



# MSAM 2025

The 8<sup>th</sup> International Conference on  
**Material Strength** and  
**Applied Mechanics**

SHENZHEN, CHINA | JULY 11-14, 2025

## CONFERENCE PROGRAM



**SUSTech**

Southern University  
of Science and  
Technology



**中国力学学会**  
The Chinese Society of Theoretical and Applied Mechanics

## About AiM and SKL-IMCFC, SUSTech

**School of Automation and Intelligent Manufacturing (AiM), Southern University of Science and Technology, Shenzhen, China**

南方科技大学自动化与智能制造学院



School of Automation and Intelligent Manufacturing, Southern University of Science and Technology (formerly the School of System Design and Intelligent Manufacturing) was established in November 2018 as one of SUSTech's key platforms for pioneering and implementing New Engineering Education principles. Since January 2023, the discipline of Automation has been integrated into the School.

Aligned with the strategic priorities of China and the Greater Bay Area in automation-related fields, the School focuses on cutting-edge areas such as advanced control theory and applications, artificial intelligence and robotics, and intelligent manufacturing. It is committed to developing globally competitive talent with outstanding research innovation, international leadership, and a strong sense of social responsibility. The School operates two research centres: Control Science and Technology and Design Intelligence and Manufacturing. It offers undergraduate programmes in Automation and Industrial Design, along with a doctoral programme in Control Science and Engineering.

**Shenzhen Key Laboratory of Intelligent Manufacturing for Continuous Carbon Fibre Reinforced Composites (SKL-IMCFC), Shenzhen, China**

南方科技大学深圳市连续碳纤维复合材料智能制造重点实验室



Shenzhen Key Laboratory of Intelligent Manufacturing for Continuous Carbon Fibre Reinforced Composites aligns with national priorities in advanced composite materials technology and industrial development. The laboratory focuses on the design and manufacturing of high-performance, multifunctional composites, addressing foundational challenges in structural design, analysis, production, characterisation, and monitoring of continuous carbon fibre composites. It aims to overcome critical bottleneck technologies in the field. Facing key challenges in the mechanics and intelligent manufacturing of these composites, the lab adopts a core framework of "design-manufacture-monitoring", with three priority research areas: 1. Composite Mechanics & Structural Design; 2. Composite Forming & Intelligent Manufacturing; 3. Composite Evaluation & Structural Health Monitoring.



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# Part I Conference Organization

## Honorary Chair



**Yiu-Wing Mai**, Hong Kong Polytechnic University, China

## Conference Chair



**Yuan Chen**, Southern University of Science and Technology, China

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Hongshuai Lei, Beijing Institute of Technology, China  
Bing Li, Northwestern Polytechnical University, China  
Xiaogang Hu, Sun Yat-sen University (Shenzhen), China

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Ping Cheng, Southern University of Science and Technology, China

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Qi Ge, Southern University of Science and Technology, China  
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Wei Hong, Southern University of Science and Technology, China  
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Kefu Huang, Southern University of Science and Technology, China  
 Jiangyu Li, Southern University of Science and Technology, China  
 Qing Li, University of Sydney, Australia  
 Yan Li, Tongji University, China  
 Yulong Li, Northwestern Polytechnical University, China  
 Zheng Li, Peking University, China  
 Yijun Liu, Southern University of Science and Technology, China  
 Yiu-Wing Mai, Hong Kong Polytechnic University, China  
 Qinghua Qin, Shenzhen MSU-BIT University, China  
 Dong Ruan, Swinburne University of Technology, Australia  
 Liqun Tang, South China University of Technology, China  
 Youhong Tang, Flinders University, Australia  
 Ke Wang, Southern University of Science and Technology, China  
 Jian Xu, Shenzhen University, China  
 Richard Yang, Western Sydney University, Australia  
 Lin Ye, Southern University of Science and Technology, China  
 Sarah Zhang, University of Technology, Sydney, Australia  
 Zhong Zhang, University of Science and Technology of China, China  
 Zheng Zhong, Harbin Institute of Technology (Shenzhen), China  
 Limin Zhou, Southern University of Science and Technology, China  
 Qiang Zhu, Southern University of Science and Technology, China

\* List in alphabetical order by Last Name from A to Z.

### **Technical Program Committee**

Mizan Ahmed, Curtin University, Australia  
 Amie Amir, Jiangsu JITRI Composite Equipment Research Institute Co. Ltd, China  
 Long Bao, Shenzhen University, China  
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Xin Zhang, Southern University of Science and Technology, China  
Lezi Zhouhe, Huazhong University of Science and Technology, China

\*List in alphabetical order by Last Name from A to Z.

