Infrared and Interdisciplinary Fields

Sep.19 Saturday, Ya Mei Ballroom 3, 3F (3楼 亚美 3)

Presider: Fan Zhang, Fudan University

13:30-13:55	Keynote Talk Neuromorphic devices and integration Lei Ye, Huazhong University of Science and Technology
13:55-14:10	Invited Talk Memristor-based in-sensor computing technology for infrared detectors Qingjiang Li, National University of Defense Technology
14:10-14:25	Invited Talk Growth Mechanisms of van der Waals Epitaxial Heterointegration and Their Application to Interlayer Excitons Xiaoming Yuan, Central South University
14:25-14:40	Invited Talk TBA Junliang Liu, Jiangnan University
14:40-14:55	Invited Talk Anisotropic van der Waals Materials and Devices for Broadband Polarization-Sensitive Photodetection from the Ultraviolet to the Short-Wave Infrared Juehan Yang, Institute of Semiconductors, Chinese Academy of Sciences
14:55-15:10	Invited Talk Low dimensional semiconductor heterojunction based infrared detectors and their applications Yufeng Liu, Shanghai Institute of Technology
15:10-15:25	Coffee Break
Presider: Bobo Tian, East China Normal University	
15:25-15:50	Keynote Talk Far-/Medium-infrared All-sky Explorer (FAMAE) Chao Liu, National Astronomical Observatories, Chinese Academy of Sciences
15:50-16:05	Invited Talk 拟态计算技术的技术实践与发展 -- 从结构编排与生成到拓扑中心计算 Fan Zhang, Fudan University



16:05-16:20	Invited Talk Spatial-Spectral Information-guided Hyperspectral Anomaly Detection and Tracking Huixin Zhou, Xidian University
16:20-16:35	Invited Talk Mid-infrared upconversion computational imaging Kun Huang, East China Normal University
16:35-16:50	Invited Talk Motion tracking with in-sensor graded encoding and compression Jiewei Chen, South China Normal University
16:50-17:05	Invited Talk VO₂ based multiband dynamic optical thermal regulation Shuliang Dou, Harbin Institute of technology
17:05-17:15	Oral Talk Design of a Readout Circuit Chip for Quantum-Dot Infrared Dynamic Vision Sensors Weiyi Tang, Fudan University
17:00-18:30	Poster Session
18:30-20:30	Banquet

Track 5: Infrared and Interdisciplinary Fields

Sep.20 Sunday, Ya Mei Ballroom 3, 3F (3楼亚美3)

Presider: Yang Li, Zhejiang University

08:30-08:55	Keynote Talk TBA Xiubao Sui, Nanjing University of Science and Technology
08:55-09:10	Invited Talk Metasurface-Integrated Multi-Quantum-Well Detectors for Infrared Applications Yiyang Xie, Beijing University of Technology
09:10-09:25	Invited Talk Some new structures of mid-infrared quantum cascade lasers Bo Meng, Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
09:25-09:40	Invited Talk Toward self-driving epitaxy: from feedback control to autonomous heterostructure growth Chao Zhao, Institute of Semiconductors, Chinese Academy of Sciences
09:40-09:55	Invited Talk Direct All-Electrical Decoding of Infrared Structured Light: From Scalar Vortex to Vector Vortex Beams on Chip Mingjin Dai, Zhengzhou University
09:55-10:10	Invited Talk From Resonant Light Trapping to Reconfigurable Strong Coupling in Infrared Dielectric Metasurfaces Bowen Jia, Wuhan University of Technology
10:10-10:20	Oral Talk Sensing-memory coupled retinomorphic device for dim-light vision Xuelong Liu, Fudan University
10:20-10:35	Coffee Break
Presider: Xiaoming Yuan, Central South University	
10:35-10:50	Invited Talk Noise-resistance photon-correlation parallel LiDAR driven by the non-classical light source Chengbin Qin, Shanxi University



10:50-11:05	Invited Talk Scalable Metamaterials for light and thermal management Yang Li, Zhejiang University
11:05-11:20	Invited Talk Carbon nanotubes-based flexible electrochemical infrared-tunable device Kerui Li, Donghua University
11:20-11:35	Invited Talk Infrared Superconductor Nanowire Single-Photon Detector Hao Wang, Nanjing University
11:35-11:50	Invited Talk Bio-inspired Design and Multi-dimensional Perception of Reconfigurable Visual Sensors Yinlong Tan, National University of Defense Technology
11:50-12:00	Oral Talk Spatial Optical Encoding with a MoS₂ Floating-Gate Phototransistor Array for Robotic Vision Mingfei Dang, Shanghai University
12:00-13:30	Lunch



Track 5: Infrared and Interdisciplinary Fields

Sep.20 Sunday, Ya Mei Ballroom 3, 3F (3楼亚美3)

Presider: Kun Huang, East China Normal University

13:30-13:55	Keynote Talk Integrated Ultraviolet Optoelectronics for Communication and Imaging Haiding Sun, University of Science and Technology of China
13:55-14:10	Invited Talk Mechanical and Thermal Performance of Diamond as an Infrared Material Shaobo Cheng, Zhengzhou University
14:10-14:25	Invited Talk In-situ Fabricated Nanowire Array for Artificial Compound Eye Yu Zhou, Fudan University
14:25-14:40	Invited Talk Hetero-Integration of Mixed-Dimensional van der Waals Semiconductors for UV-IR Dual-Color Photodetection Feng Wu, Huazhong University of Science and Technology
14:40-14:55	Invited Talk Large-Area Low-dimensional Wide-bandgap Semiconductors for Integrated UV photodetectors Ziqing Li, Fudan University
14:55-15:05	Oral Talk Ferroelectric Reconfigurable Homo Junction Miniaturized Computational Spectrometers for Dynamic Spectral Sensing Qianru Zhao, Fudan University
15:05-15:15	Oral Talk Research on Infrared Detection and Infrared Camouflage Based on Metasurfaces Qianlong Kang, Shanghai Institute of Technical Physics, Chinese Academy of Sciences
15:15-15:30	Coffee Break
Presider: Shaobo Cheng, Zhengzhou University	
15:30-15:55	Keynote Talk TBA Qiming Zhang, University of Shanghai for Science and Technology



15:55-16:10	Invited Talk Research on the Enhancement of Photodetection Capability of Photodetectors by Interface Effects Feng Qiu, Yunnan University
16:10-16:25	Invited Talk Bright dipolar excitons in twisted black phosphorus homostructures Shenyang Huang, Fudan University
16:25-16:40	Invited Talk Flexible Active-Matrix Sensor Arrays based on Oxide Thin-Film Transistors Bowen Zhu, Westlake University
16:40-16:50	Oral Talk CMOS-Compatible Silicon-Based Integrated Miniaturized Spectrometers: Device Engineering, Spectral Reconstruction, and Applications Yuhang Hu, Fudan University



红外光电产业技术论坛

红外光电产业技术论坛是 ESIT2026 国际会议下设专题论坛，聚焦红外技术及其产业化应用，旨在研讨红外探测技术在材料、器件及工业领域的产业需求与前沿研究进展。

本次论坛邀请红外领域专家学者、产业界代表与青年科研人才开展主题报告和专题研讨，致力于打造一场思想碰撞、启智创新的高水平学术产业盛会。

诚邀各界同仁踊跃参会、交流互鉴，携手助力我国红外探测技术与遥感应用产业高质量可持续发展。

会议主持：李春来 中国科学院上海技术物理研究所

周 易 中国科学院上海技术物理研究所

会议时间：2026 年 9 月 18 日 13:30-18:00

会议地点：上海圣诺亚皇冠假日酒店 3 楼 诺亚会议室 5，上海普陀区金沙江路 1699 号

时间	内容
13:30-13:45	产业论坛开幕及嘉宾介绍
13:45-14:00	面向智能时代的传感器技术发展趋势和机遇 朱佳骐 秘书长 国家智能传感器创新中心副总裁、中国传感器与物联网产业联盟执行秘书长
14:00-14:15	红外光电传感器发展趋势及产业化应用 葛鲁振 智能决策高级工程师 海尔智家中央研究院
14:15-14:30	量子点红外探测及成像技术研究 唐鑫 首席科学家 中芯热成科技（北京）有限公司
14:30-14:45	高光谱成像技术及其产业化应用 马强 总经理 杭州高谱成像技术有限公司
14:45-15:00	红外光电传感器在气体泄露监测领域的应用和需求 卢锋 总经理 山东泉景道电子科技有限公司
15:00-15:15	茶歇



15:15-15:30	超构表面多维光学成像 王湫明 董事长 南京南智先进光电集成技术研究院有限公司
15:30-15:45	碲镉汞半导体单晶片与器件产业 孙士文 总经理 中科宏芯（常州）传感科技有限公司
15:45-16:00	制冷型红外探测器发展现状与技术趋势分析 徐志成 总经理 中科爱毕赛思（常州）光电科技有限公司
16:00-16:15	铟镓砷短波红外探测器进展及展望 刘大福 总经理 无锡中科德芯感知科技有限公司
16:15-16:30	商业气象卫星定量遥感仪器和应用展望 顾明剑 研究员 中国科学院上海技术物理研究所
16:30-18:00	红外产业技术圆桌讨论会

