



THE 8TH COMPUTATIONAL OPTICAL MEASUREMENT AND ITS EDUCATION

第八届计算光学测量及其教育国际研讨会

June 26-28, 2026 • Hefei, China

PROGRAM BOOK 会议手册



Table of contents

●	About the Conference.....	01
●	Acknowledgement.....	02
●	Conference Venue.....	03
●	Transportation.....	04
●	Agenda Overview.....	05
●	Keynote Speakers.....	08
●	Student Competition-I.....	16
●	Student Competition-II.....	18

ABOUT THE CONFERENCE

Computational Optical Measurement, as a cross-discipline, combining knowledge and techniques from the fields of optics, computer science and engineering, aims to realize high-precision and high-efficiency optical measurements using computational methods. The forum focuses on the in-depth integration of cutting-edge research and postgraduate education, involving research fields including but not limited to optical measurement, optical testing, experimental mechanics, three-dimensional imaging, computational optics, optical instrumentation, artificial intelligence, etc.

To promote academic exchanges and cooperation, technological progress and application innovation, and to provide a platform for young scholars to communicate, scholars in this field have advocated and initiated the International Forum on Computational Optical Measurement and its Education in 2019. The 8th International Forum on Computational Optical Measurement and its Education (COME2026) will be organized by the University of Science and Technology of China and held from June 26 to June 28, 2026 in Hefei, China. This forum will invite well-known experts in related fields to share their latest academic achievements and experiences. And a student presentation competition will be held to provide a platform for research students to exchange ideas and learn from each other.

Welcome you to this global forum to share your ideas and experiences, and enjoy the company of new and old friends.

Conference Chairs



Prof. Huaxia Deng
**University of Science and
Technology of China**



Associate Prof. Kemao Qian
Nanyang Technological University

ACKNOWLEDGEMENT

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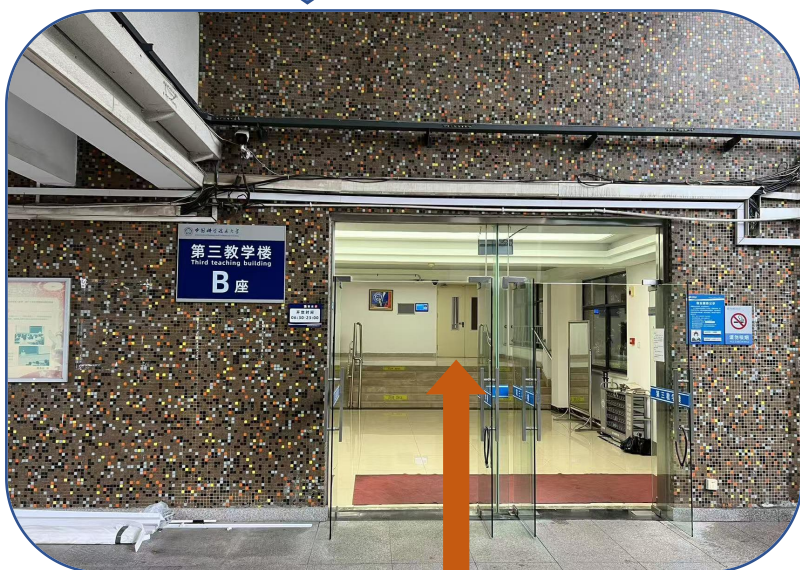
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CONFERENCE VENUE



Address:

The Third Teaching Building of the
West Campus of University of Science
and Technology of China



Main Conference Venue:

Room 3B103, Building 3B
Capacity: 380 seats
Date: June 27, 2026

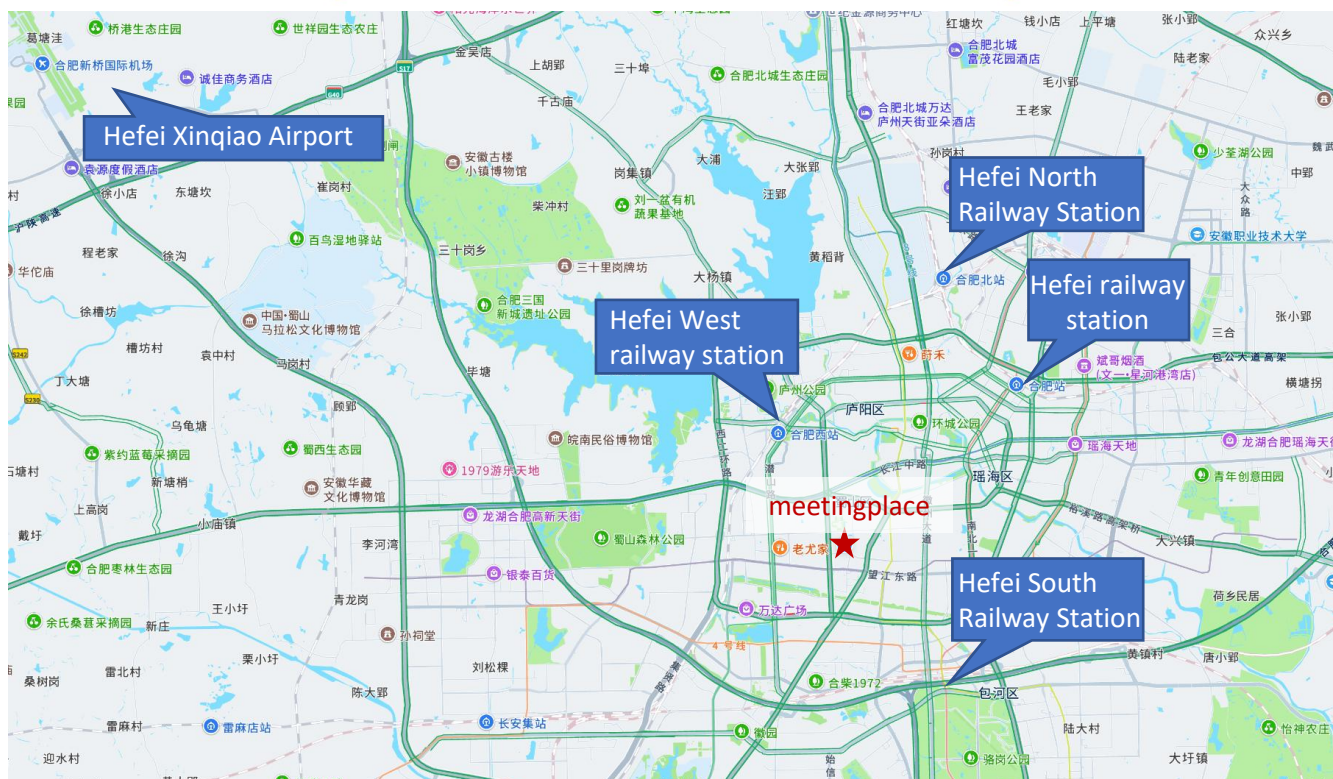
Student Presentation Competition Venues:

Room 3A203, Building 3A, West Campus
Capacity: 60 seats

Room 3A205, Building 3A, West Campus
Capacity: 80 seats

Date: June 26, 2026

TRANSPORTATION



Transportation Guide

Hefei can be conveniently reached by both air and high-speed railway. Participants arriving by air may choose “Hefei Xinqiao International Airport”. Participants arriving by train may choose “Hefei South Railway Station”, “Hefei Railway Station”, “Hefei West Railway Station”, or “Hefei North Railway Station”, according to their ticket information.

After arriving in Hefei, participants may travel to the conference venue by taxi, ride-hailing service, metro, bus, self-driving, or shared bicycle. Taxi or ride-hailing service is recommended for participants carrying luggage or arriving for the first time.

Please check your arrival station or airport in advance and allow sufficient time for registration and conference activities.

AGENDA OVERVIEW

Sign-in

6/26 8:00 – 18:00

Day1 | June 26, 2026

Time	Activity
14:00-17:30	Student Competition-I
	Student Competition-II

Day2 | June 27, 2026

Time	Activity	Speaker
08:40-08:50	Welcome Address	
08:50-08:55	Introduction to the Conference	
08:55-09:00	Group Photo	

AGENDA OVERVIEW

Time	Activity	Speaker
09:00-09:40	Teaching Optical Design at Scale: Lessons from the University of Rochester	Julie Bentley
09:40-10:20	In Situ Multispectral Investigation of Interface Mechanics in Two-Dimensional Heterostructures on Soft Substrates	Wei Qiu
10:20-10:40	Coffee Break	
10:40-11:20	A Brief Talk on Scientific Writing and Graduate Student Education	Mengjian Zhu
11:20-12:00	Generative deep learning based structured light for three-dimensional imaging	Lei Lu
12:00-14:00	Lunch	
14:00-14:40	Computational 3D Perception under Degradation Conditions	Chenxing Wang
14:40-15:20	Quantum Imaging Science and Technology	Feihu Xu
15:20-15:40	Coffee Break	

AGENDA OVERVIEW

Time	Activity	Speaker
15:40-16:20	3D measurement of transparent objects	Gunther Notni
16:20-17:00	Single-fibre endoscopy based on holographic beam projection and photon-counting detection	Miles Padgett
Awards and Closing Ceremony		
17:00-17:20	Awards Ceremony	
17:20-17:25	COME2027 Announcement	
17:25-17:30	COME2026 Summary, Closing	

KEYNOTE SPEAKERS

*Julie***professor at The Institute of Optics in Rochester**

Julie Bentley is a professor at The Institute of Optics in Rochester, NY. Her expertise is in the area of optical design and tolerancing of precision optical instruments and has been teaching classes in geometrical optics and optical design for over 25 years. Her research group is focused on three different aspects of optics: optical design with freeform GRIN (gradient index) materials, the design of next generation adaptive optics (AO) ophthalmoscopes, and applying artificial intelligence and neural networks to zoom lens design and optimization. In her “free” time she runs an optical design consulting business (Bentley Optical Design) designing optical systems that range from military optics to optical systems for medical devices.

Speech Title**Teaching Optical Design at Scale: Lessons from the University of Rochester**

This presentation describes the scaling of a project-based optical design course at the University of Rochester from fewer than ten students to over sixty-five annually. Built around individual industry-inspired projects and formal design reviews, the course emphasizes technical rigor, communication, documentation, and project management. A structured mentoring model using graduate and advanced undergraduate mentors supports feedback, engagement, and scalability while developing mentor leadership and collaborative learning in engineering education settings.

KEYNOTE SPEAKERS

*Wei Qiu*

Professor and Ph.D. Supervisor in the School of Mechanical Engineering at Tianjin University

Prof. Wei Qiu is a Professor and Ph.D. Supervisor in the School of Mechanical Engineering at Tianjin University. He is a recipient of the National Science Fund for Distinguished Young Scholars and has received several prestigious honors, including the New Century Excellent Talents Program of the Ministry of Education, the Tianjin "131" Innovative Talent Program, and the Endeavour Australia Cheung Kong Scholarship. He currently serves as the Chair of the Department of Mechanics and the Director of the Tianjin Key Laboratory of Modern Engineering Mechanics at Tianjin University. His research interests focus on micro- and nanoscale spectroscopic experimental mechanics, multiscale mechanical behavior of nanomaterials and structures, and engineering applications of optical mechanics. He has led seven projects funded by the National Natural Science Foundation of China (NSFC), including one National Major Scientific Instrument Development Project, and has participated in more than ten national research programs. He holds over 30 authorized patents and has published more than 130 papers in international and domestic journals.

Speech Title**In Situ Multispectral Investigation of Interface Mechanics in Two-Dimensional Heterostructures on Soft Substrates**

Interfacial mechanical behaviors of two-dimensional materials (TDMs) and their heterostructures are critical to both multiscale mechanics and the practical implementation of TDM-based devices. However, quantitative understanding of these behaviors remains challenging because of the interfacial deformation transfer being strongly affected by size, interfacial conformity, multilayer coupling and complex strain states. This talk presents a systematic investigation of 2D interface mechanics through progressively developed in-situ multispectral experimental methods.

KEYNOTE SPEAKERS



Mengjian Zhu

**professor in Nanoscience & Optical Engineering
at the National University of Defense Technology**

Dr. Mengjian Zhu is a professor in Nanoscience & Optical Engineering at the National University of Defense Technology. Dr. Mengjian Zhu's research interests include electronic properties and light-matter interaction in graphene, 2D materials and their van der Waals heterostructures. He is also interested in optical spectroscopy of van der Waals quantum materials. In recent 5 years, he and his group have published more than 10 Nature series journal papers, including 2 Nature Physics, 2 Light: Science & Applications, and 6 Nature Communications, with a total citation > 4000 and a h-index of 36.

Speech Title

A Brief Talk on Scientific Writing and Graduate Student Education

As a graduate supervisor, I receive greetings and flowers from my students every Teacher's Day. Yet I often ask myself: Am I truly a qualified advisor? What kind of imprint will these vibrant young people carry away from their years of study here? Beyond imparting professional knowledge, teaching research skills, and resolving academic doubts, how can I also help cultivate their moral character, aspirations, and personal growth?

In this lecture, using the methods and techniques of writing graduate theses as a starting point, I will share my preliminary thoughts on high-quality graduate education and talent development, and I look forward to discussing these issues with you.

KEYNOTE SPEAKERS



Lei Lu

professor in Henan University of Science and Technology

Lei Lu received BEng from Henan University of Science and Technology, China in 2007, MEng from Zhengzhou University, China in 2011 and PhD from the University of Wollongong, Australia in 2015. He was a Postdoctoral Fellow in Singapore University of Technology and Design, Singapore from 2015 to 2016. Now he is professor in Henan University of Technology, China. His research interests include 3D shape measurement, 3D printing and 3D data processing. He received 2 funds of NSFC, obtained the title of Leading Talents in Basic Research of Henan province, Talents with outstanding contributions to local economy in Zhengzhou City.

Speech Title

Generative deep learning based structured light for three-dimensional imaging

Three-dimensional (3D) imaging with structured light is crucial in diverse scenarios, ranging from intelligent manufacturing and medicine to entertainment. However, current structured light methods rely on projector-camera synchronization, limiting the use of affordable imaging devices and their consumer applications. In this work, we introduce an asynchronous structured light imaging approach based on generative deep neural networks to relax the synchronization constraint, accomplishing the challenges of fringe pattern aliasing, without relying on any a priori constraint of the projection system. To overcome this need, we propose a generative deep neural network with U-Net-like encoder-decoder architecture to learn the underlying fringe features directly by exploring the intrinsic prior principles in the fringe pattern aliasing. We train within an adversarial learning framework and supervise the network training via a statistics-informed loss function. We demonstrate that by evaluating the performance on fields of intensity, phase, and 3D reconstruction. It is shown that the trained network can separate aliased fringe patterns for producing comparable results with the synchronous one.

KEYNOTE SPEAKERS

**Chenxing Wang****Associate Professor in Southeast University**

Wang Chenxing received her Ph.D. degree from Southeast University and then worked as a research fellow at Nanyang Technological University. She is now an Associate Professor in Southeast University. She has led projects funded by NSFC and multiple provincial and ministerial funds, and received grants such as the "Double-Innovation Doctor" talent program in Jiangsu Province and the preferential funding for returned overseas talents. She has published over 50 papers in top international journals and CCF conferences, and holds over 20 authorized invention patents. She was awarded "My Favourite Teacher" and also listed among top ten mentors in the 14th "My Favourite Graduate Supervisor" at Southeast University. She serves as a review expert for NSFC and various provincial and ministerial natural science funds, and as a reviewer for internationally renowned journals such as IJCV, IEEE TIP, IEEE TITS, Opt. Express, NeurIPS, etc. She is a member of IEEE/CCF/CSIG, etc. Her main research interests include optical imaging, 3D perception, precision engineering and automation.

Speech Title**Computational 3D Perception under Degradation Conditions**

3D perception serves as the core link between the physical world and digital space. However, degradation issues such as dynamic light fields, sparse underdetermined observations, and dynamic changes in unstructured open scenes pose numerous challenges to high-fidelity 3D reconstruction in real-world scenarios. This report focuses on high-quality 3D perception under degradation conditions, specifically addressing single-pixel 3D imaging and structured light systems in complex light fields, mapping from sparse observations to continuous fields, and structuring unstructured scenes. By combining computational imaging algorithms, visual semantic reconstruction and intelligent system application development, we will present our recent research progress.

KEYNOTE SPEAKERS



Feihu Xu

professor in University of Science and Technology of China

Feihu Xu received his B.S. degree from the University of Science and Technology of China, his Ph.D. degree from the University of Toronto, and completed postdoctoral research at the Massachusetts Institute of Technology. He is currently a professor at the University of Science and Technology of China. He was elected as an Optica Fellow in 2022 and received several honors, including the Changjiang Distinguished Professorship from the Ministry of Education in 2021 and the National Overseas High-Level Young Talent Award in 2017. His research interests include quantum networks, single-photon imaging, and other areas of quantum information science. He has published more than 100 papers in journals including *Reviews of Modern Physics* and *Nature*, with over 10,000 citations. He serves as an Associate Editor of *npj Quantum Information* and *Advanced Imaging*, and as a Steering Committee Member of the International Conference on Quantum Cryptography. His awards include the Xplorer Prize, the IOP International Quantum Technology Young Scientist Award, the Chinese Academy of Sciences Young Scientist Award, and MIT Technology Review's Innovators Under 35 China.

Speech Title

Quantum Imaging Science and Technology

Quantum imaging applies quantum technologies, such as quantum light sources and quantum detection, to imaging science, enabling breakthroughs beyond the limits of conventional imaging techniques in sensitivity, distance, and resolution. Quantum imaging can be broadly divided into two categories: (1) quantum-property-based imaging, which exploits fundamental quantum features to surpass classical physical limits; and (2) quantum-inspired imaging, which develops new imaging technologies inspired by quantum physics. In this talk, I will mainly introduce quantum-inspired imaging, including recent advances in single-photon imaging, non-line-of-sight imaging, optical synthetic aperture imaging, and related topics. I will also discuss future directions of quantum imaging in astronomical observation, biomedicine, materials characterization, and other fields.

KEYNOTE SPEAKERS



Gunther Notni

Lifelong Professor of the Technical University of Ilmenau, Germany

Gunther Notni studied physics at the Friedrich Schiller University in Jena from 1983-1988 and obtained his doctorate there in 1992. He has worked at the Fraunhofer Institute for Applied Optics and Precision Engineering IOF in Jena since 1992. Here he headed the Optical Systems department from 1994-2020 and has been responsible for the Optical Sensors & Metrology business unit on the Fraunhofer IOF Board of Directors since 2020. In October 2014, he was also appointed to a W3 professorship at TU Ilmenau, where he heads the 'Quality Assurance and Industrial Image Processing' department. His work focuses on the development of optical 3D sensors and the principles of multimodal and multispectral image processing and their application in human-machine interaction, quality assurance, medicine and forestry.

Speech Title

3D measurement of transparent objects

With conventional 3D measurement techniques in the visible up to the near-infrared or short-wavelength infrared spectral ranges, non-cooperative materials being, e.g., transparent, translucent, specular reflective, or even deep-black, cannot be measured without any object preparation. To overcome this the thermal 3D measurement principle "Shape from heating" will be introduced. By changing the spectral range into the thermal infrared and combining thermography and triangulation with thermal pattern generation, it will be shown to measure such non-cooperative objects in three dimensions without prior surface treatment. In the talk different arrangements are discussed: multi fringe projection technique, sequential fringe projection, high speed thermal 3d-scanning up to single shot 3d-scanning using thermal statistical patterns. Furthermore, some applications and case studies are shown.

KEYNOTE SPEAKERS

***Miles Padgett*****Hold the Kelvin Chair of Natural Philosophy at the University of Glasgow**

Miles Padgett is a Royal Society Research Professor (2021 –), the Society's premier research award, and hold the Kelvin Chair of Natural Philosophy at the University of Glasgow. Miles was the Principal Investigator of QuantIC (2014 - 2025), the UK's Centre of excellence in quantum-enhanced imaging, bringing together eight UK universities and more than 40 industry partners. He is now Science Director of QuSIT(2024 -), the UK's Centre of excellence in quantum-enhanced sensing imaging and timing – with a similar structure. This UK approach has transformed the global landscape in how emerging technologies can transition to industrial use. His own research covers all things optical, from the way light behaves as it pushes and twists the world around us to the application of new techniques in imaging. My group has published over 400 papers that have amassed >80,000 (Google) citations with an h-index of 141, article-level metrics are found here. Since 2019 he have been named each year by Web of Science as a globally highly-cited researcher (article-level, metrics), one of typically fewer than 5 UK physicists named each year and he is the highest cited quantum scientist in the UK.

Speech Title**Single-fibre endoscopy based on holographic beam projection and photon-counting detection**

Whereas most endoscopic type imaging systems use bundles of optical fibres to relay an image from end to the other we use only a single-cored optical fibre much thinner than the bundle, making the system minimally invasive. We holographical shape the illumination light coupled to the fibre creating a raster scanning spot over the scene to be imaged. The light backscatter from the scene is collected by a similar optical fibre. The inefficiency of light collection means we use a photon-counting detector, which when combined with pulsed illumination gives both maximal sensitivity and a 3D imaging capability. We demonstrate imaging in restricted spaces at video frame rates with 80x80 lateral resolution, a depth resolution of 10mm and a maximum imaging range of several metres.

STUDENT COMPETITION-I

JUNE 26, 2026 | 14:00-17:20 | Room 3A203

➤ TABLE OF TIME

Time	Speaker/Title
14:00-14:10	Zhangsheng Li , Jiangxi University of Science and Technology Title: Motion Blur Image Restoration Based on Deep Learning
14:10-14:20	Cheng Zhang , Southeast University Title: Speckle image restoration for DIC measurement under non-uniform illumination based on deep learning model
14:20-14:30	Min Zeng , Nanjing University of Science and Technology Title: Inverse Synthetic Aperture Macroscopic Fourier Ptychographic Imaging of Moving Targets
14:30-14:40	Chao Zhao , Changzhou University Title: Speckle Interferometry Fringe Denoising Method Based on Multi-Stage Progressive Network
14:40-14:50	Xiaoxue Li , Hefei University of Technology Title: Hadamard Matrix Slicing Single-Pixel Imaging: Establishing a Linear-Array-Inspired Paradigm for N-fold Acceleration Single-Pixel Imaging
14:50-15:00	Chengyi Shou , Shanghai Jiao Tong University Title: Projection Moiré Deflectometry with Adjustable Illumination for High-Precision Measurement of Large-Curvature Specular Surfaces
15:10-15:20	Mingyu Jing , Sichuan University Title: High-Precision Dynamic 3D Measurement for Objects Moving in Arbitrary Spatial Directions
15:20-15:40	Break
15:40-15:50	Zaihong Xiao , University of Science and Technology of China Title: Aperture sampling and coarse-to-fine reconstruction for seamless parallel compressive sensing imaging
15:50-16:00	Lianhao Zhang , University of Science and Technology of China Title: Physics-Constrained Autofocus in Fiber-Coupled Single-Pixel Microscopy
16:10-16:20	Gao Tang , University of Shanghai for Science and Technology Title: Continuous Rotating Optical Topological States within Sub-wavelength Radius in Micro-nano Structure

STUDENT COMPETITION-I

JUNE 26, 2026 | 14:00-17:20 | Room 3A203

➤ TABLE OF TIME

Time	Speaker/Title
16:20-16:30	Jiangyuan Huang , Southeast University Title: Full-Field 3D Deformation Measurement of Flexible Structures With Multistable Configurations Using ETL-Enhanced Single-Camera Stereo DIC
16:30-16:40	Ying Yang , Changchun University of Science and Technology Title: Systematic wafer surface-profile inspection: from in-situ rotation to topography reconstruction of discontinuous chucks
16:40-16:50	Huili Yang , Shanghai University Title: Closed-Loop Feedback-Based Adaptive Spectrum Positioning for a Dual-Mode Digital Off-Axis Holographic Detection System
16:50-17:00	Shengzhi Tao , Hefei University of Technology Title: High-Accuracy Incremental Strategy for Laser Speckle Digital Image Correlation
17:00-17:10	Qiwei Fang , Shanghai University Title: Diffraction Measurement of Lens Transmitted Wavefronts Based on Multi-plane Accelerated Wirtinger
17:10-17:20	Xiaoliang Zhang , Southeast University Title: Phase unwrapping and pixel-wise uncertainty evaluation based on a conditional diffusion model

STUDENT COMPETITION-II

JUNE 26, 2026 | 14:00-17:20 | Room 3A205

➤ TABLE OF TIME

Time	Speaker/Title
14:00-14:10	Dijiu Liang , Southwest Jiaotong University Title: Autostaggering Fringe-Order Method Avoids Phase-Jump Errors for Code-Based Fringe Projection Profilometry
14:10-14:20	Haiyi Ding , Shanghai University Title: Research on Interferometric Measurement Technology for Inner Cylindrical Surface Form Using Sub-aperture Stitching
14:20-14:30	Wenzhuo Xie , Nanjing University of Science and Technology Title: Adaptive pupil aberration correction for non-standard coverslips via Fourier ptychographic microscopy
14:30-14:40	Zhuolin Ou , Guangdong University of Technology Title: Physics-guided in-line holographic reconstruction via complex-valued multi-scale wavelet decomposition and cross-frequency gated fusion
14:40-14:50	Shangwei Deng , Tianjin University Title: IOVarNet: Inner–Outer Variation Synergy Network for Infrared Small Target Detection
14:50-15:00	Xiaobai Wang , Changzhou University Title: Polarization modulation ranging method based on frequency modulation and digital quadrature demodulation
15:10-15:20	Qianwen Ma , Tianjin University Title: DWTFreqNet: Infrared Small Target Detection via Wavelet-Driven Frequency Matching and Saliency-Difference Optimization
15:20-15:40	Break
15:40-15:50	Jiawei Zhang , Changzhou University Title: DPDQN-TER: An Improved Deep Reinforcement Learning Approach for Mobile Robot Path Planning in Dynamic Scenarios
15:50-16:00	Jinke Huang , Southeast University Title: Kinetically Consistent Incremental PINN-DIC: A Robust Framework for Large-Deformation Measurement of Soft Materials Up to 300% Strain
16:10-16:20	Weihao Cheng , Nanjing University of Science and Technology Title: Composite Encoding Structured Illumination Microscopy Based on Fourier Residual Attention Network (FRAN-SIM)

STUDENT COMPETITION-II

JUNE 26, 2026 | 14:00-17:20 | Room 3A205

➤ TABLE OF TIME

Time	Speaker/Title
16:20-16:30	Yang Xu , Jiangxi Science and Technology Normal University Title: Polarization Information Restoration for Visual Reflection Removal via Cross Dual-stream Network
16:30-16:40	Yuhang Shen , University of Shanghai for Science and Technology Title: Advances in the absolute measurement of the transfer function for large-aperture Fizeau interferometers
16:40-16:50	Letian Zhao , Beihang University Title: Measuring full-field vibration and dynamic deformation using single time-gated camera stereo-digital image correlation
16:50-17:00	Changchun Zheng , Jiangxi University of Science and Technology Title: Research on high-precision 3D measurement method for high dynamic range parts
17:00-17:10	Xiaoyutong Xiao , Nanjing University of Science and Technology High-Speed Temporal Super-Resolution 3D Imaging via Depth-Aware Frame Interpolation-Driven Multiplexed Fringe Projection Profilometry
17:10-17:20	Renze Liu , Nanjing University of Aeronautics and Astronautics 360° Full-Surface 3D-DIC Measurement of Cylindrical Shells and Its Applications in Buckling and Impact Tests



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