# Part II Conference Schedule Summary

## DAY 1 | July 11, 2025

**Location:** Lobby of Shenzhen Nanshan Genpla Hotel (7F) 深圳深铁塘朗城君璞酒店

**Registration @ 14:00-19:00**

### Note for registration:

\* Please show us your name or paper / abstract number for registration.

\* Please pick up all the conference materials at the registration desk (Name Tag, Conference Program, Lunch & Dinner Tickets etc.).

## DAY 2 | July 12, 2025

**Location:** Ballroom (宴会厅, 6F)

**Shenzhen Nanshan Genpla Hotel**

### Opening & Welcome Speech

**Chaired by:** *Lin Ye, Southern University of Science and Technology, China*

<b>08:30-08:50</b>	<b>Yuan Chen, Conference Chair</b> , Southern University of Science and Technology, China <b>Guest</b> from The Chinese Society of Theoretical and Applied Mechanics, China <b>Guest</b> from Southern University of Science and Technology, China
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**Group Photo @ 08:50-09:00**

**Plenary Speech @ 09:00-12:10**

**Presided by:** *Shaoyun Fu, Chongqing University, China*

<b>09:00-09:35</b>	<b>Plenary Speech: A new physical understanding of the Weibull strength distribution and fracture toughness evaluation of brittle polycrystalline ceramics</b> <i>Yiu Wing Mai, The Hong Kong Polytechnic University, Hong Kong, China</i>
<b>09:35-10:10</b>	<b>Plenary Speech: Multiscale fracture mechanics of biological materials</b> <i>Xiqiao Feng, Tsinghua University, China</i>
<b>10:10-10:25</b>	<b>Coffee Break</b>

**Presided by:** *Kefu Huang, Southern University of Science and Technology, China*

<b>10:25-11:00</b>	<b>Plenary Speech: Topological dynamics of continuum beams and frame structures</b> <i>Jianxiang Wang, Peking University, China</i>
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11:00-11:35	<b>Plenary Speech:</b> Electromagnetic Hopkinson bar: a powerful tool to study mechanical behavior of materials under dynamic complex loading <i>Yulong Li, Northwestern Polytechnical University, China</i>	
11:35-12:10	<b>Plenary Speech:</b> Timber-concrete composite – an innovative construction method for structural applications <i>Klaus Holschemacher, Leipzig University of Applied Sciences, Germany</i>	
<b>Lunch Break @12:10-14:00     Genlight Restaurant (星璞餐厅), 7F</b>		
<b>Parallel Oral Sessions</b>		
14:00-17:55	Oral Session 1: Biomechanics, Biomimetic and Biomedical Applications	Meeting Room 1 (会议室 1, 6F)
14:00-17:55	Oral Session 2: Additive Manufacturing	Meeting Room 2 (会议室 2, 6F)
<b>Poster Session</b>		
16:00-16:30	Poster Presentations	Lobby of Ballroom (宴会厅, 6F)
<b>Welcome Banquet @18:30-20:00     Ballroom (宴会厅, 6F)</b>		
18:30-18:40	Welcome Speech	
18:40-19:00	Awarding	
19:00-20:00	Banquet	

## DAY 3 | July 13, 2025

<b>Parallel Oral Sessions</b>		
Time	Session	Location
08:30-12:05	Oral Session 3A: Applied Mechanics	Meeting Room 1 (会议室 1, 6F)
08:30-12:10	Oral Session 4A: Strength of Materials	Meeting Room 2 (会议室 2, 6F)
<b>Lunch Break @ 12:10-14:00     Genlight Restaurant (星璞餐厅), 7F</b>		
14:00-18:05	Oral Session 3B: Applied Mechanics	Meeting Room 1 (会议室 1, 6F)
14:00-17:50	Oral Session 4B: Strength of Materials	Meeting Room 2 (会议室 2, 6F)

## DAY 4 | July 14, 2025

Campus tour at Southern University of Science and Technology **09:00-11:00**

# Part III Featured Speakers

## Plenary Speakers

### Prof. Yiu Wing Mai

*Chair Professor, Fellowships of the Chinese Academy of Engineering, the Royal Society of London, the Australian Academy of Science  
The Hong Kong Polytechnic University, Hong Kong, China*

**Prof. Mai Yiu Wing (米耀荣)** received his PhD, DSc and DSc (*honoris causa*) from the University of Hong Kong in 1972, 1999 and 2013, respectively. He spent more than 4 decades as an academic at the University of Sydney where he rose through the ranks to a University Chair in 2004. He retired in May 2023 and returned to PolyU in HK in November 2023 as a Distinguished Chair Professor. His research interests are fracture mechanics and advanced composites. Prof. Mai was elected to fellowships of several prestigious academies, including the Chinese Academy of Engineering, the Royal Society of London and the Australian Academy of Science.



### Plenary Speech: A new physical understanding of the Weibull strength distribution and fracture toughness evaluation of brittle polycrystalline ceramics

**Abstract.** Generations of research students have been taught that the strength of brittle materials containing microcracks follows the Weibull distribution. The Weibull modulus  $M$  has a constant value which describes the strength scatter of large specimens. The characteristic strength  $\sigma_{ch}$  defines the strength at a failure probability of 63.2%, and has no further application. In this talk, we suggest that if the microcracks are suppressed or pre-existing defects are smaller than the average grain size  $G$ , a new *micro-grain* Weibull strength distribution can be obtained. In addition, the characteristic strength,  $\sigma_{ch}$ , determined from the micro-grain Weibull plot with a high  $M$  value ( $>10$ ), and an average  $G$  could be used to evaluate the fracture toughness  $K_{IC}$  without testing specimens with long cracks. That is,  $K_{IC} \approx 2 \sigma_{ch} \sqrt{3G}$ . This provides a new physical interpretation of the characteristic strength in the Weibull equation. But, is this a new concept in fracture mechanics of brittle materials? Available results in the published literature offer some support.

### Prof. Xiqiao Feng

*Changjiang Scholars Professor, Tsinghua University, China*

**Xiqiao Feng** is a Chang Jiang Chair Professor at Tsinghua University. Currently, he serves as a vice president of the Chinese Society of Theoretical and Applied Mechanics (CSTAM), an editor-in-chief of Engineering Fracture Mechanics, and an executive member of International Council of Fracture (ICF). His current interests include mechanics and biomimetics of biological materials, and biomechanics of cells and tissues. He has co-authored three monographs and about 400 international journal papers, which have received about 29000





citations. Selected Feng's honors include the National Prize of Science and Technology of China (2019), the Award of Science and Technology for Young Scientists of China (2007), etc.

## Plenary Speech: Multiscale fracture mechanics of biological materials

**Abstract.** Many biological composites can achieve superior elastic stiffness, strength, and toughness, which are crucial for biomechanical performance in activities such as locomotion, protection, combat, adhesion, and predation. In this paper, we investigate the toughening and stiffening mechanisms of biological materials and establish the corresponding theoretical models. We focus on uncovering how these materials achieve an exceptional combination of high stiffness, toughness, and strength. The relationships among the mechanical properties, biological functions, geometric structures, and chemical compositions of biological materials are analyzed using representative examples, including horns, gecko feet, nacles, spider silks, and tendrils. We particularly examine the effects of microstructural sizes, interfaces, structural hierarchy and chirality, and functional gradients. I will also provide perspectives on the mechanics of biological materials from the viewpoints of theoretical modeling, experimental characterization, numerical simulations, and biomimetic applications.

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## Prof. Jianxiang Wang

*Changjiang Scholars Professor, Peking University, China*



**Jianxiang Wang** is currently Changjiang Scholar Professor of Mechanics, and Chief Professor of Zhou Peiyuan Honors Program of Theoretical and Applied Mechanics (ZPY-TAM), in College of Engineering of Peking University. He received his PhD from The University of Sydney in 1995. He joined Peking University in 1998, after doing post-doctoral research in Imperial College in 1996 and Aalborg University in 1997. Jianxiang Wang's research focuses on mechanics of composite materials. He once served as secretary-general of the 23rd International Congress of Theoretical and Applied Mechanics (ICTAM2012), and member of Congress Committee of the IUTAM.

## Plenary Speech: Topological dynamics of continuum beams and frame structures

**Abstract.** Topological phases of matter (e.g. topological insulators) based on principles of topology are of great theoretical and practical values in various physical settings spanning electronics, optics, acoustics, thermodynamics and mechanics. This lecture will present the theory of topological properties of mechanical continuous beams and continuum lattice grid structures that have been recently revealed. The theory gives the existence condition of the topological states and higher-order topological states within the whole frequency spectra of continuous beams, bridge-like frames, square frames and kagome frame structures. Clear criteria for topological phase transitions, which occur many times in such continuum lattice grid structures, are established. The exact frequencies of the topological corner states, edge states, and bulk states are solved analytically. The approach is based on a unified framework, which can be readily applied to similar continuum lattice grid structures with more complex configurations.

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## Prof. Yulong Li

*Changjiang Scholars Professor, Northwestern Polytechnical University, China*

**Dr. Yulong Li** is the Dean of Civil Aviation School and a Chair Professor in Department of Aeronautical Structure Engineering in Northwestern Polytechnical University (NPU). He received his Ph.D. degree in Solid Mechanics from NPU in 1992 and became a Professor in 1995. From 1996 to 2000 he worked as a post-doctor and subsequently a senior research scientist in University of California San Diego (UCSD) and Johns Hopkins University (JHU). He was a visiting professor of Tokyo University of Science in Japan, a visiting professor of Université Pierre et Marie Curie of France and a visiting professor of JHU. His research interests include dynamic response and failure of structures under impact loading, constitutive relationship for materials, experimental techniques in impact dynamics, as well as, numerical simulation of materials and structures under impact. He has authored more than 400 papers, as well as over 50 patents and 4 book chapters.



### Plenary Speech: Electromagnetic Hopkinson bar: a powerful tool to study mechanical behavior of materials under dynamic complex loading

**Abstract.** Split Hopkinson bar (SHB) has been widely used for testing the dynamic mechanical behavior of materials. However, it is hard to involve complex stress conditions in traditional SHB due to its intrinsic characteristics. Electromagnetic Hopkinson bar (E-Hopkinson bar) has been recently proposed as a solution. Different from traditional SHB, the stress pulse of E-Hopkinson bar is generated directly by electromagnetic force. Therefore, the stress pulse that loads the specimen can be accurately controlled. With this advantage, some experiments that cannot be done with traditional SHB can be conducted by E-Hopkinson bar technique. In this case, we introduced briefly the basic principles of E-Hopkinson bar. Some lasted tests, such as symmetrically dynamic compression/tension of materials, testing technique for brittle materials, dynamic Bauschinger effect of metals, intermediate strain rate tests, trapezoidal stress pulse generation and dynamic multi-axial tests were also introduced. This new technique will be helpful for those researchers in the field of solid mechanics, especially when strain rate and complex stress condition are involved.

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## Prof. Klaus Holschemacher

*Structural Concrete Institute (IfB), Leipzig University of Applied Sciences (HTWK Leipzig), Germany*

**Klaus Holschemacher** studied Civil Engineering at the Technical University of Leipzig (TH Leipzig) and has got PhD degree from this university in 1992. Since 1996 he is Professor for Structural Concrete at the Leipzig University of Applied Sciences (HTWK Leipzig). He is the founding director of the Structural Concrete Institute (IfB) and the head of this institution until now. Holschemacher has successfully applied for research funds with a total amount of more than 12 million €. His main research interests are carbon and textile reinforced concrete, fibre reinforced concrete, hybrid structures, and bond of reinforcement in cementitious materials.

Holschemacher is author, respectively co-author, of more than 400 research papers. He is member of numerous scientific organizations, e.g. fib, ACI, ASCE. Since 2018, he is board member of the



German Carbon Concrete Composite e.V. Besides his activities in research, he is working as consulting engineer and as publicly appointed and sworn expert.

## Plenary Speech: Timber-concrete composite – an innovative construction method for structural applications

**Abstract.** Timber-concrete composite (TCC) is a well-known construction method for more than 100 years. The main applications of TCC are floor slabs, either for the construction of TCC slabs in new buildings, or in the context of strengthening of existing timber beam ceilings. Typically, TCC slabs consist of timber beams and a concrete slab, both connected by special shear elements. With the usually as shear connectors applied metallic fasteners, only a flexible bond between the timber beams and the concrete slab can be achieved. Nevertheless, the load-bearing behaviour of TCC slabs is characterized by high bending stiffness and ultimate load. A huge advantage of TCC slabs in contrast to timber beam ceilings are the essentially improved fire resistance and the reduced vibration sensitivity.

Within the last years, the application of TCC slabs for construction of new buildings has strongly increased. The main reason is the lower environmental impact of TCC slabs in comparison to ordinary reinforced concrete slabs of comparable load-bearing capacity. Furthermore, TCC is beneficial in the context of heritage protection because the bottom side of timber beam ceilings may remain unchanged when strengthened with TCC method.

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## Keynote Speakers



**Dong Ruan**

**Professor, Swinburne University of Technology, Australia**

**Prof. Dong Ruan** is currently the Chair for the Department of Mechanical and Product Design Engineering at Swinburne University of Technology. She obtained her Bachelor and Master degrees from Shanghai Jiao Tong University and PhD from Swinburne University of Technology. She has worked at Swinburne since 2005. Her research interests include: (1) additive manufacturing of continuous fibre reinforced composite materials and structures; (2) characterisation of the mechanical properties of various materials at high strain rates; (3) evaluation of the mechanical response of structures (such as multi-layered panels and tubes) under dynamic loadings. She has published over 270 academic papers with over 10,000 citations. Dong is Fellow of the Institution of Engineers Australia (FIEAust). She is an Associate Editor of *Engineering Structures* (Q1 journal) and an Editorial Advisory Board member of *International Journal of Impact Engineering* (Q1 journal), and *Thin-Walled Structures* (Q1 journal). She received two national awards: Eureka Prize in 2013 as a team member of DMTC's Armour Applications Program in the Safeguarding Australia category and AGM Michell Medal from the Institution of Engineers Australia in 2022.

### Speech Title: Effects of nitrogen-purging and post-annealing on the tensile performance of additively manufactured continuous fibre-reinforced composites

**Abstract.** Additively manufactured continuous fibre-reinforced composites display promising mechanical properties, making them a viable option for various engineering applications including aerospace and automotive. However, they face challenges such as relatively weak interlayer bonding and low strength compared with composites fabricated by traditional methods. Therefore, it is imperative to improve the mechanical performance of additively manufactured continuous fibre-

reinforced composites (CFRCs). This paper presents an experimental investigation into the effects of nitrogen-purging ( $N_2$ -purging) during printing and annealing after printing on the tensile performance of additively manufactured CFRCs. Tensile tests were conducted on the Onyx reinforced with three different continuous fibre filaments, namely carbon fibre filaments (CFF), glass fibre filaments (GFF), and Kevlar fibre filaments (KFF). It was found that  $N_2$ -purging and post-annealing had different effects on the tensile properties of various CFRCs. Particularly,  $N_2$ -purging, post-annealing and their combination enhanced both the Young's modulus and ultimate tensile strength (UTS) of KFF/Onyx specimens. Detailed microstructural and fracture surface analyses were performed to investigate the governing failure mechanisms. Additionally, differential scanning calorimetry (DSC) and X-ray diffraction (XRD) analyses were also carried out to unveil the thermal behaviour and crystal structures affecting the mechanical properties of CFRCs.

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## Kunkun Fu

Professor, Tongji University, China

**Prof. Kunkun Fu** is currently working as Deputy Dean of the School of Aerospace Engineering and Applied Mechanics at Tongji University, P.R. China. He was awarded a national early-career scientist fellowship in 2018 after he worked as a Postdoctoral Research Fellow at the University of Sydney and the University of New South Wales Canberra. Prof. Fu's major research interests include the failure mechanics of composite structures and additive manufacturing of fiber reinforced composites. He has strong expertise in numerical modelling of composite structures in various engineering areas in particularly under extreme conditions such as lightning strike and impact. So far, he has published over 100 peer-reviewed journal publications and served as the editorial members of several journals, the committee member of the Chinese Society of Theoretical and Applied Mechanics, the executive committee member of Shanghai Society of Theoretical and Applied Mechanics, and the committee member of Shanghai Society of Composite Materials.



### Speech Title: Topology optimization design and process implementation of 3d-printed fiber-reinforced composites

**Abstract.** 3D printing technology facilitates the manufacturing of fiber-reinforced thermoplastic composite components with complex geometries, providing exceptional design freedom that overcomes the shape limitations inherent in conventional manufacturing approaches. However, due to the transient, low-pressure nature of thermoplastic composite 3D printing, the fabricated parts frequently exhibit poor interlayer adhesion, high porosity, and substantial warpage deformation, resulting in significantly compromised mechanical performance relative to traditionally manufactured counterparts. To date, there exists a critical gap in composite structural design methodologies and processing techniques specifically adapted for 3D printing characteristics.

To overcome these challenges, this report systematically addresses three key aspects:

(1) This report details several innovative topology optimization methods for 3D-printed composite structures approaches: manufacturing-constrained topology optimization frameworks specifically developed for 3D-printed composites, and a novel multi-level optimization strategy for designing load-bearing and functional composite structures. (2) This report demonstrates an advanced multi-axis robotic 3D printing system capable of processing both continuous and short fiber-reinforced composites. The research establishes a comprehensive methodology for printing pressure measurement and calculation, while systematically investigating the effects of key process parameters on both printing pressure and product quality. Furthermore, a coupled thermo-mechanical model of the printing process is discussed. (3) The report discusses several advanced applications of 3D Printing Technology, including bio-inspired interface-toughening structures, process-controlled

bioinspired structures with alternating strong-weak layers, and induction-heated lattice-reinforced thin-walled structures.

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## Chao Zhang

Professor, Northwestern Polytechnical University

**Dr. Chao Zhang** is Professor and Ph.D. supervisor for the School of Civil Aviation, Northwestern Polytechnical University. His research direction lies in the fields of multi-scale mechanics of composite materials, impact dynamics, and strength of aerospace engines structures. Dr. Zhang has awarded more than 20 scientific research projects (5 from NSFC). He is recipient of the National High-level Talent Youth Program, Shaanxi Youth Scientist Award and National Outstanding Young Scholar in Explosive Mechanics et al. Dr. Zhang has published more than 150 journal papers, with Google Citations over 5400. He serves as editorial board member for several scientific journals, e.g. *Compos Struct*, *Acta Mechan Sin*, *Chin J Aeronaut*, *J Aero Eng* et al., and active members of the Chinese Society for Composite Materials and The Chinese Society of Theoretical and Applied Mechanics.

### Speech Title: Mechanics-informed data-driven approach for constitutive modeling of aerospace materials

**Abstract.** Data-driven methods based on machine learning (ML) are increasingly being used for constitutive modeling of advanced aerospace materials, including metallic alloys and fiber-reinforced composites. However, their reliance on extensive datasets has hindered further development. To address this limitation, we propose an innovative mechanics-informed ML approach to predict the elastoplastic behavior and anisotropic features using small training datasets. For elastoplastic metallic materials, a novel strain reconfiguration strategy is proposed to improve the learning capability and predictability of the data-driven model, along with a two-step training method. A compatible numerical implementation algorithm is developed to incorporate the data-driven approach into a finite element calculation. This method is applied to learn and predict the mechanical response of Ti-6Al-4V titanium alloy under multiple loading conditions, including tension, compression, shear and impact loads. For orthotropic composites, we establish a decomposition and equivalence method for stress-strain tensors. Two independent artificial neural networks are employed to capture the deviatoric behavior and the volumetric-fiber coupling behavior, respectively. Additionally, an incremental algorithm is introduced to map the one-dimensional scalar stress back to the three-dimensional stress tensor. The proposed model is validated using a dataset generated by direct numerical simulation of a representative volume element (RVE) of composites, and further applied to the simulation of textile composites. The consistency between the constitutive model and the data highlights the advantages of the proposed approaches: integrating mechanics with ML significantly enhances predictive accuracy, even with limited data..

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## Bing Li

Professor, Northwestern Polytechnical University, China

**Dr. Bing Li** is a full professor in the School of Aeronautics at Northwestern Polytechnical University. His current research interests include dynamics of elastic/mechanical metamaterials/metasurfaces, wave mechanics, vibration and noise control, nondestructive testing. He has published >100 scientific papers in top-tier peer-reviewed journals and renowned international conferences such as *Nature Communications*, *Compos. Sci. Tech.*, *Compos. Part A*, *Compos. Part B*, *Phys. Rev. Appl.*, *Phys. Rev.*



B, J. Sound Vib., etc., >20 issued or pending patents, >40 invited presentations. Dr. Li is an Associate Editor/Editor Board Member/Topical Advisory Panel Member for five scientific journals. He has received a series of awards and honors, including Distinguished Expert of Chinese “Oversea Young Talents Program” (2020), The Youth Talent Program of Northwestern Polytechnical University (2018), the Fellow of IAAM (2023), Science and Technology Award of Shaanxi Higher Education (First place, 2021, 2025), etc.

### **Speech Title: Compact metasurfaces for extraordinary elastic-wave routing**

**Abstract.** Vibration and noise control have been realized by using phononic crystals and acoustic metamaterials. However, these methods have been always suffering from some fundamental limitations including narrow working bandwidth and large volume. How to realize broadband vibration and noise control in a small footprint has been a challenge. Recently, as a booming branch of metamaterials, a new kind of artificial structure named metasurface has provided feasible solutions. As a 2D mapping of metamaterial, metasurface has enabled extraordinary wavefront manipulation with compact and lightweight structure of sub-wavelength scale. In this work, we have proposed a series of ultrathin metasurfaces for extraordinary elastic-wave manipulations, including omnidirectional isolation, “one-way” propagation and highly-efficient routing. The present work extends the strategy for wave and vibration control in elastodynamics and acoustics.

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## **Weifu Sun**

**Young Chair Professor, Southeast University, China**

**Sun Weifu**, Young Chair Professor at Southeast University, has published over 120 SCI papers. Among them, as the first or corresponding author he has published 94 articles in international journals including in Compos. Part A/B, Compos. Sci. Technol., Adv. Func. Mater. (61 articles as the first or corresponding author in the past five years). The presenter has applied for one US invention patent and 15 Chinese patents as the first author, among which five invention patents have been authorized, and has participated in the compilation of one national standard. The research achievements have been widely cited by renowned scholars from over 30 countries (including more than 30 academicians from China, the United States, the United Kingdom, Canada, Germany and Australia, as well as over 10 presidents/fellows of international academic societies and chief editors of journals), with a total of 1,533 non-self citations. He has been included in the list of the top 2% of global scientists in 2024. He has presided over more than 10 scientific research projects, including the National Key Research and Development Program and general project of the National Natural Science Foundation of China. He has successively received honors such as the National High-level Young Talent Award, the Outstanding Young Scholar Award of the International Conference on Computing and Experimental Science and Engineering, and the National Outstanding Young Scholar Award in Explosion Mechanics..



### **Speech Title: Dynamic mechanical behaviors of composite materials and structures**

**Abstract.** Advanced materials and structures are the material basis and technological forerunners for the development of fields such as aerospace, transportation, and wind turbine blades. In complex service environments, loads such as explosion shock have characteristics such as time instability, high strain rate, and strong discontinuity. Composite materials and structures integrate mesoscopic phenomena such as deformation, damage and failure of heterogeneous materials like metal dislocations, polymer chain movements and fiber slip/fracture, demonstrating remarkable cross-scale interdisciplinary characteristics. The presenter has achieved several progress in the dynamic mechanical behavior of composite materials and structures. The presentation will focus on three

aspects: the prediction of buckling failure and the design of strengthening and toughening of curved thin-walled structures, the cross-scale construction of flat composite laminates and the constitutive model of composite materials, and the microscopic mechanism of nanoscale surface and interface forces and high-speed collision/penetration.

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**Yuanqing Li**

**Professor, Chong University, China**

**Dr. Yuanqing Li** is a Professor at the College of Aerospace Engineering, Chongqing University. He has worked in the research fields of polymer matrix composites for aerospace, smart composites, composite mechanics, and published more than 170 papers in peer-reviewed journals, including 120 first author and/or corresponding author papers. His research work received good attention from the international community, his total citations based on the Scopus is more than 10000 times with an h-index 53. He also holds more than 10 patents, and published 5 book chapters. He is currently the Academic Editor and Editorial Board Member of Nano Materials Science, Member of Nano-Micro Composites Committee, Smart Composites Committee, Composites Health Monitoring Committee of Chinese Society for Composites. He has been listed in the World's Top 2% Scientists lists by Stanford University on Elsevier in Career-long Impact list since 2023 and Single-year Impact since 2021.

### **Speech Title: Study on injection-molding carbon fiber/polyetherimide composites and their mechanical behavior**

**Abstract.** Polyetherimide (PEI), polyetheretherketone (PEEK), polysulfone (PSU), and other thermoplastic resins are classified as special engineering plastics due to their excellent mechanical properties, wear resistance, heat resistance, and long-term service temperatures exceeding 150°C, which have wide applications in aerospace, automotive, electronics, and other demanding fields. To further enhance the overall performance of these special engineering plastics, short fibers are commonly incorporated. Currently, the primary methods for preparing short fiber-reinforced composites based on special engineering plastics are melt blending extrusion followed by injection molding. However, a significant limitation of this conventional process is the resulting short retained fiber length in the composites, which severely compromises their mechanical properties. To address this issue, the applicant systematically investigated the influence of preparation process parameters on the mesostructure of the composites. This led to the proposal of a novel composite preparation technology designed to achieve high retained fiber length. Based on this technology, short fiber-reinforced PEI composites were developed, demonstrating a 50% increase in tensile strength and Young's modulus compared to traditional composites produced via extrusion and injection molding. Furthermore, the mechanical properties—including tensile and flexural behavior—and service performance of injection-molded PEI composites under various temperature environments were systematically investigated. This work revealed the interfacial failure mechanisms of SCF/PEI at different temperatures. The potential of these injection-molded PEI composites for use as load-bearing components was explored. Additionally, their friction and wear characteristics under service conditions, such as dry contact, water lubrication, and oil lubrication, were comprehensively studied. The high-performance injection-molded composites developed have found successful application in aerospace, defense and other fields.

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## Invited Speakers



**Nekane Guarrotxena**  
The Spanish National Research  
Council (CSIC), Spain



**Xu Li**  
Wuhan University of Technology,  
China



**Liying Jiang**  
Western University  
Canada



**Qiang Zhu**  
Southern University of Science and  
Technology, China



**Xiaogang Hu**  
Sun Yat-sen University (Shenzhen)  
China



**Gusztáv Fekete**  
Széchenyi István University  
Hungary



**Tao Zhou**  
The Pennsylvania State University,  
USA



**Haoqi Zhang**  
Sun Yat-Sen University  
China



**Hamed Kalhori**  
University of Technology Sydney  
UTS, Australia



**Xin Zhang**  
Southern University of Science and  
Technology, China



**Qian Li**  
Tongji University  
China



**Zhen Zhang**  
Tongji University  
China



**Yutong Fu**  
Chongqing University  
China



**Zunyi Duan**  
Northwestern Polytechnical  
University, China



**Peifeng Gao**  
Lanzhou University  
China



**Bing Wang**  
Fuzhou University  
China



**Ming Cai**  
Shanghai University of Engineering  
Science, China



**Feng Huang**  
China Energy Science and  
Technology Research Institute Co.,  
Ltd., China



**Quanzhou Yao**  
Southern University of Science and  
Technology, China



**Yinggang Miao**  
Northwestern Polytechnical  
University, China



**Yiqing Dai**  
Fuzhou University  
China



**Xin Yan**  
Beihang University, China



**Shaohua Yan**  
Shenzhen MSU-BIT University, China



**Zifeng Yuan**  
Peking University, China



**Yuwu Zhang**  
National University of Defense  
Technology, China



**Weidong Yang**  
Tongji University  
China



**Kai Huang**  
Harbin Institute of Technology  
China

## Part IV Oral Presentation

### Oral Session 1: Biomechanics, Biomimetic and Biomedical Applications

**Time:** 14:00-17:55, July 12, 2025

**Location:** Meeting Room 1 (会议室 1, 6F)

**Session Chairs:**

Gusztáv Fekete, Széchenyi István University, Hungary

Qian Li, Tongji University, China

Time	Paper ID	Presentation title & Presenter
14:00-14:30	MS2277	<b>(Keynote)</b> Effects of nitrogen-purging and post-annealing on the tensile performance of additively manufactured continuous fibre-reinforced composites <i>Dong Ruan, Swinburne University of Technology, Australia</i>
14:30-14:50	MS2107	<b>(Invited)</b> Self-assembly enabled printable and stretchable conductor for human interface <i>Tao Zhou, The Pennsylvania State University, USA</i>
14:50-15:10	MS2152	<b>(Invited)</b> Analytical approaches to describe wear in total knee replacements: potentials and limitations <i>Gusztáv Fekete, Széchenyi István University, Hungary</i>
15:10-15:30	MS2170	<b>(Invited)</b> Molding analysis of composite materials and their biomimetic structure design <i>Yutong Fu, Chongqing University, China</i>
15:30-15:45	MS2111	Continuous-gradient mineralized hydrogel for osteochondral defect repair <i>Shasha Yao, Sir Run Run Shaw Hospital, Zhejiang University, China</i>
15:45-16:00	MS2209	Design and energy absorption of a bioinspired tubular spine structure <i>Pengcheng Mo, Chongqing Jiaotong University, China</i>
16:00-16:30	Poster Presentation	
	Coffee Break	
16:30-16:50	MS2119	<b>(Invited)</b> Smart-optically tunable multifunctional nanocomposites <i>Nekane Guarrotxena, Spanish National Research Council (ICTP-CSIC), Spain</i>
16:50-17:10	MS2168	<b>(Invited)</b> Design and manufacture of plant fiber reinforced composites with integrated load-bearing and functional properties <i>Qian Li, Tongji University, China</i>



17:10-17:25	MS2113	<b>High deformable and robust ionic structure of biomimetic biomedical materials</b> <i>Yueqi Zhao, Sir Run Run Shaw Hospital, Zhejiang University, China</i>
17:25-17:40	MS2161	<b>Mechano-optical response of main-chain chiral-nematic liquid crystalline elastomer aiming to strain sensor</b> <i>Kohsuke Matsumoto, Ritsumeikan University, Japan</i>
17:40-17:55	MS2258	<b>Bio-inspired design and 3D printing for high-performance fiber-reinforced composites</b> <i>Linmei Zhang, Tongji University, China</i>

## Oral Session 2: Additive Manufacturing

**Time:** 14:00-17:55, July 12, 2025

**Location:** Meeting Room 2 (会议室 2, 6F)

**Session Chairs:**

Xin Yan, Beihang University, China

Shaohua Yan, Shenzhen MSU-BIT University, China

Time	Paper ID	Presentation title & Presenter
14:00-14:30	MS2236	<b>(Keynote) Topology optimization design and process implementation of 3D-printed fiber-reinforced composites</b> <i>Kunkun Fu, Tongji University, China</i>
14:30-14:50	MS2154	<b>(Invited) Liquid-induced healing: a novel strategy to eliminate porosities and enhance mechanical properties in laser additive manufacturing</b> <i>Xiaogang Hu, Sun Yat-sen University (Shenzhen), China</i>
14:50-15:10	MS2179	<b>(Invited) Microcracking resistance of 3D printed fibre composites at cryogenic temperatures</b> <i>Feng Huang, China Energy Science and Technology Research Institute Co., