

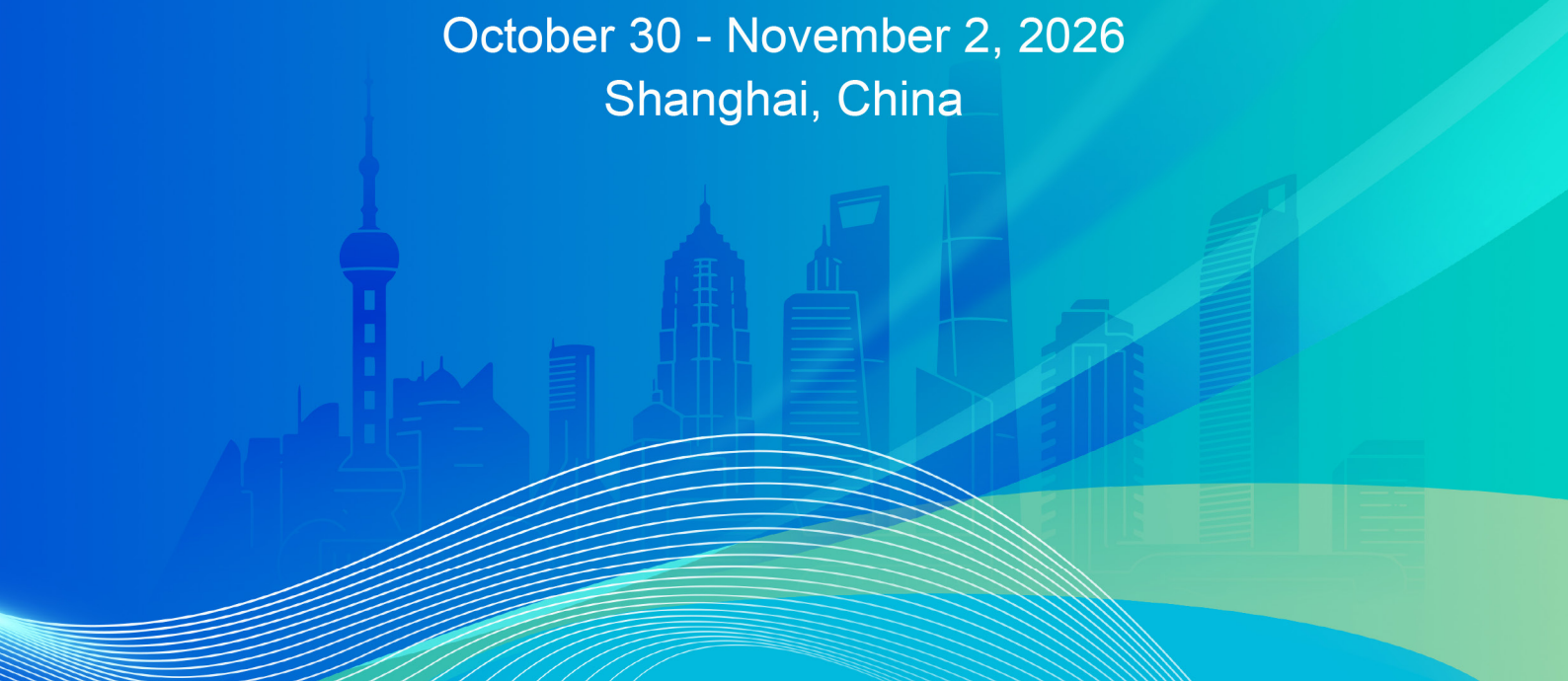


APWSHM 2026

The 11th Asia-Pacific Workshop on
Structural Health Monitoring

Conference Handbook

October 30 - November 2, 2026
Shanghai, China



WELCOME

We are delighted to welcome you to the 11th Asia-Pacific Workshop on Structural Health Monitoring (APWSHM 2026). This conference is jointly organized by eight universities, including Shanghai Jiao Tong University, Harbin Institute of Technology, East China University of Science and Technology, Fudan University, Tongji University, Nanjing University of Aeronautics and Astronautics, The Hong Kong Polytechnic University, and North Carolina State University. As a major international academic event in the field of structural health monitoring (SHM), APWSHM 2026 will bring together leading experts, scholars, researchers, and engineering professionals from around the world to explore cutting-edge scientific research, key technologies, and innovative applications in SHM.

The Asia-Pacific Workshop on Structural Health Monitoring is held biennially and has successfully convened ten previous editions. Building upon the academic achievements and international collaborations established through these events, APWSHM 2026 will continue to serve as a dynamic, multidisciplinary platform for international exchange, fostering the exchange of ideas, the dissemination of emerging technologies, and cross-disciplinary collaboration. This year's conference will focus on novel principles, methodologies, technologies, and engineering applications in SHM, encompassing structural safety monitoring and performance assessment in mechanical, aerospace, marine, civil engineering, and related fields. Through plenary lectures, keynote presentations, invited talks, and thematic technical sessions, the conference will provide opportunities for in-depth discussions of the latest research advancements, emerging trends, and future opportunities in SHM.

The central mission of APWSHM is to bring together researchers, engineers, and industrial professionals from across the globe to share scientific discoveries, technological innovations, and practical engineering experiences, thereby advancing knowledge dissemination, technological progress, and international collaboration in SHM. This year's conference will place particular emphasis on interdisciplinary integration and collaborative innovation, fostering new perspectives and technological solutions for structural safety assurance, in-service condition assessment, and the reliable operation of engineering systems. Furthermore, APWSHM 2026 is committed to encouraging the active participation of early-career researchers and graduate students by providing a platform to showcase their research achievements, exchange pioneering ideas, broaden their international perspectives, and establish academic collaborations, thereby contributing to the continued advancement of the SHM community.

We sincerely wish all participants a rewarding and inspiring conference filled with meaningful exchanges, new connections, and fruitful collaborations. May APWSHM 2026 be a memorable gathering that inspires new ideas, strengthens friendship, and shapes the future of structural health monitoring!



Prof. Yanfeng Shen
Conference Chair



Prof. Fuh-Gwo Yuan
Conference Co-Chair



Prof. Zhongqing Su
Conference Co-Chair

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CONFERENCE ORGANIZATION

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P.R. China



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North Carolina State University
United States of America



Co-Chair

Prof. Zhongqing Su
The Hong Kong Polytechnic University
Hong Kong SAR, China

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Local Organizing Committee

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- Wei Teng North China Electric Power University
- Huaping Wan Zhejiang University
- Kai Wang Xiamen University
- Qiang Wang Nanjing University of Posts and Telecommunications
- Wentao Wang Harbin Institute of Technology (Shenzhen)
- Yishou Wang Xiamen University
- Ziping Wang Jiangsu University
- Zhihua Wang Beihang University
- Jun Wu Huazhong University of Science and Technology
- Qi Wu Nanjing University of Aeronautics and Astronautics
- Liyu Xie Tongji University
- Wei Xu Hohai University
- Bin Yang Tongji University
- Jinsong Yang Central South University
- Lei Yang Jiangnan University
- Yongchao Yang Eastern Institute of Technology
- Yu Yang Aircraft Strength Research Institute of China
- Zhengyan Yang Jiangnan University
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- Rui Zhu Beijing Institute of Technology
- Yanping Zhu Beijing University of Technology
- Runye Lu Shanghai Jiao Tong University (secretary)
- Zeyu Ning Harbin Institute of Technology (secretary)
- Yunlai Liao Shanghai Jiao Tong University (secretary)

CONFERENCE INFORMATION

Conference Venue

- Venue: Jeurong Hotel Shanghai
- Address: No. 80 Minhong Road, Minhang District, Shanghai

Onsite Registration

- Registration hours:
13:30-23:00, Friday, October 30, 2026
- Location: Jeurong Hotel Shanghai, Registration Desk on the First Floor

Presentation Types

- Plenary Lecture 40 minutes (Including Q&A)
- Keynote Speech 30 minutes (Including Q&A)
- Invited Talk 20 minutes (Including Q&A)
- General Oral Presentation 15 minutes (Including Q&A)

Dining Arrangement

Date	Time	Meal	Location
Friday, October 30	18:30-20:00	Buffet Dinner	2F SENSES ALL DAY DINING
Saturday, October 31	12:00-13:30	Buffet Lunch	2F SENSES ALL DAY DINING
Saturday, October 31	18:30-22:00	Dinner Cruise	Huangpu River Night Cruise Boarding Point:Bailianjing Wharf (Shanghai)
Sunday, November 1	12:00-13:30	Buffet Lunch	2F SENSES ALL DAY DINING
Sunday, November 1	19:00-20:30	Banquet & Award Ceremony	3F GRAND BALLROOM
Monday, November 2	12:00-13:30	Buffet Lunch	2F SENSES ALL DAY DINING

Transportation

- **[Shanghai Hongqiao Railway Station / Shanghai Hongqiao International Airport]**

Distance: Approximately 9.4 km from the venue

Taxi: Approximately 25 minutes; fare approximately RMB 40–60

Metro: Take Line 10 (Hongqiao Railway Station) → transfer at “Hongqiao Station” to Line 4 (outer loop) → alight at “Shanghai Indoor Stadium” → transfer to Line 1 (towards Xinzhuang) → alight at “Lianhua Road” → walk approximately 680 m to the venue

- **[Shanghai South Railway Station]**

Distance: Approximately 5.3 km from the venue

Taxi: Approximately 15 minutes; fare approximately RMB 20–30

Metro: Take Line 1 (towards Xinzhuang) → alight at “Lianhua Road” → walk approximately 680 m to the venue

- **[Shanghai Pudong International Airport]**

Distance: Approximately 45 km from the venue

Taxi: Approximately 50 minutes; fare approximately RMB 150–180

Metro: From "Pudong International Airport Terminal 1/2," take the Airport Link Line, transfer at "Jinghong Road" to Line 15 (towards Gucun), transfer at "Shanghai South Railway Station" to Line 1 (towards Xinzhuang), and get off at "Lianhua Road." Walk approximately 680 meters to reach the venue.



PLENARY SPEAKERS



Prof. Shan-Tung Tu

CAE Academician, China

East China University of Science and Technology, China

Biography

Prof. Shan-Tung Tu is an Academician of the Chinese Academy of Engineering and Professor at East China University of Science and Technology (ECUST). He received his B.Eng. in 1982 and Ph.D. in 1988 from Nanjing Tech University. He previously served as Professor and Vice President at Nanjing Tech University and ECUST, and as a guest scientist at the Royal Institute of Technology, Sweden.

Prof. Tu is internationally recognized for his contributions to high-temperature structural integrity, creep and fatigue fracture, structural integrity monitoring, and the design of high-temperature equipment. His research has advanced failure prevention and the development of next-generation process and power equipment. He has authored over 400 peer-reviewed publications, accumulating more than 25,000 citations. His achievements have been recognized with numerous prestigious awards, including the China National Science and Technology Progress Award, National Technology Invention Award, China Youth Science and Technology Award, Special International Prize of PSG-IMEchE, SAE Excellence in Innovation Award, and ASME Best Paper Award. Prof. Tu holds several prominent academic leadership positions, including Honorary President of the China Pressure Vessel Institution and the Materials Institution of the Chinese Mechanical Engineering Society, Chair of the China Structural Integrity Consortium, and Chair of the Asia-Oceania Regional Committee of the International Council for Pressure Vessel Technology. He is also an Honorary Professor at the University of Nottingham, UK.

Development of Health Monitoring Techniques for Valves in Process Industries

Abstract:

Industrial valves are critical components for regulating, isolating, and controlling fluid flows in process industries such as nuclear power and petrochemical plants, where they must endure extreme temperatures, pressures, and radiation. Valve failures account for approximately 30 percent of industrial process accidents and 60 percent of fluid leakage incidents, with annual maintenance expenditures reaching tens of billions of yuan. Conventional offline inspection methods are insufficient to ensure continuous valve operation, as minute changes in service conditions may go undetected between inspection intervals. Structural health monitoring provides a vital alternative for maintaining safe and cost-effective valve operation, provided that reliable sensors capable of accurately reflecting valve conditions are available.

This lecture presents a comprehensive smart health monitoring system for industrial valves, encompassing novel sensor technologies and intelligent fault diagnosis algorithms. Two categories of leakage sensors have been developed: a bubble-based sensor establishing a quantitative relationship between introduced gas volume and bubble count with a relative error within 5 percent, and a cavity-shaped acoustic whistle sensor detecting leakage rates as low as 1 L/min with sensitivity and accuracy surpassing those of commercial acoustic emission methods. A new generation of metal-packaged fiber Bragg grating strain sensors have been designed to measure stem thrust, stem torque, and bolt clamping force in flange joints across a temperature range from -196 to 600 degrees Celsius, achieving a measurement accuracy within a relative error of 5%. A back-propagation neural network and characteristic parameter threshold-based algorithms have been developed for valve fault diagnosis, attaining a diagnostic accuracy exceeding 90%.

The practicability and reliability of the developed monitoring system are fully verified through extensive field engineering applications covering multiple valve types and complex operating scenarios. The validated application scenarios include main steam isolation valves in pressurized water reactor nuclear power plants, on-off and control valves for main-steam and intermediate-pressure steam systems of thermal-power steam turbine with electro-hydraulic actuators, large-diameter electro-hydraulic servo butterfly valves up to DN4800 in water projects, motor-operated gate and ball valves in petrochemical and fossil-fuel power plants under high temperature and pressure, as well as cryogenic ball valves for liquefied natural gas applications. Comparative tests between the self-developed fiber Bragg grating sensors and commercial torque sensors verify that the relative error is within 5 percent, confirming the reliability of the proposed sensors. The intelligent online detection and diagnosis systems serviced in power plants have achieved stable and continuous operation, mitigating the risk of unexpected shutdowns and ensuring safe, stable and efficient operation of steam turbine units.

PLENARY SPEAKERS



Prof. Wiesław Ostachowicz
Fellow of the Polish Academy of Sciences, Poland
Institute of Fluid-Flow Machinery, Poland

Biography

Wiesław Ostachowicz is a Professor at the Institute of Fluid-Flow Machinery and a Member of the Polish Academy of Sciences, and has led research in dynamics at the Institute of Fluid-Flow Machinery, Polish Academy of Sciences (IMP PAN), for over forty years. He obtained his PhD and DSc degrees in Mechanical Engineering and was appointed Professor in 1989. His expertise covers structural health monitoring (SHM), vibration control, structural dynamics, composite structures, multifunctional and smart materials, and damage assessment of structures. His work combines theoretical and experimental approaches, with a particular focus on guided wave propagation and the development of advanced vibroacoustic and ultrasonic methods for damage detection using smart sensor technologies, which are highly sensitive to small cracks in metallic and composite structures. Prof. Ostachowicz has held visiting professorships at Syracuse University (USA), the University of Glasgow (UK), and ENSAM Paris (France), and is the author of 428 journal papers, 532 conference papers, 5 monographs, and 7 book chapters. He has participated in more than 25 international research projects and serves as Editor or Associate Editor for leading journals including Mechanical Systems and Signal Processing and Structural Health Monitoring. Prof. Ostachowicz has supervised 20 PhD dissertations, is the co-inventor of four patents including a European patent with Boeing Research & Technology Europe, and is the recipient of the O.C. Zienkiewicz Medal (2013), the SHM Lifetime Achievement Award sponsored by Boeing (2019), and the Gold Medal "Sapientia et Veritas" (2023).

SHM 2.0: Towards Digital Transformation Aligned with Industry 4.0

Abstract:

In recent years, we have observed the rapid development of digital technologies, which is driving the modernisation of structural health monitoring techniques. Structural health monitoring is no longer merely a diagnostic tool but is becoming part of a broader ecosystem of digital infrastructure management.

The presentation introduces the transition from conventional Structural Health Monitoring to SHM 2.0 as part of the digital transformation of engineering infrastructure aligned with Industry 4.0. It first addresses the question of why structural health monitoring is becoming increasingly important. Its growing importance is driven by several challenges, including ageing infrastructure, increasing operational and safety requirements, limited maintenance resources, growing traffic and operational loads, and the effects of climate change.

The presentation then describes the evolution of structural health monitoring over the past decade, highlighting three stages: SHM 1.0 (single sensors, local data acquisition, offline analysis), SHM 1.5 (networked monitoring systems with remote communication), and SHM 2.0 (intelligent, connected monitoring integrated with artificial intelligence and digital twin technology).

Next, SHM 2.0 is placed within the broader context of digital transformation, discussing its implications for engineering infrastructure, the principles of Industry 4.0, and cyber-physical systems for structural monitoring.

Finally, the presentation reviews the key technologies enabling SHM 2.0, including smart sensors and distributed sensing, the Internet of Things (IoT), edge computing, cloud platforms, big data analytics, and artificial intelligence for damage detection and prediction.

The presentation concludes that SHM is evolving from a stand-alone monitoring technology to a key component of digital infrastructure management. By integrating smart sensing, IoT, edge and cloud computing, artificial intelligence, and digital twins, SHM 2.0 supports the development of resilient, data-driven infrastructure aligned with Industry 4.0 principles.

PLENARY SPEAKERS



Prof. Hui Li
CAE Academician, China
Harbin Institute of Technology, China

Biography

Professor in civil engineering and computer science at Harbin Institute of Technology. She is an academician of the Chinese Academy of Engineering and a member of the World Academy of Sciences. Her interests include structural health monitoring, AI for Science and Engineering, and Metamaterials. She is the former president of IASCM. She is the coauthors of more than 200 papers (Science, nature, etc) and keynote lectures. She is the receipt of ASCE G W Housner Medal and ASCE R H Scanlan Medal.

Foundation Model for Structure Health Monitoring

Abstract:

AI make a big step for structural health monitoring (SHM) from distributed sensing technology to data science in SHM. We introduce a big model for structural maintenance in this talk, which includes AI design method for structural health monitoring system, integration of vision model, multimode data model for damage detection and condition assessment, wind effect identification and evaluation model, earthquake damage evaluation, ship collision identification and warning model, and other effects model, the maintenance policy and strategy model. The digital twin model is also integrated into the big model. Embedded intelligent agents for structural maintenance is presented. Finally, the applications of the AI technology in bridges are introduced

PLENARY SPEAKERS



Prof. Tony T.Y. Yang

Fellow of the Canadian Academy of Engineering, Canada
The University of British Columbia, Canada

Biography

Fellow of Canadian Academy of Engineering, Director of Smart Infrastructure and Construction Research Excellence cluster and a Professor in the Department of Civil Engineering at The University of British Columbia. Prof. Yang is a world-renowned researcher acclaimed for his ground-breaking innovation in performance-based design, structural simulation and testing, robotic inspection and construction and high-performance, carbon-neutral and resilient infrastructure. Prof. Yang is one of the

19 voting members of the Standing Committee for Earthquake Design, which is responsible for writing the seismic design provision of the 2020/2025 National Building Code of Canada (NBCC). Prof. Yang is also a committee member of S16, which is responsible for writing the design provision of steel structures in the Canada. Prof. Yang's work has been well recognized by his colleagues, he is the recipient of the 2020 Meritorious achievement award from Engineers & Geoscientists British Columbia Canada, which is the highest achievement award given to a professional engineer (P. Eng.) in British Columbia, Canada, 2019 Technology award from the New Zealand Concrete Society and the 2014 CISC H.A. Krentz award for the highest impacted steel research from the Canadian Institute of Steel Construction.

From Mechanics to Intelligence: Closing the Loop for Structural Health Monitoring to Intelligent Construction

Abstract:

Structural health monitoring is evolving from passive measurement toward an integrated framework in which structural behavior can be understood, sensed, interpreted, and ultimately used to support engineering decisions. Achieving this vision requires more than advances in sensing or artificial intelligence alone. It requires a fundamental understanding of structural mechanics, reliable simulation and experimental validation, intelligent data interpretation, and mechanisms for translating observed structural conditions into actionable decisions.

This research presents an integrated perspective on the development of next-generation smart and resilient infrastructure, drawing upon research spanning innovative structural systems, advanced nonlinear simulation, large-scale experimental testing, artificial intelligence, autonomous inspection, digital technologies, and automated construction. We first demonstrate how mechanics-based structural design, high-fidelity simulation, and experimental testing establish the physical foundation for understanding structural response, damage mechanisms, and performance indicators. These capabilities provide essential knowledge for identifying what should be monitored and how measured changes should be interpreted. Building upon this foundation, how emerging sensing, computer vision, deep learning, robotic platforms, and autonomous aerial and ground vehicles can transform structural inspection and post-disaster assessment will be discussed. Examples include automated damage recognition and segmentation, three-dimensional damage characterization, autonomous navigation and inspection, and rapid structural condition assessment. These developments illustrate the transition from conventional observation toward scalable and intelligent structural health monitoring. Finally, how structural models, sensing information, artificial intelligence, digital twins, and automated systems can be integrated into a closed-loop framework connecting design, construction, operation, assessment, and intervention will be explored. Rather than treating structural health monitoring as an isolated inspection task, this perspective positions SHM as the intelligence layer of future infrastructure, continuously linking physical understanding with digital information and engineering action. Such integration provides a pathway toward infrastructure that is not only safer and more resilient, but also smarter, more adaptive, and more sustainable throughout its lifecycle.

PLENARY SPEAKERS



Prof. Ching-Tai Ng

Adelaide University, Australia

Biography

Professor and Academic Lead (Research) in the School of Civil Engineering and Construction Management at Adelaide University. He served as Deputy Head of School in 2017, Director of Graduate Studies in the Faculty of Engineering, Computer & Mathematical Sciences from 2018 to 2022, and Associate Dean of Graduate Studies in the Faculty of Sciences, Engineering and Technology at The University of Adelaide from 2023 to 2025. He earned his B.Eng. with First-class Honours

and M.Phil. from the City University of Hong Kong, and his Ph.D. from The University of Queensland. His research interests include Structural Health Monitoring (SHM), nondestructive evaluation (NDE), ultrasonic guided waves, wave propagation, vibration testing, modal analysis and system identification. Prof. Ng exerts significant professional influence worldwide through his involvement in technical committees, conference organisation, and journal and competitive grant refereeing. He is the Co-Editor-in-Chief of Engineering Structures (Elsevier), Associate Editor of Structural Health Monitoring (SAGE) and Ultrasonics (Elsevier). He is a Council Member of the International Society for Structural Health Monitoring of Intelligent Infrastructure (ISHMII), and an Executive Committee Member of the Australian Network of Structural Health Monitoring (ANSHM).

Ultrasonic Guided Waves for Structural Health Monitoring: From Linear Foundations to Nonlinear Frontiers

Abstract:

Ultrasonic guided waves have become an attractive technology for long-range non-destructive evaluation and structural health monitoring, enabling efficient inspection of relatively large and geometrically complex structures from limited access points. This talk discusses the evolution of guided wave methodologies from their linear origins to the expanding frontier of nonlinear approaches, offering a broad perspective on the physical principles, methodological advances, and outlook for the field.

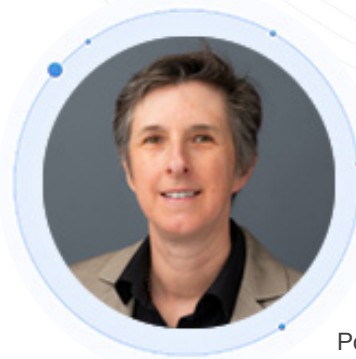
The presentation begins with the foundational concepts of linear ultrasonic guided wave propagation and key developments in the field. It then transitions to nonlinear ultrasonic guided wave techniques, which have attracted growing interest because of their potential to detect incipient and micro-scale damage that often escapes conventional linear inspection. The discussion will explore several nonlinear paradigms, including higher harmonic generation, combinational harmonic generation through wave mixing, and quasi-static component responses, examining their respective physical origins, capabilities, and limitations.

The talk will also address the broader challenges associated with the development and application of these techniques, such as environmental variability, instrumentation requirements, and complexity of signal interpretation. Finally, it will reflect on future directions for the field. Through this overview, the presentation aims to provide a cohesive roadmap of where guided wave-based structural health monitoring stands today and where it may be headed in the coming years.

PLENARY SPEAKERS

Prof. Kara Peters

North Carolina State University, The United States of America



Biography

Distinguished Professor of Aerospace Engineering at North Carolina State University and the Associate Dean for Graduate Programs and Postdoctoral Affairs in the College of Engineering. Following her PhD, Dr. Peters worked as Post-Doctoral Researcher in the Laboratory of Applied Mechanics at the Ecole Polytechnique Fédérale de Lausanne (Swiss Institute of Technology at Lausanne). Dr. Peters is a fellow of SPIE and ASME. She is the deputy editor of the journal Applied Optics.

From 2015-2018, Dr. Peters served as a rotator as the Program Manager of the Mechanics of Materials and Structures Program at the National Science Foundation. Dr. Peters' research focuses on the development of new experimental mechanics techniques for extreme environments. Many of the techniques are based on optical fiber sensors. Most recently her laboratory has investigated the use of acousto-optic effects in optical fibers for health monitoring of structures based on ultrasound wave propagation. This research has led to advances in the measurement of the conversion of structural acoustic modes into sensors and signal amplification devices.

Acoustic-Optical Interactions in Fibers for Ultrasonic Inspection of Structures

Abstract:

Optical fibers are one example of waveguides that can transmit multi-modal information. This information can be encoded in different optical modes in a multi-mode fiber or different wavelengths. For example, optical fibers have also recently been demonstrated to be excellent waveguide for acoustic modes in addition to lightwaves. This presentation will explore how acoustic modes (for example ultrasonic Lamb waves) can be converted into longitudinal modes in optical fibers and propagated along the fiber. This means that sensing does not have to be performed at the location that the optical fiber is bonded to the structure but instead can be performed at a remote location. These modes can be transmitted to different sensor locations within the optical fiber and processing can be performed through acousto-optic behaviors. This presentation discusses the physical characteristics of these optical fiber acoustic modes and their use to increase the signal to noise ratio of the collection of Lamb wave information for Structural Health Monitoring applications. Experimental verifications of the physical behavior of these modes and their relation to guided modes in structures using micro-laser Doppler vibrometry is also presented.

PLENARY SPEAKERS

Prof. Jinkyu Yang

Seoul National University, Republic of Korea



Biography

Jinkyu "JK" Yang is a Professor in the Department of Mechanical Engineering at Seoul National University. Previously, he served as a professor in the Department of Aeronautics & Astronautics at the University of Washington from 2013 to 2022. Dr. Yang earned his Ph.D. and M.S. in Aeronautics & Astronautics from Stanford University and a B.S. from KAIST, Korea. His professional background includes a postdoctoral fellowship at Caltech and industry experience as a Senior Engineer at Samsung Electronics. Dr. Yang also held visiting professorship with Princeton University, CNRS-LAUM, and ETH-Zurich. His research focuses on the development of novel material and structure concepts (e.g., metamaterials, deployable structures), nonlinear structural dynamics, and NDE/SHM technologies. This work has been featured in major media outlets such as Reuters, NSF News, and PBS. Dr. Yang is an AIAA Associate Fellow, an NSF CAREER Award recipient, and an Associate Editor for the AIAA Journal of Aircraft.

Nonlinear Mechanical Metamaterials for SHM and Energy Focusing

Abstract:

Mechanical metamaterials enable unprecedented control over elastic wave propagation. By engineering nonlinear interactions within structured media, highly localized wave packets, such as solitons and rogue waves, can be generated to achieve extreme energy concentration and superior sensitivity to structural changes. This presentation demonstrates the feasibility of leveraging nonlinear mechanical metamaterials and their unique wave dynamics for SHM and targeted energy harvesting. First, I present a nonlinear soliton-based diagnostic method utilizing 1D phononic crystal chains to address the challenges of detecting sub-surface defects like delaminations and weak bonds in composite structures. Solitons generated in granular lattices propagate with compactly supported profiles and stable phase speeds. When interacting with composite plates, reflected and transmitted soliton signals provide distinct diagnostic signatures, offering high sensitivity to hidden delaminations and weak bonding interfaces. Second, I demonstrate the physical realization and control of mechanical rogue waves—spatiotemporally localized extreme events—in 1D nonlinear metamaterial lattices. Utilizing custom nonlinear lattices and high-speed optical tracking, we show how energy focusing can be deterministically triggered or suppressed by adjusting initial excitation profiles. This capability offers promising avenues for high-efficiency energy harvesting, impact mitigation, and advanced wave manipulation. Overall, these findings highlight the strong potential of nonlinear mechanical metamaterials to bridge fundamental nonlinear wave mechanics with advanced SHM and energy management solutions.

KEYNOTE SPEAKERS



Prof. Yuequan Bao
Harbin Institute of Technology



Prof. Wing Chiu
Monash University



Prof. Younho Cho
Pusan National University



Prof. Zheng Fan
Nanyang Technological University



Prof. Evgeny Glushkov
Kuban State University



Prof. Alfredo Guemes
Polytechnic University of Madrid



Prof. Qingbo He
Shanghai Jiao Tong University



Prof. Xiaobin Hong
South China University of Technology



Prof. Ning Hu
Xihua University



Prof. Kyung-Young Jhang
Hanyang University



Prof. Zahra Sharif Khodaei
Imperial College London



Prof. Ying Lei
Xiamen University

KEYNOTE SPEAKERS



Prof. Zheng Li
Peking University



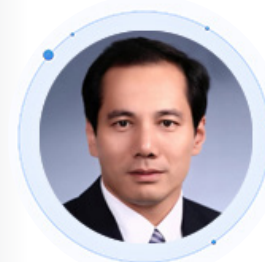
Prof. Zenghua Liu
Beijing University of Technology



Prof. Hideaki Murayama
University of Tokyo



Prof. Gyuhae Park
Chonnam National University



Prof. Xinlin Qing
Xiamen University



Prof. Jinhao QIU
Nanjing University of Aeronautics and Astronautics



Prof. Piervncenzo Rizzo
University of Pittsburgh



Prof. Yang Wang
Georgia Institute of Technology



Prof. Zhanjun Wu
Dalian University of Technology
Jiangnan University



Prof. Xuping Zhang
Nanjing University

CONFERENCE PROGRAM

October 30 – November 2, 2026

Plenary Lectures: October 31 morning and November 1 morning.
Parallel Sessions: October 31 afternoon, November 1 afternoon, and November 2 morning.

Program at a Glance

Date	Time	Activity
Oct 30 (Fri)	18:30-20:00	Registration
Oct 31 (Sat)	08:30–11:30	Opening Ceremony + Plenary Lectures
Oct 31 (Sat)	13:20–17:30	Parallel Sessions
Oct 31 (Sat)	18:30-22:00	Dinner Cruise Bus to Bailianjing Wharf (Shanghai) – Boarding Location: Jeurong Hotel (1/F), Time: 17:45-18:00.
Nov 1 (Sun)	08:30–11:30	Plenary Lectures
Nov 1 (Sun)	13:10–18:00	Parallel Sessions
Nov 1 (Sun)	19:00-20:30	Banquet & Award Ceremony
Nov 2 (Mon)	08:30–11:55	Parallel Sessions

Session Schedule Overview

Saturday, October 31 · Afternoon

Time	Session(s)	Room
13:20-16:40	Session 1: SHM for Advanced Composite Materials	Ballroom (3/F)
13:20-17:15	Session 2: Guided Waves	Grand Ballroom 1 (3/F)
13:20-16:45	Session 3: Nonlinear Ultrasonics	Executive Floor Small Meeting Room (7/F)
13:20-16:45	Session 4: Ultrasonic Imaging Technology and Its Applications	Function Room 2 (3/F)
13:20-17:05	Session 5: Modelling and Numerical Simulation	Function Room 3 (3/F)
13:20-17:15	Session 6: AI & Machine Learning for SHM	Function Room 1 (3/F)
13:20-17:20	Session 7: Ultrasonic Characterization of Aerospace Composite Structures	Function Room 5 (3/F)
13:20-17:30	Session 8: Optical Fiber Sensors and Optical Methods	Executive Floor (7/F)
13:20-16:25	Best Student Presentation Competition	Executive Lounge of Ballroom (3/F)
16:30-17:30	Poster Presentations	Lobby (3/F)
16:30-17:30	International Committee Meeting and Roundtable Discussion	Executive Lounge of Ballroom (3/F)

Sunday, November 1 · Afternoon

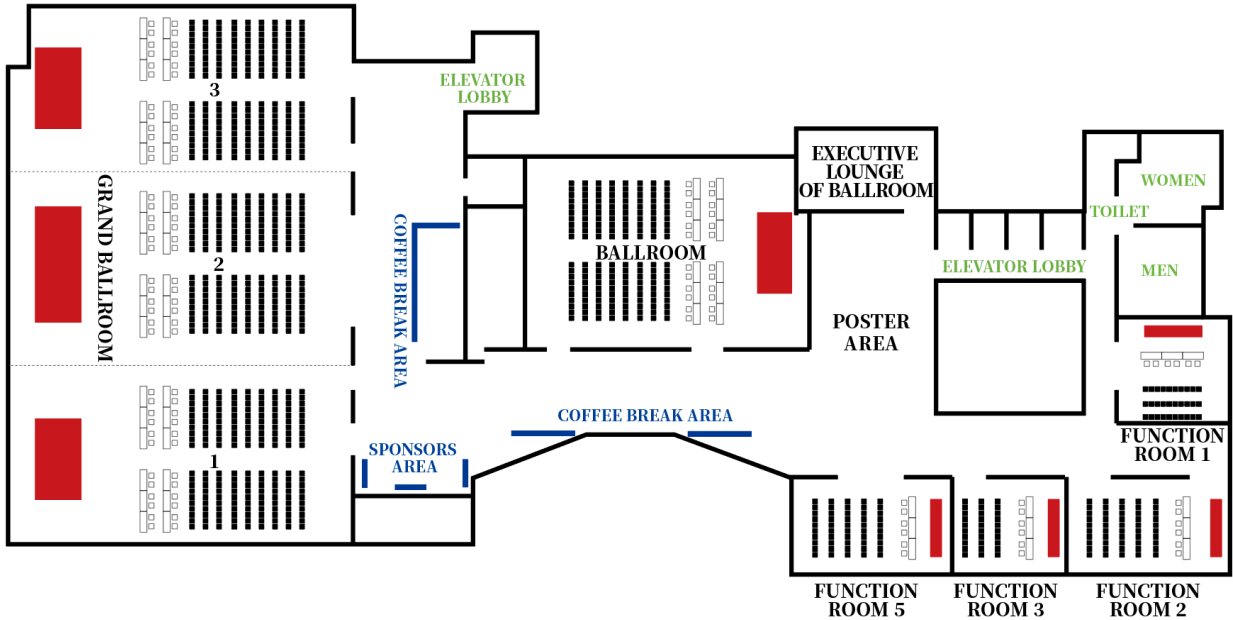
Time	Session(s)	Room
13:10-17:50	Session 9: Metamaterial enhanced SHM and NDE	Function Room 2 (3/F)
13:10-17:50	Session 10: Advanced Ultrasonic Non-Destructive Evaluation Assessment for Renewable Energy Storage, Transport, and Infrastructures	Function Room 5 (3/F)
13:10-16:30	Session 11: Vibration-based Damage Detection	Function Room 3 (3/F)
13:10-17:15	Session 12: Guided-wave-based NDT and SHM	Function Room 1 (3/F)
13:10-17:20	Session 13: SHM for Aerospace Structures	Grand Ballroom 2 (3/F)
13:10-16:30	Session 14: Signal Processing for SHM	Executive Floor (7/F)
13:10-17:15	Session 15: SHM for Civil Structures	Grand Ballroom 3 (3/F)
13:10-18:00	Session 16: Young Scholars Forum on Structural Acoustics and Intelligent Diagnostics	Grand Ballroom 1 (3/F)

Monday, November 2 · Morning

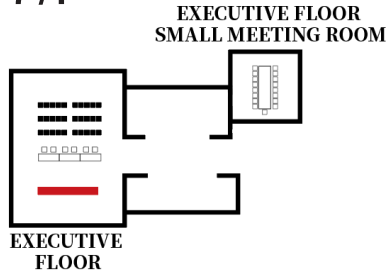
Time	Session(s)	Room
08:30-11:00	Session 17: Risk Monitoring and Assessment of Intelligent Equipment and Systems	Function Room 3 (3/F)
08:30-10:00	Session 18: Artificial Intelligence and Digital Twin	Ballroom (3/F)
08:30-11:00	Session 19: Rapid Post-Disaster Assessment of Civil Infrastructures: Integrating Vision, Digital Twins, and AI	Function Room 2 (3/F)
08:30-10:15	Session 20: Acoustic Emission	Function Room 1 (3/F)
08:30-11:40	Session 21: Impact and Damage Monitoring of Composite Structures	Function Room 5 (3/F)
08:30-11:25	Session 22: Structural Health Monitoring via Data Fusion	Grand Ballroom 3 (3/F)
08:30-11:55	Session 15 →Session 23: Electric and Electromagnetic Sensors	Grand Ballroom 2 (3/F)
08:30-11:45	Session 16 →Session 24: Guided Wave Mechanics and Diagnostics under Variable Environments	Grand Ballroom 1 (3/F)

Layout Map of Conference Rooms

3/F



7/F



CONFERENCE PROGRAM

Saturday, October 31, 2026
Opening Ceremony and Plenary Lecture

Location: GRAND BALLROOM		
Time	Programme	Chair
08:30–09:00	Opening Ceremony Distinguished Guest Remarks	Yanfeng Shen
09:00–09:10	20 th Anniversary Celebration	
09:10–09:50	Plenary Lecture	Wing Chiu
Title	Foundation Model for Structure Health Monitoring	
Speaker	<u>Hui Li</u>	
Affiliation	Harbin Institute of Technology	
09:50–10:05	Coffee Break	
10:05–10:45	Plenary Lecture	Alfredo Guemes
Title	SHM 2.0: Towards Digital Transformation Aligned with Industry 4.0	
Speaker	<u>Wiesław Ostachowicz</u>	
Affiliation	Polish Academy of Sciences	
10:45–11:25	Plenary Lecture	
Title	From Mechanics to Intelligence: Closing the Loop for Structural Health Monitoring to Intelligent Construction	
Speaker	<u>Tony T.Y. Yang</u>	
Affiliation	The University of British Columbia	
12:00–13:30	Lunch Break	

CONFERENCE PROGRAM

Session 1: SHM for Advanced Composite Materials

Chairs: Bin Yang, Qi Wu 13:20-16:40, Saturday, October 31 Location: Ballroom (3/F)	
13:20–13:50	Keynote Lecture Title Machine Learning and Artificial Intelligence Enabled SHM for Composite Structures Authors <u>Xinlin Qing</u> Affiliation Xiamen University
13:50–14:10	Invited Lecture Title Laser-induced Graphene Enabled Multi-dimensional Structures and Devices for Smart Composites Authors <u>Sida Luo</u> Affiliation Beihang University
14:10–14:25	Oral Presentation Title Development of CNT-au Composite Coatings of Optical Fibers for High-temperature Ultrasonic Sensing Authors <u>Chuanheng Xu</u> , Dai Kobayashi, Yoji Okabe Affiliation The University of Tokyo
14:25–14:40	Oral Presentation Title Hygrothermal and Mechanical Damage Evolution of Cfrp for Structural Health Assessment Authors <u>Di Zhou</u> Affiliation Donghua University
14:40–14:55	Oral Presentation Title Detection of Internal Damage in Composite Honeycomb Sandwich Structures Using Laser-ultrasonic Guided Waves Authors <u>Weikun Chen</u> , Osamu Saito, Yoji Okabe Affiliation The University of Tokyo
14:55–15:10	Oral Presentation Title Vertically Coupled FsFBG Acoustic Emission Sensing for High-temperature Guide Vanes Authors <u>Shengming Cui</u> , Qi Wu, Yuxi Zhang, Junbao Yu Affiliation Nanjing University of Aeronautics and Astronautics
15:10–15:25	Coffee Break
15:25–15:55	Keynote Lecture Title SHM of COPV by FOS and ML Algorithms Authors <u>Alfredo Guemes</u> Affiliation Universidad Politécnica de Madrid
15:55–16:10	Oral Presentation Title Damage Identification for Composite Structure by Electrical Impedance Tomography and Parametric Level Set Method Authors <u>Hongtian Zheng</u> , Gang Yan, Deng Zhou Affiliation Nanjing University of Aeronautics and Astronautics
16:10–16:25	Oral Presentation Title Microwave Reflection Imaging and Quantitative Characterization of Deep Flat-bottom Hole Defects in Thick GFRP Composites Authors Zenghua Liu, <u>Chenqi Zhang</u> , Rui Li Affiliation Beijing University of Technology
16:25–16:40	Oral Presentation Title CTDA-convkan: a Channel-temporal Dual Attention Network for Ultrasonic Guided Wave-based Bolt Preload Quantitative Characterization Authors <u>Peiyuan Liu</u> , Hu Sun Affiliation Xiamen University
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 2: Guided Waves

Chairs: Zenghua Liu, Xiaobin Hong, Mingfang Zheng, Xudong Niu 13:20-17:15, Saturday, October 31 Location: Grand Ballroom 1 (3/F)	
13:20–13:50	Keynote Lecture Title Full-position Focusing Transfer Detection Using Ultrasonic Guided Waves Authors Xiaobin Hong Affiliation South China University of Technology
13:50–14:10	Invited Lecture Title Embedded Passive Guided Wave Tomography for Structural Health Monitoring Authors Tom Druet, Arnaud Recoquillay , Victor Petitot-Commisso, Clément Fisher, Raphaël Carpine, Bastien Chapuis Affiliation CEA List
14:10–14:25	Oral Presentation Title Optimizing Contactless Air-coupled and Laser-optic Technologies for Guided Wave Inspection of Anisotropic Composites Authors Olga Ermolenko Affiliation Kuban State University
14:25–14:40	Oral Presentation Title Real-frequency Dispersion as a Restriction of the Complex Spectrum: Exceptional Points and Mode Identity Uniqueness Authors Dong Xiao , Zahra Sharif Khodaei, M.H. Aliabadi Affiliation Imperial College London
14:40–14:55	Oral Presentation Title Damage Detection in Sandwich Structure Using Laser Sensing of Coda Waves Authors Luis Paulo M. Lima , Gyuhae Park Affiliation Chonnam National University
14:55–15:10	Oral Presentation Title Structural Health Monitoring of BONE Healing Using Multimode Guided Waves Authors Ziyao Zhao Affiliation Polish Academy of Sciences
15:10–15:25	Coffee Break

Session 2: Guided Waves (Cont.)

Chairs: Zenghua Liu, Xiaobin Hong, Mingfang Zheng, Xudong Niu 13:20-17:15, Saturday, October 31 Location: Grand Ballroom 1 (3/F)	
15:25–15:55	Keynote Lecture Title Intelligent Damage Localization and Full Wavefield Imaging Using Ultrasonic Guided Waves Authors Zenghua Liu Affiliation Beijing University of Technology
15:55–16:15	Invited Lecture Title Resonance Guided WAVE Diagnostics of Layered Materials Authors Natalia V. Glushkova Affiliation Kuban State University
16:15–16:30	Oral Presentation Title Receiver-dependent Damage-sensing Channel Inversion Induced by a Single-sided Metastructure in Lamb-wave Monitoring Authors Jiannan Zhang , Younho Cho Affiliation Pusan National University
16:30–16:45	Oral Presentation Title SAFE-WFR: a Physics-based Analytical Framework for PWAS-coupled Guided Wave Prediction in Composite Laminates Authors Shuai Zhou , Yanfeng Shen Affiliation Shanghai Jiao Tong University
16:45–17:00	Oral Presentation Title Guided Wave Forward Prediction Using a Dual-mode Envelope-carrier Spectral Propagator Authors Jiashuo Wang , Zhi Luo, Shaoping Zhou Affiliation East China University of Science and Technology
17:00–17:15	Oral Presentation Title Quantitative Inversion of Coating Debonding Sizes Using Pulse Compression Surface Waves Authors Mengqi Su , Zenghua Liu, Xin Zhao Affiliation Beijing University of Technology
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 3: Nonlinear Ultrasonics

Chairs: Weibin Li, Kai Wang 13:20-16:45, Saturday, October 31 Location: Executive Floor Small Meeting Room (7/F)	
13:20–13:50	Keynote Lecture Title Damage Inspection and Monitoring Based on Zero-frequency Mode of Nonlinear Lamb Waves Authors Ning Hu Affiliation Xihua University
13:50–14:10	Invited Lecture Title Multifunctional-metasurface-assisted Impact Damage Detection for Composite Structures via Nonlinear Guided Wave Manipulation Authors Shengbo Shan , Yuxi Guo, Xin Fang, Li Cheng Affiliation National University of Defense Technology
14:10–14:25	Oral Presentation Title Directional Characteristics of Mixed-frequency Guided-wave Scatterings from delamination sites in Composite Panels Authors Houfu Jiang , Yanfeng Shen Affiliation Shanghai Jiao Tong University
14:25–14:40	Oral Presentation Title Local Anti-resonance Enabled Nonreciprocal Nonlinear Guided Waves for Damage Diagnosis Authors Jiarui Deng , Kai Wang, Qingping Kang, Hongyi Luo, Yujian Chen, Chao Yuan, Xurui Jian, Ruiqi Guan Affiliation Xiamen University
15:10–15:25	Coffee Break
15:25–15:55	Keynote Lecture Title New Technology for Measuring Acoustic Nonlinearity Parameters Using the Pulse-echo Method Authors Kyung Young Jhang Affiliation Hanyang University
15:55–16:15	Invited Lecture Title Fully Noncontact Quantification of Bolt Loosening Across Elastic–Plastic Contact Regimes via Nonlinear Modulation Authors Jianbin Li , Zhen Zhang, Zhongqing Su Affiliation Tongji University
16:15–16:30	Oral Presentation Title Static-component Generation of Circumferential Feature-guided Waves in High-attenuative Pipe with Geometric Discontinuities Authors Xinyi Yuan , Yunqi Yu, Zifeng Lan, Mingxi Deng, Weibin Li Affiliation Xiamen University
16:30–16:45	Oral Presentation Title Dispersion-curve-free Automatic Identification of the Phase-velocity-matching Frequency for Nonlinear Lamb-wave Testing of Heat-resistant Steel Authors Dequan Ma , Jingpin Jiao Affiliation Beijing University of Technology
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 4: Ultrasonic Imaging Technology and Its Applications

Chairs: Wentao Wang, Jiaze He, Li Lin, Dongdong Chen 13:20-17:00, Saturday, October 31 Location: Function Room 2 (3/F)	
13:20–13:50	Keynote Lecture Title Is AI a Game Changer in SHM? Authors Younho Cho , Igor Sakhabiev Affiliation Pusan National University
13:50–14:10	Invited Lecture Title Monitoring and Characterization of Ultrasonic Fatigue Damage in Metals Based on Internal Friction Measurement Authors Faxin Li , Bofeng Liu Affiliation Peking University
14:10–14:30	Invited Lecture Title Air-Coupled Ultrasonic Imaging of Defects and Blockages: Methods and Applications Authors Xudong Niu Affiliation Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences
14:30–14:50	Invited Lecture Title Physics Guided Ultrasonic Echo Separation for Thin Layer Structural Inspection Authors Yan Lyu, Jinge Lyu , Jie Gao Affiliation Beijing University of Technology
14:50–15:05	Oral Presentation Title Direct Young’s Modulus Imaging of an Aluminum Plate Using Guided-wave Full-waveform Inversion Authors Jiaze He, Xinyi Zou Affiliation Harbin Institute of Technology
15:10–15:25	Coffee Break
15:25–15:55	Keynote Lecture Title SHM-agents: an Agent System for Structural Health Monitoring Authors Yuequan Bao Affiliation Harbin Institute of Technology
15:55–16:15	Invited Lecture Title Quantitative Super-resolution Guided Wave Array Imaging Us-ing a Variational Bayesian Deep Learning Approach Authors Yongchao Yang , Homin Song Affiliation Harbin Institute of Technology
16:15–16:30	Oral Presentation Title High-resolution PA-TOFD Imaging of Sub-millimeter Cracks in Thick Inertia Friction Welds Authors Yankai Li , Xudong Yu, Tingyu Luo, Mingxi Deng, Ming Huang Affiliation Beihang University
16:30–16:45	Oral Presentation Title Analytical Modeling and Experimental Validation of AIR-coupled Lamb Wave Damage Detection Authors Haoyu Fu , Yanfeng Shen, Zixin Wang Affiliation Shanghai Jiao Tong University
16:45–17:00	Oral Presentation Title Passive structural damage imaging under non-diffuse ambient noise via cross-term correlations Authors Shilong Han , Xun Wang Affiliation Beihang University
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 5: Modelling and Numerical Simulation

Chairs: Yang Liu, Lei Zhang, Haoran Jin, Xinliang Liu 13:20-17:05, Saturday, October 31 Location: Function Room 3 (3/F)	
13:20–13:50	Keynote Lecture Title SEMI-analytical Green's Matrix Approach for Modeling WAVE Propagation in Layered Structures Authors Evgeny V. Glushkov Affiliation Kuban State University
13:50–14:10	Invited Lecture Title Multigrid Neural Operators for Helmholtz Preconditioning and Diff-ANO Guided UCST Inversion Authors Xinliang Liu Affiliation SLAI
14:10–14:25	Oral Presentation Title Influence of Rail Curvature on Ultrasonic Crack Detectability Authors Mikhail Gorkovets , Alena Favorskaya, Vasily Golubev, Nikolay Khokhlov, Artem Eremin, Igor Petrov Affiliation Moscow Institute of Physics and Technology
14:25–14:40	Oral Presentation Title Local Bridge Damage Identification Using Moving Contact-point Deflection LINE Perturbations Authors Jie Xing , Zhilu Wang Affiliation Chongqing University
14:40–14:55	Oral Presentation Title Numerical Investigation of Parallel-connected Piezoelectric Coating Network for Distributed Electromechanical Impedance Sensing Authors Songshi Li , Yanfeng Shen Affiliation Shanghai Jiao Tong University
14:55–15:10	Oral Presentation Title Computation of Guided Wave Dispersion Curves for Anisotropic Laminated Composite Panels via Local Interaction Simulation Approach Authors Lang Qin , Chenye Cao, Tianxing Ma, Yanfeng Shen Affiliation Shanghai Jiao Tong University
15:10–15:25	Coffee Break
15:25–15:45	Invited Lecture Title Inverse Scattering for Three-dimensional Random Obstacles with Multi-frequency Data Authors Yiwen Lin Affiliation Shanghai Jiao Tong University
15:45–16:05	Invited Lecture Title Unveiling the Wavelength-dependent Size Effect on the Ultrasonic Response of Nanocomposite Sensors Authors Pengfei Li , Qi Yuan, Diwu Jiang, Zhongqing Su, Chao Xu Affiliation Northwestern Polytechnical University
16:05–16:20	Oral Presentation Title In Situ Monitoring of Residual Stresses Developed During Fusion Deposition Modelling of Multiphase Filament Using Finite Element Analysis Authors Michel Zakharia , Mohammad Harb Affiliation American University of Beirut
16:20–16:35	Oral Presentation Title Photo Realistic Simulation for Quantitative Evaluation of Computer Vision Based Sensing Techniques Authors Yanru Ke , Kevin Nolan, Ekin Ozer Affiliation University College Dublin
16:35–16:50	Oral Presentation Title Near-edge Interfacial Response in Bonded and Cohesive Bone-implant Interface Models Authors Shuangkai Zhu , L. R. Francis Rose, Peter R Ebeling, Wing Kong Chiu Affiliation Monash University
16:50–17:05	Oral Presentation Title Three-dimensional Local Interaction Simulation for Acoustic Wave Equation with Perfectly Matched Layer Authors Tailong Jin , Lei Zhang, Yanfeng Shen Affiliation Shanghai Jiao Tong University
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 6: AI & Machine Learning for SHM

Chairs: Fucai Li, Yue Hu, Yanping Zhu 13:20-17:15, Saturday, October 31 Location: Function Room 1 (3/F)	
13:20–13:50	Keynote Lecture Title Structural health monitoring of ship structures Authors Hideaki Murayama Affiliation The University of Tokyo
13:50–14:10	Invited Lecture Title Physics-constrained Granger Causality Analysis for Lamb Wave-based Damage Localization of Aero-engine Blades Authors Zhewen Zhang, Jiadong Hua Affiliation Beihang University
14:10–14:25	Oral Presentation Title AI-based Fine Defect Inspection of Painted Electronic Buttons Using BRDF Photometric Stereo Authors Taesan Mo , Penghua Zhang, Junyeong Yun, Yeseul Kong, Gyuhae Park Affiliation Chonnam National University
14:25–14:40	Oral Presentation Title A Sparse Reconstruction Method for Ultrasonic Guided Wave Dispersion Curves Based on GCM Authors Yanping Zhu, Yingxuan Guo, Meiling Wang , Zenghua Liu Affiliation Beijing University of Technology
14:40–14:55	Oral Presentation Title Leakage-rate Prediction of Flange Joints Using FBG Sensing and RA-DNN Surrogate Model Authors Yun Tu Affiliation East China University of Science and Technology
14:55–15:10	Oral Presentation Title An Intelligent Vibration-guided-wave Fusion on Non-destructive Testing Method for Stiffened Panels Authors Zhaoxu Lu , Zheng Li Affiliation Peking University
15:10–15:25	Coffee Break

Session 6: AI & Machine Learning for SHM (Cont.)

Chairs: Fucai Li, Yue Hu, Yanping Zhu 13:20-17:15, Saturday, October 31 Location: Function Room 1 (3/F)	
15:25–15:45	Invited Lecture Title Parameter-efficient Rule-conditioned Vision–language Detection of Temporary Structural Risks Authors Peiwei Lin, Xiaotong Tu Affiliation Xiamen University
15:45–16:00	Oral Presentation Title BG-gatedformer: Boundary-guided and Gated Context-enhanced Network for Vision-based Steel Surface Defect Segmentation Authors Xiao Wang , JiuHong Jia, Yiqing Gu, Yaokai Li, Yibo Wang Affiliation East China University of Science and Technology
16:00–16:15	Oral Presentation Title Physics-guided Neural Network with DUAL-HEAD for BOLT Tightness Evaluation Using Acoustic Emission Authors Jiaying Sun , Jianyue Wang, Chao Xu Affiliation Northwestern Polytechnical University
16:15–16:30	Oral Presentation Title Physics-encoded Unsupervised Deep Learning for Lightweight Structural Health Monitoring of Short and Medium-span Bridge Networks Authors Jiaxin Liu , Limin Sun, Yixian Li Affiliation Tongji University
16:30–16:45	Oral Presentation Title Domain Adaptation-based Transfer Learning Method for Civil SHM DATA Anomaly Detection Authors Ningyu Qin , Jie Wu Affiliation Tongji University
16:45–17:00	Oral Presentation Title Defect Detection of Free-form Surface Objects with Dry-coupled Scanning Ultrasonic Probe Authors Guangrui Xia, Hao Chen, Dashuai Su, Yijun Shen , Yang Zhang Affiliation Shanghai Jiao Tong University
17:00–17:15	Oral Presentation Title Physics-Constrained Model for Multi-Material Impact Force Reconstruction Authors Bowen Zhao Affiliation Lanzhou Jiaotong University
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 7: Ultrasonic Characterization of Aerospace Composite Structures

Chairs: Zhen Zhang, Menglong Liu 13:20-17:20, Saturday, October 31 Location: Function Room 5 (3/F)	
13:20–13:50	Keynote Lecture Title Low-velocity Impact Monitoring of Composite Thin-walled Structures Based on Cluster-Based Sensing Authors Zhanjun Wu Affiliation Dalian University of Technology
13:50–14:10	Invited Lecture Title Physics-informed Identification of Anisotropic Thermal Conductivities in CFRP Laminates Authors Peipei Liu , Yanfeng Niu, Liu Yang, Yao Zhang, Yang Yang, Zhao-Dong Xu Affiliation Southeast University
14:10–14:25	Oral Presentation Title Intelligent Hybrid Defect Detection in Thick CFRP Structures via Multi-frequency Enhancement and Multimodal Modeling Authors Haifeng Xu , Rongyao Li, Fupeng Ni, Zhen Zhang, Qian Li Affiliation Tongji University
14:25–14:40	Oral Presentation Title Modeling Ultrasonic Attenuation for Health Monitoring of Ceramic Matrix Composite in Aircraft Authors Xin Gong , Zhongqing Su Affiliation The Hong Kong Polytechnic University
14:40–14:55	Oral Presentation Title Floquet-based Ultrasonic Total Focusing Imaging for CFRP Laminates with Different Stacking Sequences Authors Yiling Zou , Jiaxing Tian, Menglong Liu Affiliation Harbin Institute of Technology
14:55–15:10	Oral Presentation Title Ultrasonic Structural Health Monitoring for Hybrid Defects in 3D-printed Honeycomb Sandwich Structures Authors Juan Jin , Zhen Zhang Affiliation Tongji University
15:10–15:25	Coffee Break
15:25–15:55	Keynote Lecture Title Fatigue Life Prediction of Composite Laminates Using Laser Ultrasonics and Neural-network-based Damage Modeling Authors Jinhao Qiu , Hongli Ji, Chao Zhang, Chongcong Tao Affiliation Nanjing University of Aeronautics and Astronautics
15:55–16:15	Invited Lecture Title Computation of Guided Wave in Composite Laminate and Pipe with Semi-analytical Finite Element Method Authors Menglong Liu , Chuang Huang Affiliation Harbin Institute of Technology
16:15–16:35	Invited Lecture Title Ultrasonic Characterization of Hybrid Defects in Thick Composite Structures Authors Zhen Zhang Affiliation Tongji University
16:35–16:50	Oral Presentation Title A GPU-accelerated Large-scale Finite Element Modeling of WAVE Propagation in Complex Materials Authors Wanyu Miao , Menglong Liu Affiliation Harbin Institute of Technology
16:50–17:05	Oral Presentation Title Ultrasonic Characterization of CFRP Interfaces Considering Porosity and Geometrical NON-uniformity Authors Haorun Xu , Zhen Zhang, Qian Li Affiliation Tongji University
17:05–17:20	Oral Presentation Title Delamination Imaging in Composite Pipes Using Nonlinear Ultrasonic Guided Waves Authors Min Gao , Menglong Liu Affiliation Harbin Institute of Technology
18:30–22:00	Dinner Cruise

CONFERENCE PROGRAM

Session 8: Optical Fiber Sensors and Optical Methods

Chairs: Yishou Wang, Chunliu Zhao, Yunze He, Jianguo Zhu 13:20-17:30, Saturday, October 31 Location: Executive Floor (7/F)	
13:20–13:50	Keynote Lecture Title Distributed optical fiber sensing technology and its application On Structural Health Monitoring Authors Xuping Zhang , Yixin Zhang, Huawen Chen Affiliation Nanjing University
13:50–14:10	Invited Lecture Title Toward Digital Representation of Distributed Fiber Optic Sensing Networks for iFEM Authors Yingwu Li , Xiang Ji, Yimin Zhou, Jiaqing Ren, Tong Wu, Xinyang Li Affiliation Beijing Institute of Technology
14:10–14:25	Oral Presentation Title Ultrasonic Guided Waves Measurement under Harsh Environments Using Bragg Gratings on Optical Fibers Authors Antoine Gallet, Arnaud Recoquillay , Nicolas Roussel, Bastien Chapuis, Guillaume Laffont Affiliation CEA List
14:25–14:40	Oral Presentation Title Physics-informed Diffusion Model with TV-RPCA for Delamination Damage Identification in CFRP Plates Using Sparse FBG Measurements Authors Hao Yao , Jinsong Yang, Xiaozhen Zhang Affiliation Central South University
14:40–14:55	Oral Presentation Title Large-scale Shape Sensing Using Multicore Fiber Cable Based on Integrated Weak Fiber Bragg Grating Arrays Authors Chunliu Zhao, Haoran Gao , Dongyou Yu Affiliation China Jiliang University
14:55–15:10	Oral Presentation Title Crack Damage Identification of Plate Structures Using IFEM with Bayesian Inference Authors Bingyu Chen , Tianxiang Huang, Kan Chen, Zhining Zhang Affiliation Nanjing University of Aeronautics and Astronautics
15:10–15:25	Coffee Break
15:25–15:55	Keynote Lecture Title Camera-based Sensing for Structural Monitoring: from Laboratory Research to Field Applications Authors Gyuhae Park , Yinan Miao, Yeseul Kong, Seunghwan Lee Affiliation Chonnam National University
15:55–16:15	Invited Lecture Title Advances in Rapid and Precise Cable Force Identification Using Novel Sensing Approaches Authors Lin Chen , Shikang Wu, Zhiqiang Shang Affiliation Tongji University
16:15–16:35	Invited Lecture Title Distributed Fiber-optic Ultrasonic Sensor with Centimeter Spatial Resolution Authors Qingwen Liu , Rongrong Niu, Zuyuan He Affiliation Shanghai Jiao Tong University
16:35–16:55	Invited Lecture Title Phase-optimized Sampling Moiré for Vision-based Local Vibration Measurement Authors Yinan Miao , Jiabin Zhou, Gyuhae Park Affiliation Zhejiang Sci-Tech University
16:55–17:15	Invited Lecture Title Parameter Optimization and PCA Fusion of Continuous Laser-line Scanning Thermography for Multi-depth Interfacial Defect Detection in CFRP Laminates Authors Jiaju Liu , Chaoyi Li, Lijun Zhuo, Jianguo Zhu Affiliation Jiangsu University
17:15–17:30	Oral Presentation Title The Residual Transverse Strain-stress In-situ Monitoring of CFRP Based on a Novel FBG Sensor Birefringence Analysis Method Authors Xiao Liu , Gui Xin, Zhengying Li Affiliation Wuhan University of Technology
18:30–22:00	Dinner Cruise

BEST STUDENT PRESENTATION COMPETITION

Chairs: Best Student Paper Evaluation Committee 13:20-16:25, Saturday, October 31 Location: Executive Lounge of Ballroom (3/F)	
13:20–13:35	Oral Presentation Title Local Anti-resonance Enabled Nonreciprocal Nonlinear Guided Waves for Damage Diagnosis Authors Jiarui Deng , Kai Wang, Qingping Kang, Hongyi Luo, Yujian Chen, Chao Yuan, Xurui Jian, Ruiqi Guan Affiliation Xiamen University
13:35–13:50	Oral Presentation Title Floquet-based Ultrasonic Total Focusing Imaging for CFRP Laminates with Different Stacking Sequences Authors Yiling Zou , Jiaxing Tian, Menglong Liu Affiliation Harbin Institute of Technology
13:50–14:05	Oral Presentation Title Machine Learning for Performance Insights at Western Treatment Plant Authors Massimo Camillo , Wing Chiu, Tim Lu, Thomas Kuen Affiliation Monash University
14:05–14:20	Oral Presentation Title Multifunctional Aircraft Composites Integrating Load-bearing, Energy Storage, and Health Monitoring Authors Zetian Wang , Yu Wang, Lei Qiu, Shenfang Yuan Affiliation Nanjing University of Aeronautics and Astronautics
14:20–14:35	Oral Presentation Title Single Metasurface-coded Sensor for 2D Impact Localization in Composite Panels Authors Yuxi Guo , Shengbo Shan, Xin Fang Affiliation National University of Defense Technology
14:35–14:50	Oral Presentation Title Gigahertz Optoacoustic Synthetic-aperture Imaging of Buried Semiconductor Microstructures via Ultrafast Laser-induced Guided Rayleigh Waves Authors Jie Huang , Zhongqing Su, Shuchang Zhang, Guojie Luo, Zaiwei Liu, Qi Yuan, Pengfei Li, Lin Ye, Yi He Affiliation The Hong Kong Polytechnic University
14:50–15:05	Oral Presentation Title Laplace-helmholtz Correspondence for Robust Acoustic Waveguide Cloaking Authors Zihang Guo , Jingjing He Affiliation Beihang University
15:10–15:25	Coffee Break
15:25–15:40	Oral Presentation Title Direct Young's Modulus Imaging of an Aluminum Plate Using Guided-wave Full-waveform Inversion Authors Jiaze He, Xinyi Zou Affiliation Harbin Institute of Technology
15:40–15:55	Oral Presentation Title Structural Health Monitoring of Bone Healing Using Multimode Guided Waves Authors Ziyao Zhao Affiliation Polish Academy of Sciences
15:55–16:10	Oral Presentation Title Ultrasonic Structural Health Monitoring for Hybrid Defects in 3D-printed Honeycomb Sandwich Structures Authors Juan Jin , Zhen Zhang Affiliation Tongji University
16:10–16:25	Oral Presentation Title BG-gatedformer: Boundary-guided and Gated Context-enhanced Network for Vision-based Steel Surface Defect Segmentation Authors Xiao Wang , Jiuhong Jia, Yiqing Gu, Yaokai Li, Yibo Wang Affiliation East China University of Science and Technology
18:30–22:00	Dinner Cruise

POSTER PRESENTATIONS

16:30-17:30, Saturday, October 31 Location: Lobby (3/F)		
01	Title Authors Affiliation	A Physics-prior-enhanced Strain Surrogate Coupled with IFEM For On-orbit Thermal Deformation Monitoring Tianyu Dong , Zhiming Cai, Tao He, Xuliang Duan Innovation Academy for Microsatellites, Chinese Academy of Sciences, Shanghai, China
02	Title Authors Affiliation	GB/T 47559-2026: Release and Future Plan for Tower Monitoring Yang Yang School of Civil Engineering, Chongqing University
03	Title Authors Affiliation	Target-domain-aware Dynamic Multi-view Fusion for Cross-condition Rotating Machinery Diagnosis Junyi Yan , Fei Chen, Yuanhang Wang, Binbin Xu, Fangyuan Wang, Zhikang Huang, Zhuocheng Zhong Shenzhen Technology University
04	Title Authors Affiliation	Multiscale Evidence Enhancement and Reliability-conditioned Distillation for Cross-machine Bearing Fault Diagnosis Zhikang Huang , Junyi Yan, Fangyuan Wang, Zhuocheng Zhong, Fei Chen, Binbin Xu, Yuanhang Wang Shenzhen Technology University
05	Title Authors Affiliation	Development of a Low-cost Structural Health Monitoring System and Pilot Implementation on a Cooling Tower Angela Poposka , Aleksandra Bogdanovic, Igor Markovski, Zoran Rakicevic, Zoran Ivanovski, Miguel Bravo Haro, Dejan Filipovski, Filip Manojlovski, Antonio Shoklarovski, Nikola Jovanovski, Petar Churlinov S.s Cyril and Methodius University in Skopje
06	Title Authors Affiliation	Nonlinear Ultrasonic Guided Waves for Micro-Defect Detection: Mechanisms, Features and Engineering Challenges Run Tian , Xinyu Zhang, Zhonghu Li, Zhen Li, Changzhi He Inner Mongolia University of Science and Technology
07	Title Authors Affiliation	Physics-guided Temporal-channel Clustering for Battery State-Of-Health Estimation Yumeng Lei , Chengjie Wang, Jun Wu, Hong Zhang Huazhong University of Science and Technology
08	Title Authors Affiliation	CFRP Impact Damage Acoustic Emission and Ultrasonic Fusion Evaluation Wei Zhao , Lu Zhang, Feifei Long Dalian Minzu University
09	Title Authors Affiliation	Model-Assisted SH0 Localization of a Remote Defect Behind an Upstream Defect Kaite Li , Xiangnan Xu, Yali Li, Danyao Yu, Jian Yang, Jiayao Liu, Chunlong Geng, Xianpu Zhu, Yifeng Jiang State Grid Electric Power Engineering Research Institute Co., Ltd.
10	Title Authors Affiliation	Fim-sed Sensor Placement for Milling Deformation Reconstruction of Wing-rib Lightning-hole Frames Shikang Zhang , Jiahuan Fang, Jinhua Xue, He Luo, Yingwu Li Beijing Institute of Technology
11	Title Authors Affiliation	Multi-objective Optimization Design and Experimental Verification for Thermal Deformation Suppression of Satellite Main Truss Structure Mingxuan Zheng, Ye Chen Shanghai Institute of Satellite Engineering
12	Title Authors Affiliation	Design of Rectangular Acoustic Black Hole Waveguide Rods for Acoustic Signal Enhancement Shilin Xu , Yun Tu East China University of Science and Technology
13	Title Authors Affiliation	Clustering-assisted Probabilistic Imaging for Lamb Wave-based Multi-damage Localization In Composites Structures Xianping Zeng, Yanpeng Wu , Chaoqi Jiang, Xinyi Yu, Jinmin Peng Fujian University of Technology
14	Title Authors Affiliation	High-Temperature Performance of PAN–PVDF–BTO Flexible Piezoelectric Sensors for Impact Monitoring Tianqi Li , Zhengyan Yang Jiangnan University
15	Title Authors Affiliation	Multi-band electromechanical impedance method for damage distance estimation in composite plates Jingyang Shen , Zheng Hu East China University of Science and Technology
16	Title Authors Affiliation	A Two-stage Self-supervised Framework for Guided-wave Corrosion Assessment Of Civil Aircraft Structures Wenhao Bao , Wang Yu, Lei Qiu, Shenfang Yuan Nanjing University of Aeronautics and Astronautics

POSTER PRESENTATIONS (Cont.)

16:30-17:30, Saturday, October 31 Location: Lobby (3/F)		
17	Title Authors Affiliation	Data-driven Characterization of Nonlinear Interfacial Debonding in Aerospace Thermal Protection Systems Based on Information Entropy Analysis Wenzhong Qu, Qi Jiang Wuhan University
18	Title Authors Affiliation	Multi-source Inspection and Intelligent Diagnosis System for Aerospace Composite Materials Rongyao Li , Haifeng Xu, Zhen Zhang, Zehua Li, Yinan An, Chenwei Tian, Anqing Chen, Chen Yang, Ruixiang Cheng, Peng Chang, Yueyao Wang, Kaizhi Quan Tongji University
19	Title Authors Affiliation	Simulation of Guided Wave Monitoring for Corrosion Damage in Multi-fastener Metallic Structures of Civil Aircraft Xun Kang , Shenfang Yuan Nanjing University of Aeronautics and Astronautics
20	Title Authors Affiliation	Temperature Compensated Ultrasonic State-of-charge Estimation for Embedded Structural Batteries via State-Space Fusion Xinlin Qing, Yuqiang You Xiamen University
21	Title Authors Affiliation	Anomaly Detection of Sluice Health Monitoring Data Based on Bidirectional LSTM Autoencoder Wenjie Xu , Ming Liu Shandong Jianzhu University, Shandong Huantai Water Conservancy Construction and Installation Engineering Corporation
22	Title Authors Affiliation	Effect of Static Compression on Piezoelectric Guided-wave Responses in a Spacecraft Metallic Stiffened Panel Shunbo Liu , Junxian Shen, Yuanqiang Ren Nanjing University of Aeronautics and Astronautics
23	Title Authors Affiliation	Attenuation-Compensated Nonlinear Delay-and-sum Ultrasonic Imaging of Defects in Concrete Structures Hui Zhang, Yutian Liu Shanghai University of Engineering Science
24	Title Authors Affiliation	Satellite Structure Deformation Inversion Technology Based on Radial Basis Function Neural Network Bing Li , Haikuo Peng, Ye Chen, Weiwei Wang, Rongzhou Lin Shanghai Institute of Satellite Engineering
25	Title Authors Affiliation	Long-term Monitoring of Suspended Cable Pedestrian Bridges by GNSS-IoT System Euseung Hwang , Taerim Park, Sanghoom Shin HES Consultant, Ino-On Co., Cable Bridge Co.
26	Title Authors Affiliation	An Aerosol Jet Printed High-piezoelectric Sensor for Acquisition of Dynamic Disturbance Yiyin Su , Zhichao Zheng, Junhui Shi Zhejiang Lab
27	Title Authors Affiliation	Featured Wavenumber Imaging of Weld Defects Based on Laser Ultrasonics Yan Ge , Liang Zeng Xi'an Jiaotong University
28	Title Authors Affiliation	Debonding Detection in Stiffened Composite Panels Using Full-field Guided Wave Velocity Mapping Kai Zhu, Maosen Cao, Wieslaw Ostachowicz, Jiyue Chen, Maciej Radzienski IFFM PAS
29	Title Authors Affiliation	Water immersion ultrasonic scattering technique for non-destructive evaluation of concrete damage Chaojiang Shu , Mingyang Li State Grid Qingyang Power Supply Co.
30	Title Authors Affiliation	Structural perturbation monitoring of 3D-printed stiffened thermoplastic composites empowered by task-specific hierarchical electromechanical impedance sensing Jianjian Zhu , Xiao Yu, Tao Bi Civil Aviation Flight University of China
18:30-22:00 Dinner Cruise		

Saturday, October 31, 2026

INTERNATIONAL COMMITTEE MEETING AND
ROUNDTABLE DISCUSSION

Chairs: Yanfeng Shen, Fuh-Gwo Yuan, Zhongqing Su 16:30-17:30, Saturday, October 31 Location: Executive Lounge of Ballroom (3/F)	
International Committee Members: • All international committee members attending (Refer to Page 2)	
18:30-22:00	Dinner Cruise

CONFERENCE PROGRAM

Plenary Lecture

Location: GRAND BALLROOM		
Time	Programme	Chair
08:30–09:10	Plenary Lecture	Piervincenzo Rizzo
Title	Development of Health Monitoring Techniques for Valves in Process Industries	
Speaker	<u>Shan-Tung Tu</u>	
Affiliation	East China University of Science and Technology	
09:10–09:50	Plenary Lecture	Piervincenzo Rizzo
Title	Acoustic-Optical Interactions in Fibers for Ultrasonic Inspection of Structures	
Speaker	<u>Kara Peters</u>	
Affiliation	North Carolina State University	
09:50–10:05	Coffee Break	Younho Cho
10:05–10:45	Plenary Lecture	
Title	Ultrasonic Guided Waves for Structural Health Monitoring: From Linear Foundations to Nonlinear Frontiers	
Speaker	<u>Ching-Tai Ng</u>	
Affiliation	Adelaide University	
10:45–11:25	Plenary Lecture	Younho Cho
Title	Nonlinear Mechanical Metamaterials for SHM and Energy Focusing	
Speaker	<u>Jinkyu Yang</u>	
Affiliation	Seoul National University	
12:00–13:30	Lunch Break	

CONFERENCE PROGRAM

Session 9: Metamaterial enhanced SHM and NDE

Chairs: Rui Zhu, Bing Li, Shengbo Shan 13:10-17:50, Sunday, November 1 Location: Function Room 2 (3/F)	
13:10–13:40	Keynote Lecture Title On the Use of Highly Nonlinear Solitary Waves for SHM and Nondestructive Evaluation Applications Authors Piervincenzo Rizzo Affiliation University of Pittsburgh
13:40–14:00	Invited Lecture Title Single-sensor Vibration Sensing Enabled by Disordered Elastic Metasurfaces Authors Bing Li Affiliation Northwestern Polytechnical University
14:00–14:20	Invited Lecture Title Metamaterial-enhanced Guided Wave-based Nondestructive Evaluation of Residual Stress Authors Rongyu Xia , Wanbing Zhao Affiliation Sun Yat-sen University
14:20–14:40	Invited Lecture Title Acousto-strictive Metamaterials Based on Pseudo-thermal Expansion and Application to SHM Authors Kan Feng , Mengfan Ren, Zheng Li Affiliation Jiangsu University
14:40–14:55	Oral Presentation Title Dual-functional Graded Narrow-beam Metamaterial for Ultrasonic Nondestructive Evaluation Authors Jiaqi Zhang , Tianxue Ma, Guoshuang Shui Affiliation Beijing Jiaotong University
14:55–15:10	Oral Presentation Title Acoustic Transmission Loss in Metamaterial Shells with Active Feedback Control Authors Teng Ju , Yize Wang Affiliation Tianjin University
15:10–15:25	Coffee Break

Session 9: Metamaterial enhanced SHM and NDE (Cont.)

Chairs: Rui Zhu, Bing Li, Shengbo Shan 13:10-17:50, Sunday, November 1 Location: Function Room 2 (3/F)	
15:25–15:55	Keynote Lecture Title Mechanical Waves Computational Sensing with Meta-structures for Structural Health Monitoring Authors Qingbo He Affiliation Shanghai Jiao Tong University
15:55–16:15	Invited Lecture Title Elastic Computational Metasurfaces for Detecting Subwavelength Defects Authors Yongquan Liu , Guangyuan Su, Zongliang Du Affiliation Xi'an Jiaotong University
16:15–16:35	Invited Lecture Title Metasubstrate-based Piezoelectric Transducers for Controllable Excitation and Reception of SH Guided Wave Authors Hongchen Miao Affiliation Southwest Jiaotong University
16:35–16:50	Oral Presentation Title Bambusa Ventricosa-inspired Stretching-dominated Piezoelectric Metamaterials with Simultaneous Enhancement of Piezoelectric Properties and High Sensitivity Authors Siyuan Ma , Zewei Hou, Jiawang Hong Affiliation Beijing Institute of Technology
16:50–17:05	Oral Presentation Title An Elastic Metamaterial Diode for Unidirectional Guided Wave Transmission via Shear Horizontal Mode Conversion Authors Hexuan Xu , Yanfeng Shen Affiliation Shanghai Jiao Tong University
17:05–17:20	Oral Presentation Title Single Metasurface-coded Sensor for 2D Impact Localization in Composite Panels Authors Yuxi Guo , Shengbo Shan, Xin Fang Affiliation National University of Defense Technology
17:20–17:35	Oral Presentation Title FLAT and Chiral Airborne Landau Rainbow Trappings Authors Xueyun Wen , Jie Zhu Affiliation Tongji University
17:35–17:50	Oral Presentation Title Programmable Topological Edge-state Regulation in Elastic Plate Lattices via Orbital-like Flexural Modes and Internal Modal Subspaces Authors Fan Yang , Rui Zhu Affiliation Beijing Institute of Technology
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 10: Advanced Ultrasonic Non-Destructive Evaluation Assessment for Renewable Energy Storage, Transport, and Infrastructures

Chairs: Fan Shi, Shifeng Guo, Xudong Yu 13:10-17:50, Sunday, November 1 Location: Function Room 5 (3/F)	
13:10–13:40	Keynote Lecture Title Quantitative Ultrasonic Diagnostics for Infrastructure, Advanced Manufacturing, and Energy Storage Authors Zheng Fan Affiliation Nanyang Technological University
13:40–14:00	Invited Lecture Title Ultrasonic Non-destructive Evaluation and Imaging for Li-ion Batteries Authors Fan Shi , Wuke Xu, Qin Chen, Dantong Zhang, Hualin Zhang, Xinyu Chen Affiliation The Hong Kong University of Science and Technology
14:00–14:20	Invited Lecture Title Non-contact Laser-ultrasonic In-situ Measurement of Mechanical Properties of Heterogeneous Multilayered Packaging Materials Authors Huangqing Cao , Zhijun Yao, Qimin Zhu, Peihan Zhao, Shifeng Guo Affiliation Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
14:20–14:40	Invited Lecture Title Ultrasonic Pore Characterisation in Additively Manufactured Metals Authors Yuan Liu , Kaiwen Ni, Qiuyu Li, Ming Huang Affiliation Nanjing University of Aeronautics and Astronautics
14:40–14:55	Oral Presentation Title Ultrasonic Super-resolution Exact Defect Shape Reconstruction using Geometrical Full Waveform Inversion Authors Xuexin An , Fan Shi Affiliation The Hong Kong University of Science and Technology
14:55–15:10	Oral Presentation Title Monitoring OF Wind Turbine Blade BOLT-sleeve Debonding VIA Impulse Response Guided Waves Authors Fusheng Xu , Runye Lu, Jian Zhang, Yanfeng Shen Affiliation Shanghai Jiao Tong University
15:10–15:25	Coffee Break

Session 10: Advanced Ultrasonic Non-Destructive Evaluation Assessment for Renewable Energy Storage, Transport, and Infrastructures (Cont.)

Chairs: Fan Shi, Shifeng Guo, Xudong Yu 13:10-17:50, Sunday, November 1 Location: Function Room 5 (3/F)	
15:25–15:45	Invited Lecture Title Semi-analytical Finite Element Framework for Wave Dispersion in Solid-fluid-poroelastic Multilayers Authors Xudong Yu Affiliation Beihang University
15:45–16:05	Invited Lecture Title Ultrasonic Corrosion Monitoring Authors Fangxin Zou Affiliation Beijing Institute of Technology
16:05–16:25	Invited Lecture Title Observing Nonreciprocal Magnon-phonon Interaction in Ferromagnetic Nanofilms using Ultrafast Optoacoustics Authors Yi He , Shuchang Zhang, Jie Huang, Zhongqing SU Affiliation The Hong Kong Polytechnic University
16:25–16:45	Invited Lecture Title 3D-printed Adaptive Origami Ultrasonic Transducer for Conformal Structural Health Monitoring Authors Yulian Xiong , Bo Wang, Dawei Wu Affiliation Nanjing University of Aeronautics and Astronautics
16:45–17:05	Invited Lecture Title High-precision Structural Health Monitoring of Pressure Vessels using Permanently Installed Ultrasonic Array Stickers Authors Xiaoyu Sun , Jingwei Cheng, Zhe Wang Affiliation Hefei General Machinery Research Institute Co., Ltd.
17:05–17:20	Oral Presentation Title Ultrasound TOFD Crack Sizing in CRA Pipeline Welds Authors Eyüp Bekci , Menglong Liu Affiliation Harbin Institute of Technology
17:20–17:35	Oral Presentation Title Ultrasonic Nondestructive Characterization of Over-discharge Degradation in Large-capacity Semi-solid-state Lithium-ion Batteries Authors Shanpeng Qin , Yan Lyu Affiliation Beijing University of Technology
17:35–17:50	Oral Presentation Title Ultrasonic Grain-SIZE Measurement using A Differential SELF-referencing Operator FOR Scattering-attenuation Signature Enhancement Authors Zhu Yan , Jingpin Jiao Affiliation Beijing University of Technology
19:00–20:30	Banquet & Award Ceremony

Sunday, November 1, 2026

CONFERENCE PROGRAM

Session 11: Vibration-based Damage Detection

Chairs: Maosen Cao, Wei Xu 13:10–16:30, Sunday, November 1 Location: Function Room 3 (3/F)	
13:10–13:40	Keynote Lecture Title Optimization Problems in Finite Element Model Updating with under-determinacy Authors Yang Wang Affiliation Georgia Institute of Technology
13:40–14:00	Invited Lecture Title Roving Magnetostrictive Guided-wave Detector for Wire Breakage Detection in Steel Strands Authors Ru Zhang , Xiaodong Sui, Yi Fang, Yuanfeng Duan Affiliation Hangzhou City University
14:00–14:20	Invited Lecture Title Green's Function Method for Crack Detection in Piezoelectric Double-beam Systems Authors Xiang Zhao , Wenjie Li Affiliation Southwest Petroleum University
14:20–14:40	Invited Lecture Title Intelligent Multi-step Damage Assessment Method Based on Vibration for Lattice Sandwich Panels Authors Jiyue Chen , Zheng Li Affiliation Peking University
15:10–15:25	Coffee Break
15:25–15:45	Invited Lecture Title Comparative Assessment of Vehicle-induced Responses for Bridge Scour Detection Authors Kun Feng, Arturo González Affiliation Anglia Ruskin University
15:45–16:00	Oral Presentation Title Nonlinear Dynamics of a Rectangular Plate with an Inclined Part-through Crack Authors Dayang Li, Duoduo Tang , Maosen Cao, Emil Manoach, Xin Zhou Affiliation Hohai University
16:00–16:15	Oral Presentation Title MRA-MFS-based Damage Identification of a Cantilever Beam under Noisy Environments Authors Dayang Li, Zhiwei Wang , Maosen Cao, Emil Manoach, Xin Zhou Affiliation Hohai University
16:15–16:30	Oral Presentation Title Stability Characterization of a FPB-ROV for Damage Identification of Critical Reservoir DAMS Authors Dayang Li, Chengyu Liu , Maosen Cao, Xin Zhou Affiliation Hohai University
19:00–20:30	Banquet & Award Ceremony

Sunday, November 1, 2026

CONFERENCE PROGRAM

Session 12: Guided-wave-based NDT and SHM

Chairs: Hongchen Miao, Cuixiang Pei, Yan Lyu 13:10-17:15, Sunday, November 1 Location: Function Room 1 (3/F)	
13:10–13:40	Keynote Lecture Title Damage Identification Methods Based on Guided Waves and Vibration for Stiffened Panels Authors Zheng Li , Jiyue Chen, Kaihong Zheng Affiliation Peking University
13:40–14:00	Invited Lecture Title Time Reversal Damage Imaging in Plate-like Anisotropic Structures with Analytically Based Time-reversal Method Authors Artem Eremin , Evgeny Glushkov, Natalia Glushkova, Alexander Tatarkin, Mikhail Vareldzhan, Iliia Bareiko Affiliation Kuban State University
14:00–14:20	Invited Lecture Title Sensitive Testing of Complex Defects in Small Diameter Pipes with Electromagnetic Acoustic Guided Wave Authors Cuixiang Pei Affiliation Xi'an Jiaotong University
14:20–14:35	Oral Presentation Title Transfer Learning-based Intelligent Monitoring Method for Bridge Expansion Joints Using Ultrasonic Guided Waves Authors Dengke Zhang Affiliation Zhejiang University
14:35–14:50	Oral Presentation Title Mode-selective Guided Waves for Crack Localization in Stiffened Tank Panels Authors Songkai Liu , Yanfeng Shen, Zhinan Zhang Affiliation Shanghai Jiao Tong University
14:50–15:05	Oral Presentation Title Baseline-free Damage Detection via Spider-leg Structure and Nonlinear Reciprocity Breaking Authors Yujian Chen , Kai Wang Affiliation Xiamen University
15:10–15:25	Coffee Break
Chairs: Hongchen Miao, Cuixiang Pei, Yan Lyu 13:10-17:15, Sunday, November 1 Location: Function Room 1 (3/F)	

Session 12: Guided-wave-based NDT and SHM (Cont.)

15:25–15:45	Invited Lecture
Title	Metasubstrate-based Transducer for Tunable Generation and Reception of Unidirectional T(0,1) Wave
Authors	Yuehao Du
Affiliation	Chengdu University of Technology
15:45–16:00	Oral Presentation
Title	Real-time Ultrasonic Monitoring Method for Transient Temperature in Electromagnetic Rail Launch
Authors	Xuzhou Zhang , Cuixiang Pei, Lekai Wang, Xinwen Li, Zhenmao Chen
Affiliation	Xi'an Jiaotong University
16:00–16:15	Oral Presentation
Title	A Data-efficient Framework for Pipeline Defect Detection Using CGAN Augmentation and Domain-adversarial CNN–transformer
Authors	Zhirong Lin , Yishou Wang, Xibin Fu, Xinlin Qing
Affiliation	Xiamen University
16:15–16:30	Oral Presentation
Title	Circumferential SH Guided Waves EMAT for Interfacial Inspection in Gas-filled Cased Wells
Authors	Hongyuan Zhang , Xiaokang Yin, Gaofeng Ma, Dongge Zhang
Affiliation	China University of Petroleum (East China)
16:30–16:45	Oral Presentation
Title	A Direction-tunable Rayleigh Wave Transducer for Inspection of Rail Web
Authors	Qingfeng Zhu , Hongchen Miao
Affiliation	Southwest Jiaotong University
16:45–17:00	Oral Presentation
Title	Ultrasonic Fast and Slow Wave Bandgap Detection for Lithium-ion Battery SOC
Authors	Tianhao Chen , Jie Gao, Yan Lyu
Affiliation	Beijing University of Technology
17:00–17:15	Oral Presentation
Title	A Dual-mode Piezoelectric Transducer for Selective Excitation of S0 and SH0 Waves
Authors	Xuliang Wang , Hongchen Miao
Affiliation	Southwest Jiaotong University
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 13: SHM for Aerospace Structures

Chairs: Lei Qiu, Jingjing He 13:10-17:20, Sunday, November 1 Location: Grand Ballroom 2 (3/F)	
13:10–13:40	Keynote Lecture
Title	Physics-informed Acoustic Emission Framework for Digital-twin-based Damage Assessment of Composite Pressure Vessels
Authors	Zahra Sharif Khodaei
Affiliation	Imperial College London
13:40–13:55	Oral Presentation
Title	Transferable Physics-guided Strain-based Load Reconstruction for Structural Health Monitoring
Authors	Yuhang Pan , Zahra Sharif Khodaei, Feri Aliabadi
Affiliation	Imperial College London
13:55–14:10	Oral Presentation
Title	An Aerospace Structures Damage Imaging Method Based on Gini Compensation for Residual Wavefield
Authors	Yinmin Zhu , Fei Gao
Affiliation	Beihang University
14:10–14:25	Oral Presentation
Title	A Fisher Information Matrix-based Framework for Optimal Sensor Placement in IFEM
Authors	Jincheng Wei , Tianxiang Huang, Shenfeng Yuan
Affiliation	Nanjing University of Aeronautics and Astronautics
14:25–14:40	Oral Presentation
Title	Ultrasonic Reflection Phase Derivative Spectrum-based Characterization of Mixed Interfacial Contact States Induced by Interlayer Slip
Authors	Zhanrui Yang , Jingjing He
Affiliation	Beihang University
14:40–14:55	Oral Presentation
Title	Gaussian Weighted Guided WAVE Imaging for Debonding in Thermal Protection Structures
Authors	Pingting Ying , Yu Wang, Lei Qiu, Shenfeng Yuan
Affiliation	Nanjing University of Aeronautics and Astronautics
14:55–15:10	Oral Presentation
Title	Multi-source Domain- Approximated Fault Diagnosis for Different Scenarios: Integrating Physical Models and Real-world Data
Authors	Shuo Xing , Wenjie Bao
Affiliation	China University of Mining and Technology
15:10–15:25	Coffee Break

Session 13: SHM for Aerospace Structures (Cont.)

Chairs: Lei Qiu, Jingjing He 13:10-17:20, Sunday, November 1 Location: Grand Ballroom 2 (3/F)	
15:25–15:45	Invited Lecture
Title	Research Progress on Ultrasonic Monitoring and Inspection Technology of Solid Rocket Motors
Authors	Fei Du , Chenghao Li, Yuting Cui, Yuanxin Li
Affiliation	Northwestern Polytechnical University
15:45–16:05	Invited Lecture
Title	Additive-manufacturing-driven Nanocomposite-inspired Sensing for Aircraft Structural Health Monitoring
Authors	Fang Fang , Qingqing Wang, Jiaxing Tian, Pengyu Zhou, Pengfei Li, Zhongqing Su
Affiliation	The Hong Kong Polytechnic University
16:05–16:20	Oral Presentation
Title	Guided-wave Monitoring of Stiffened Panels for Reusable Launch Vehicles under Static Compression
Authors	Shunbo Liu , Junxian Shen, Yuanqiang Ren
Affiliation	Nanjing University of Aeronautics and Astronautics
16:20–16:35	Oral Presentation
Title	Multifunctional Aircraft Composites Integrating Load-bearing, Energy Storage, and Health Monitoring
Authors	Zetian Wang , Yu Wang, Lei Qiu, Shenfang Yuan
Affiliation	Nanjing University of Aeronautics and Astronautics
16:35–16:50	Oral Presentation
Title	Crack-TIP Microstructure and Acoustic Emission for Fatigue Monitoring of Additively Remanufactured Components
Authors	Wenxi Zhang , Jingjing He
Affiliation	Beihang University
16:50–17:05	Oral Presentation
Title	Laplace-helmholtz Correspondence for Robust Acoustic Waveguide Cloaking
Authors	Zihang Guo , Jingjing He
Affiliation	Beihang University
17:05–17:20	Oral Presentation
Title	Evaluating Interlayer SLIP in Multilayered Structures Using Guided Wave Full Waveform Inversion
Authors	Hao Jiang , Jingjing He
Affiliation	Beihang University
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 14: Signal Processing for SHM

Chairs: Jing Rao, Peng Song, Yao Huang 13:10-16:30, Sunday, November 1 Location: Executive Floor (7/F)	
13:10–13:40	Keynote Lecture
Title	Deep Learning-enhanced Kalman Filter with Unknown Input: Algorithms and Applications
Authors	Ying Lei
Affiliation	Xiamen University
13:40–13:55	Oral Presentation
Title	Dispersion Analysis and Mode Selection of Ultrasonic Guided Waves in Liquid-filled Pipes
Authors	Xiaoran Ding , Xu Zhang, Gang Liu, Lei Chen, Yuxuan Dong
Affiliation	China University of Petroleum (East China)
13:55–14:10	Oral Presentation
Title	Camera Motion Compensation for Displacement Measurement Using Phase-based Motion Estimation and Camera-IMU Integration
Authors	Seunghwan Lee , Yeseul Kong, Bugon Kim, Gyuhae Park
Affiliation	Chonnam National University
14:10–14:25	Oral Presentation
Title	Modal Identification of a High-speed Maglev Switch Girder Based on Next-era and Block Bootstrap
Authors	Jiangong Zhao , Jingyu Huang, Ziyang Zhang, Boyu Zhang
Affiliation	Tongji University
14:25–14:40	Oral Presentation
Title	Block-OMP Identification of Blade Vibration from Undersampled Single-sensor BTT
Authors	Tong Jia , Lin Yue
Affiliation	Nanjing University of Aeronautics and Astronautics
15:10–15:25	Coffee Break
15:25–15:45	Invited Lecture
Title	High-sensitive Imaging of Cooper Bonded Sic Substrates Using Optical Microphone Based Laser Ultrasound
Authors	Peng Song
Affiliation	China University of Petroleum (Beijing)
15:45–16:00	Oral Presentation
Title	Defect-sensitive Frequency Selection for Full-record Modal Matched-field Imaging of Internal Pipe Corrosion
Authors	Yebao Ge , Jingpin Jiao
Affiliation	Beijing University of Technology
16:00–16:15	Oral Presentation
Title	A Deep Learning-based Multimodal Temperature-depth Fusion Framework for 3D Semantic Segmentation of Building Facades
Authors	Yue Ma , Haoyuan Zheng, Nuo Zhang, Chao Yang, Zihao Liu
Affiliation	Jiaotong-Liverpool University
16:15–16:30	Oral Presentation
Title	A Hybrid Ultrasonic Signal Denoising Method Based on Adaptive Filtering and SSA-VMD
Authors	Yaokai Li , JiuHong Jia
Affiliation	East China University of Science and Technology
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 15: SHM for Civil Structures

Chairs: Yuequan Bao, Liyu Xie 13:10-17:30, Sunday, November 1 Location: Grand Ballroom 3 (3/F)	
13:10–13:40	Keynote Lecture Title Improving Asset Management of Large Critical Infrastructure Authors Wing Chiu Affiliation Monash University
13:40–14:00	Invited Lecture Title Physics-aware Machine Learning Strategies for Plate Damage Localization Authors Xiaofan Yu, Dongming Hou, Dan Chen, Zhiyi Tang, Yong Huang, Wentao Wang Affiliation Harbin Institute of Technology
14:00–14:20	Invited Lecture Title Passive Wireless Sensing System for Structural Health Monitoring Authors Zhuoran Yi , Masaki Maeda, Liyu Xie, Zhiqing Trevor Yeow, Hong Liu, Linfei Hao, Songtao Xue Affiliation Tohoku University
14:20–14:40	Invited Lecture Title Integrating Prior Knowledge and Graph Neural Networks for Accurate Stiffness Evaluation of Deteriorating Structures Authors Dawei Liu , Yuequan Bao, You Dong Affiliation The Hong Kong Polytechnic University
14:40–14:55	Oral Presentation Title Condition Assessment of Splicing Joint in Widened Bridges Using Vehicle-induced Quasi-static Displacement Transfer Ratios: Theory and Experiments Authors Zhiyong Liu Affiliation Chongqing University
14:55–15:10	Oral Presentation Title Parameters and Placement Optimization of Tuned Viscous Mass Dampers via Automatic Differentiation Authors Vitali Kakouka , Kohju Ikago Affiliation Tohoku University
15:10–15:25	Coffee Break

Session 15: SHM for Civil Structures (Cont.)

Chairs: Yuequan Bao, Liyu Xie 13:10-17:30, Sunday, November 1 Location: Grand Ballroom 3 (3/F)	
15:25–15:45	Invited Lecture Title Super-sensitivity Photogrammetry for Full-field Measurements of Structural Dynamics Authors Yongchao Yang , Shanwu Li, Guojian Cui Affiliation Harbin Institute of Technology
15:45–16:00	Invited Lecture Title VLM-based Embodied Decision Making for Autonomous Bridge Inspection Authors Yasutaka Narazaki , Mingyu Shi, Wenhao Chai, Robin Eunju Kim Affiliation Zhejiang University
16:00–16:15	Oral Presentation Title Integration of SHM and DRL for Dominant Failure Modes Search in Bridges Authors Xiaoshu Guan , Yuequan Bao Affiliation Harbin Institute Of Technology
16:15–16:30	Oral Presentation Title A Performance Validation Method for Bridge Deflection Monitoring Equipment under Full-scale in-situ Bridge Conditions Authors Zhiqiang Shang , Zepeng Wang, Gongfeng Xin, Zhufeng Shao, Ganyu Zhou Affiliation Shandong Hi-Speed Group Innovation Research Institute
16:30–16:45	Oral Presentation Title Development of a Low-cost Structural Health Monitoring System and Pilot Bridge Implementation Authors Angela Poposka , Aleksandra Bogdanovic, Igor Markovski, Zoran Rakicevic, Zoran Ivanvoski, Miguel Bravo Haro, Dejan Filipovski, Filip Manojlovski, Antonio Shoklarovski, Nikola Jovanovski, Petar Churlinov Affiliation S.s Cyril and Methodius University in Skopje, N. Macedonia
16:45–17:00	Oral Presentation Title Vehicle-based Bridge Deflection Estimation from Loaded Frequencies: Field Validation Authors Jiaxin Huang Affiliation Chongqing University
17:00–17:15	Oral Presentation Title Metamaterial Assisted Flexible Patch Antenna for Structural Deformation Monitoring Authors Zeyu Li , Liyu Xie, Songtao Xue Affiliation Tongji University
17:15–17:30	Oral Presentation Title Optimizing Risk-based Inspection Using Structural Health Monitoring (SHM)-informed Structural Reliability Analysis Authors Suratchata Suankem Affiliation PTT Exploration and Production Public Company Limited
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 16: Young Scholars Forum on Structural Acoustics and Intelligent Diagnostics

Chairs: Qiang Wang, Yehai Li, Peipei Liu, Chao Zhang 13:10-17:40, Sunday, November 1 Location: Grand Ballroom 1 (3/F)	
13:10–13:30	Invited Lecture Title A Physics-guided Laser Ultrasonic Framework for in-situ Monitoring of Metal Additive Manufacturing Authors <u>Peipei Liu</u> , Junhao Chen, Liu Yang, Yuanqiang Ren, Hoon Sohn, Zhao-Dong Xu Affiliation Southeast University
13:30–13:50	Invited Lecture Title Ultrafast Optoacoustically Revealing Gigahertz Guided Acoustic Phonons: Phononic Fundamentals and Micro-nano Characterization of Nanomembranes Authors <u>Yi He</u> , Shuchang Zhang, Yehai Li, Zhongqing Su Affiliation The Hong Kong Polytechnic University
13:50–14:10	Invited Lecture Title Ultrasonic Polarization Array Wave Control and Damage Sensing under the Constraints of Curved Pipe Surface Manifold Authors <u>Kai Tao</u> Affiliation Nanjing University of Posts and Telecommunications
14:10–14:30	Invited Lecture Title Investigation of Surface Wave Scattering from Subsurface Cracks Using the Reciprocity Theorem Authors <u>Chuanyong Wang</u> , Bing-Feng Ju, Jan Achenbach Affiliation Hangzhou Dianzi University
14:30–14:50	Invited Lecture Title Feature Extraction and Defect Imaging Methods for Ultrasonic Inspection of Coatings Authors <u>Jiaxin Li</u> Affiliation Harbin institute of technology
14:50–15:10	Invited Lecture Title Elastic Wave Mode Conversion Mechanisms in Graded Metamaterials for Multimode Wave Control Authors <u>Rongyu Xia</u> Affiliation Sun Yat-sen University
15:10–15:25	Coffee Break

Session 16: Young Scholars Forum on Structural Acoustics and Intelligent Diagnostics (Cont.)

Chairs: Qiang Wang, Yehai Li, Peipei Liu, Chao Zhang 13:10-17:40, Sunday, November 1 Location: Grand Ballroom 1 (3/F)	
15:25–15:45	Invited Lecture Title Anisotropic Mechanical Characterization of Nanocrystalline Copper Membranes by Ultrafast Optoacoustics Authors <u>Yehai Li</u> Affiliation Sun Yat-sen University
15:45–16:05	Invited Lecture Title A Kernel Density Estimation Based Rapid Algorithm with Spatial Clustering for Multi-site Damage Imaging under Vibration Conditions Authors <u>Qiao Bao</u> , Yacheng Wu, Qiang Wang Affiliation Nanjing University of Posts and Telecommunications
16:05–16:25	Invited Lecture Title Metasurface-enabled Lamb Wave Multiple Access Communication Authors <u>Yunfei Xu</u> , Fuh-Gwo Yuan, Wenbin Huang Affiliation Chongqing University
16:25–16:40	Oral Presentation Title Gigahertz Optoacoustic Synthetic-aperture Imaging of Buried Semiconductor Microstructures via Ultrafast Laser-induced Guided Rayleigh Waves Authors <u>Jie Huang</u> , Zhongqing Su, Shuchang Zhang, Guojie Luo, Zaiwei Liu, Qi Yuan, Pengfei Li, Lin Ye, Yi He Affiliation The Hong Kong Polytechnic University
16:40–16:55	Oral Presentation Title Baseline Free Graph Transformer for Lamb Wave Monitoring of CFRP Composites Authors <u>Kai Luo</u> Affiliation Southern University of Science and Technology
16:55–17:10	Oral Presentation Title Research on Portable Laser Vibration Detection for Tunnel Structures Authors <u>Haomin Zhu</u> , Qiang Wang Affiliation Nanjing University of Posts and Telecommunications
17:10–17:25	Oral Presentation Title Mirror Domain Reconstruction and Dual Path Fusion for Blind Zone Localization using Frequency Steerable Acoustic Transducers Authors <u>Mingyu Song</u> , Jiaxin Li, Yiming Zhang, Weijia Shi, Xinqi Tian, Bo Zhao, Huifeng Tan, Jiubin Tan, Shengyang Zeng Affiliation Harbin Institute of technology
17:25–17:40	Oral Presentation Title Laser Ultrasonic Spectral Acoustic and Morphology Inversion for Sandwiched Thermal Interface Material Authors <u>Zhijun Yao</u> , Huanqing Cao, Kai He, Dashuai Su, Nai Yeen Gavin Lai, Jian Yang, Shifeng Guo Affiliation Shenzhen Institutes of Advanced Technology
19:00–20:30	Banquet & Award Ceremony

CONFERENCE PROGRAM

Session 17: Risk Monitoring and Assessment of Intelligent Equipment and Systems

Chairs: Hui Jin, Wenli Dong 08:30-11:30, Monday, November 2 Location: Function Room 3 (3/F)	
08:30–08:50	Invited Lecture Title Research and Exploration on the Integrated Development of Intelligent Construction and Construction Robots Authors Tingchen Fang Affiliation Shanghai Construction Engineering Group Central Research Institute
08:50–09:10	Invited Lecture Title Implementation and Application Modes of L4 Intelligent Tower Cranes with AI Agent Authors Junpeng Tian , Xuwei Chen, Yin hao Song, Jianwei Guo, Xiaodong Zhu, Limei Huang, Hong Chai Affiliation Glodon Company Limited
09:10–09:30	Invited Lecture Title In-Situ Fiber Bragg Grating-based Health Monitoring of Type IV Composite Pressure Vessels Authors Xiao Wu , Zhan Wei, Wenli Dong, Shen He, Wei Zheng, Yan Yan Affiliation Special Equipment Safety Supervision Inspection Institute of Jiangsu Province
09:30–09:50	Invited Lecture Title Intelligent Equipment Development and Risk Control of the Tianchan Robotic Platform Authors Han Bao , Yonghui Chen, Jingxiang Wang, Xiaohui Xu, Gang Chen Affiliation China Construction Eighth Bureau Third Construction Co. Ltd
09:50–10:05	Oral Presentation Title Damage-induced Digital-physical Strain Mapping Drift for Crane Structural Health Monitoring Authors Zhigang Xue , Wensheng Su, Jun Dai, Lili Meng, Dekun Zhang Affiliation Special Equipment Safety Supervision Inspection Institute of Jiangsu Province
10:15–10:30	Coffee Break
10:30–10:45	Oral Presentation Title Risk Monitoring and Assessment of Remote Automation Functions for Port Portal Cranes Authors Wei Luo , Yan chao Zhang, Xu Chen Affiliation Special Equipment Safety Supervision Inspection Institute of Jiangsu Province
10:45–11:00	Oral Presentation Title Health Monitoring of Rail Tracks Based on Train-wheel-excited Guided Waves and Microphone-array Transfer Functions Authors Chenye Cao , Tianxing Ma, Lang Qin, Hairui He, Yanfeng Shen, Hongsong Wang Affiliation Shanghai Jiao Tong University
11:00–11:15	Oral Presentation Title Dynamic Risk Assessment of Autonomous Tower Crane Operations Based on STPA–DFT–MCS Authors Youcheng Su , Hui Jin Affiliation Southeast University
11:15–11:30	Oral Presentation Title Optimizing Wilson PLOT Analysis for Heat Exchanger Thermal Degradation Monitoring Authors Yizhou Shen , Guoyan Zhou, Shan-Tung Tu Affiliation East China University of Science and Technology
12:00–13:30	Buffet Lunch

CONFERENCE PROGRAM

Session 18: Artificial Intelligence and Digital Twin

Chairs: Jun Wu, Wenbin Huang, Lingling Lu 08:30-10:00, Monday, November 2 Location: Ballroom (3/F)	
08:30–08:45	Oral Presentation Title Machine Learning for Performance Insights at Western Treatment Plant Authors Massimo Camillo , Wing Chiu, Tim Lu, Thomas Kuen Affiliation Monash University
08:45–09:00	Oral Presentation Title A Layer-counting Identification Method Based on Penetration Fuse Velocity Response Decoupling Authors Weijia Yan , Lingling Lu Affiliation Institute of Mechanics, Chinese Academy of Sciences
09:00–09:15	Oral Presentation Title Bayesian Sequential Decision-making for Adaptive Early Warning of Bridge Failure Risk Authors Yong Huang Affiliation Harbin Institute of Technology
09:15–09:30	Oral Presentation Title Credibility-guided Simulation-to-real Transfer Diagnosis of Hydraulic Systems Authors Yifan Yang , Jun Wu Affiliation Huazhong University of Science & Technology
09:30–09:45	Oral Presentation Title Digital TWIN Method Integrating Multi-parameter Monitoring for Individual Aircraft LIFE Prognosis Authors Qianjian Wu , Shenfang Yuan Affiliation Nanjing University of Aeronautics and Astronautics
09:45–10:00	Oral Presentation Title Unified Denoising and Missing-response Reconstruction for Structural Digital Twin Using a Cross-channel Response-restoration Temporal Convolutional Network Authors Baiping Dong Affiliation Tongji University
10:15–10:30	Coffee Break
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

CONFERENCE PROGRAM

Session 19: Rapid Post-Disaster Assessment of Civil Infrastructures: Integrating Vision, Digital Twins, and AI

Chairs: Huaping Wan, Mayuko Nishio, Yuguang Fu, Made Suarjana 8:30-11:15, Monday, November 2 Location: Function Room 2 (3/F)	
08:30–08:50	Invited Lecture Title Characterization of Long-term Urban Deformation Processes for Infrastructure Monitoring Authors <u>Yun Zhou</u> , Xiaofeng Zhou Affiliation Hunan University
08:50–09:10	Invited Lecture Title Understanding the Geometry of High Dimensional Bayesian Inference via Projected One-dimensional Measures Authors <u>Binbin Li</u> Affiliation Zhejiang University
09:10–09:30	Invited Lecture Title Residual Deformation Reconstruction from Point Clouds for Post-earthquake Bridge Evaluation Authors <u>Yan Xu</u> Affiliation Hohai University
09:30–09:45	Oral Presentation Title A Laboratory-scale Truss Bridge Benchmark Dataset for Vibration-based Structural Anomaly Detection Authors <u>Yikai Zhu</u> , Huaping Wan Affiliation Zhejiang University
09:45–10:00	Oral Presentation Title UAV-based Bridge Crack Detection and Quantification via Real-time Perception and Zero-shot SAM2 Authors <u>Duowu Wang</u> , Dan Li Affiliation Southeast University
10:15–10:30	Coffee Break
10:30–10:45	Oral Presentation Title Multi-crew Post-disaster Urban Road Network Restoration Based on Traffic-coupled Deep Reinforcement Learning Authors <u>Chong Liu</u> , Kang Tan, Qingchun Hou, Mayuko Nishio, Yasutaka Narazaki Affiliation Zhejiang University
10:45–11:00	Oral Presentation Title Underwater Structural Damage Detection Based on Mask-conditioned Diffusion Model Authors <u>Tianle Fang</u> , Huaping Wan Affiliation Zhejiang University
11:00–11:15	Oral Presentation Title Bayesian Finite Element Updating for a Long-span Bridge Digital Twin Authors <u>Yiwei Dong</u> , Binbin Li Affiliation Zhejiang University
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

Structural Health Monitoring

CONFERENCE PROGRAM

Session 20: Acoustic Emission

Chairs: Yu Yang, Dan Li, Peng Jiang, Feifei Long 8:30-10:15, Monday, November 2 Location: Function Room 1 (3/F)	
08:30–08:50	Invited Lecture Title Mechanics-based AE Characterization of Defective Fully Grouted Sleeve Connections under Cyclic Loading Authors <u>Lu Zhang</u> , Haowei Xu, Hongyu Li Affiliation Guilin University of Technology
08:50–09:10	Invited Lecture Title Acoustic Emission and Ultrasonic Fusion Evaluation of Low-velocity Impact Damage in CFRP Authors <u>Feifei Long</u> , Wei Zhao, Lu Zhang Affiliation Dalian Minzu University
09:10–09:30	Invited Lecture Title Path Planning and Topology Modeling-based Acoustic Emission Damage Localization in Complex Structures Authors <u>Dan Li</u> , Jiahao Nie, Hao Wang Affiliation Southeast University
09:30–09:45	Oral Presentation Title Foster-guided Gray-box Identification of EMVP for IGBT Package Degradation Monitoring Authors <u>Shuzhi Wen</u> , Lisha Peng, Songling Huang Affiliation Tsinghua University
09:45–10:00	Oral Presentation Title Physics-guided Acoustic Emission Mechanism Identification for Fatigue Crack Assessment of Bridge Joints Authors <u>Xiaomin Zhang</u> , Dan Li, Qingfeng Chen Affiliation Southeast University
10:00–10:15	Oral Presentation Title Identification of Fatigue-induced Wire Fracture in Fast Cable-net Structure Using Acoustic Emission Authors <u>Yongqi Su</u> , Lu Zhang, Hongyu Li Affiliation Guilin University of Technology
10:15–10:30	Coffee Break
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

CONFERENCE PROGRAM

Session 21: Impact and Damage Monitoring of Composite Structures

Chairs: Lei Yang, Zhengyan Yang 8:30-11:40, Monday, November 2 Location: Function Room 5 (3/F)	
08:30–08:50	Invited Lecture Title Impact Damage Detection for Composite Structure Using Lig Sensing Layer and Deep Learning-based EIT Authors Deng Zhou, Gang Yan , Zaixing Huang Affiliation Nanjing University of Aeronautics and Astronautics
08:50–09:10	Invited Lecture Title Intelligent Sensing and Physics-guided Deep Learning for Composites Damage Monitoring Authors Jianjian Zhu Affiliation Civil Aviation Flight University of China
09:10–09:30	Invited Lecture Title In Situ Quantitative Monitoring of Hypervelocity Impact Combining Resistive Film and Two-layer Acoustic Emission Sensing Methods Authors Menglong Liu , Yanming Wang Affiliation Harbin Institute of Technology
09:30–09:45	Oral Presentation Title Electromechanical-impedance-boosted Task-specific Hierarchical Inference for Damage Localization of 3D-printed Thermoplastic Composites Authors Jianjian Zhu, Xiao Yu , Tao Bi Affiliation Civil Aviation Flight University of China
09:45–10:00	Oral Presentation Title Probabilistic Impact Localization in Aircraft Composite Structures Using Multi-frequency Temporal-spatial Covariance and Deep Learning Authors Xu Zeng , Zhanjun Wu Affiliation Dalian University of Technology
10:15–10:30	Coffee Break
10:30–10:50	Invited Lecture Title Impact Monitoring and Damage Diagnosis of Composite Structures Based on Bayesian Data Fusion Authors Deshuang Deng , Xu Zeng, Lei Yang, Zhengyan Yang, Zhanjun Wu Affiliation Dalian University of Technology
10:50–11:10	Invited Lecture Title Wave Signals and Convolutional Neural Network Based Low Velocity Impact Localization of Honeycomb Sandwich Panel Authors Yaoyang Zhang, Shanshan Shi, Jiaqi Zhang Affiliation Dalian Jiaotong University
11:10–11:25	Oral Presentation Title Impact Localization Method for Aircraft Multi-layered Composite Structures Based on Multi-scale Convolutional Networks and a Hierarchical Learning Strategy Authors Minghua Wang , Ning Xu, Yishou Wang Affiliation Xiamen university
11:25–11:40	Oral Presentation Title Kurtosis-based Local Defect Resonance Feature Extraction for Internal Defect Evaluation Authors Hongyi Luo , Kai Wang, Qingping Kang, Jiarui Deng, Yujian Chen, Chao Yuan, Xurui Jian, Ruiqi Guan Affiliation Xiamen University
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

CONFERENCE PROGRAM

Session 22: Structural Health Monitoring via Data Fusion

Chairs: Dongyue Gao, Chenglong Guan, Cheng Liu 8:30-11:25, Monday, November 2 Location: Grand Ballroom 3 (3/F)	
08:30–08:50	Invited Lecture Title Heterogeneous Data Fusion of Ultrasonic Guided Wave and Machine Vision Based on Fuzzy D-S Evidence Theory for Multi-type Structural Damage Detection Authors Dongyue Gao , Wenxiang Song, Bingshuang Guo, Jiayi Shen, Zhanjun Wu Affiliation Jiangnan University
08:50–09:10	Invited Lecture Title Guided Waves and Convolutional Neural Network Based Damage Diagnosis of Honeycomb Sandwich Structures Authors Yaoyang Zhang, Di Zhang, Luoja Bai, Jiaqi Zhang Affiliation Dalian Jiaotong University
09:10–09:30	Invited Lecture Title Research on Strain Monitoring Method of Tank under Cryogenic Environment Authors Xiaoxi Qu , Jiaqi Zhang Affiliation Dalian Jiaotong University
09:30–09:45	Oral Presentation Title Quantitative Detection of Hypervelocity-impact-induced Multiple Through-hole Defects Based on Active Guided Waves Authors Wanyu Miao , Yanming Wang, Menglong Liu Affiliation Harbin Institute of Technology
09:45–10:00	Oral Presentation Title Cross-layup Transverse Matrix Crack Quantification via Domain-adaptive Relational Graph Convolutional Network Authors Xuebing Xu , Cheng Liu Affiliation City University of Hong Kong
10:00–10:15	Oral Presentation Title Vision-enhanced Multimodal Learning for Pavement Damage Assessment Authors Yingchao Zhang , Cheng Liu Affiliation City University of Hong Kong
10:15–10:30	Coffee Break
10:30–10:50	Invited Lecture Title Guided-wave Damage Alarm under Coupled Time-varying Conditions via Unsupervised Adaptive Feature Enhancement Network and Regional Information Fusion Authors Yu Wang , Fan Shao, Lei Qiu, Shenfang Yuan Affiliation Nanjing University of Aeronautics and Astronautics
10:50–11:10	Invited Lecture Title Quantitative Damage Diagnosis Method for Composite Structure Based on Lamb Waves and Explainable Artificial Intelligence Authors Li Wang , Yuqing An, Guang Xia Wang, Guoqiang Liu, Yu Yang Affiliation AVIC Aircraft Strength Research Institute
11:10–11:25	Oral Presentation Title Physics-encoded Deep Transfer Learning for Geometry-agnostic Cure Deformation Prediction Authors Wenxiang Song , Kang Xu, Jianhen Fan, Zhengyan Yang, Dongyue Gao, Zhanjun Wu Affiliation Jiangnan University
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

CONFERENCE PROGRAM

Session 15: SHM for Civil Structures (Cont.)

Chairs: Yuequan Bao, Liyu Xie 8:30-09:45, Monday, November 2 Location: Grand Ballroom 2 (3/F)	
08:30–08:45	Oral Presentation
Title	Low-cost Drive-by Bridge Structural Health Monitoring Using Smartphone Measurements
Authors	Yifei Ren , Jianfei Tian, Jiangang Tian, Jingyan Zou, Jiehua Jiang, Yuchen Yan, Tong Zhu, Feng Kun
Affiliation	Research Institute of Highway, Ministry of Transport
08:45–09:00	Oral Presentation
Title	New Advances in Structural Health Monitoring Based on Passive Patch Antenna
Authors	Xianzhi Li , Songyuan Dong, Songtao Xue, Liyu Xie
Affiliation	Qingdao University of Technology
09:00–09:15	Oral Presentation
Title	Integrated Radar–inertial Sensing for Multi-response Structural Monitoring
Authors	Zhanxiong Ma , Tongtong Zhang, Shuhan Lin, Qiangqiang Zhang
Affiliation	Lanzhou University
09:15–09:30	Oral Presentation
Title	Monitoring Longitudinal Settlement in Tunnels Using Composite Flat-ribbon Optical Cables with Integrated Fiber Bragg Grating Arrays
Authors	Yejun Shao , Chunliu Zhao, Zhewen Ding, Dongyou Yu
Affiliation	China Jiliang University
09:30–09:45	Session Transition
10:15–10:30	Coffee Break

Session 23: Electric and Electromagnetic Sensors

Chairs: Mengbao Fan, Zhichao Li 10:30-11:55, Monday, November 2 Location: Grand Ballroom 2 (3/F)	
10:30–10:50	Invited Lecture
Title	Magnetic Characterization of Superconductors for Electrical Engineering
Authors	Xiaofen Li , Yingzhe Li
Affiliation	Shanghai Jiao Tong University
10:50–11:10	Invited Lecture
Title	Full-field Vibration and Deformation Measurement of Large Structures via Microwave Sensing
Authors	Yuyong Xiong , Zhike Peng
Affiliation	Shanghai Jiao Tong University
11:10–11:25	Oral Presentation
Title	Flexible CIGS Photovoltaic Strain Sensors for Aerospace Structural Health Monitoring
Authors	Yuzhao Qiang , Chao Zhang, Lu Yang
Affiliation	Northwestern Polytechnical University
11:25–11:40	Oral Presentation
Title	Intelligent MIEC-PEC Fusion Sensing and Physics-guided Inversion for High-speed Defect Assessment
Authors	Guanyu Piao , Jiaoyang Li, Lei Wang
Affiliation	Shanghai University
11:40–11:55	Oral Presentation
Title	Attenuation-compensated Nonlinear Delay-and-sum Ultrasonic Imaging of Defects in Concrete Structures
Authors	Hui Zhang , Yutian Liu
Affiliation	Shanghai University of Engineering Science
12:00–13:30	Buffet Lunch

Monday, November 2, 2026

The 11th Asia-Pacific Workshop on
Structural Health Monitoring

CONFERENCE PROGRAM

Session 16: Young Scholars Forum on Structural Acoustics and Intelligent Diagnostics (Cont.)

Chairs: Qiang Wang, Yehai Li, Peipei Liu, Chao Zhang 08:30-09:15, Monday, November 2 Location: Grand Ballroom 1 (3/F)	
08:30–08:45	Oral Presentation
Title	Debonding Defect Detection of Composite Stiffened Panels Based on Local Wavenumber Estimation
Authors	Jiada Liu , Chao Zhang
Affiliation	Nanjing University of Aeronautics and Astronautics
08:45–09:00	Oral Presentation
Title	Temperature-robust Hole-edge Crack Estimation Using Flexible Piezopolymer Arrays
Authors	Yuqi Ma , Zhongwei Chen, Huanqing Cao, Qi Luo, Shifeng Guo
Affiliation	Shenzhen Institute of Advanced Technology
09:00–09:15	Oral Presentation
Title	VAM-based Deep Learning Framework Predicting Bolt Group Tightness in CFRP Lap Structures
Authors	Haofei Sun , Guojun Cai
Affiliation	Anhui Jianzhu University
09:15–09:30	Session Transition

Session 24: Guided Wave Mechanics and Diagnostics under Variable Environments

Chairs: Jinsong Yang, Xiang Gao, Xiaozhen Zhang 09:30-11:45, Monday, November 2 Location: Grand Ballroom 1 (3/F)	
09:30–09:50	Invited Lecture
Title	Two-stage DAS–DMAS Imaging for Lamb-wave Corrosion Localization
Authors	Jinsong Yang, Shiqing Yan , Xiaozhen Zhang
Affiliation	Central South University
09:50–10:05	Oral Presentation
Title	Physics-guided Time-frequency Feature Ensemble for Lamb-wave Damage-state Identification
Authors	Yangguang Bian , Jinsong Yang, Xiaozhen Zhang, Chenxu Wu
Affiliation	Central South University
10:15–10:30	Coffee Break
10:30–10:45	Oral Presentation
Title	High-sensitivity Stress Evaluation Using Source-region Harmonics of Magnetostrictive Guided Waves
Authors	Wenbo Cao , Xiang Gao, Xiucheng Liu, Bin Wu
Affiliation	Beijing University of Technology
10:45–11:00	Oral Presentation
Title	An Adaptive Amplitude–phase Compensation Method for Lamb Wave Damage Localization Under Temperature Variation
Authors	Chengguang Fan , Xiaozhen Zhang, Yong Zhao
Affiliation	National University of Defense Technology
11:00–11:15	Oral Presentation
Title	Development and Application of Structural Health Monitoring Technology for High-speed Trains in China
Authors	Buzhao Niu
Affiliation	CRRC Qingdao Sifang Co., Ltd.
11:15–11:30	Oral Presentation
Title	Research on Dynamical Response Reconstruction Method Based on Fourier Neural Operator
Authors	Jialong Tan , Jingsong Yang, Xiaozhen Zhang, Worawat Songkitti
Affiliation	Central South University
11:30–11:45	Oral Presentation
Title	In-situ Fiber Bragg Grating-based Health Monitoring of Type IV Composite Pressure Vessels
Authors	Xiangdong Ma, Zhan Wei , Wenli Dong, Shen He, Wei Zheng, Yan Yan
Affiliation	Special Equipment Safety Supervision Inspection Institute of Jiangsu Province
12:00–13:30	Buffet Lunch



Organizing Institutes:

Shanghai Jiao Tong University

Harbin Institute of Technology

East China University of Science and Technology

Fudan University

Tongji University

Nanjing University of Aeronautics and Astronautics

The Hong Kong Polytechnic University

NC State University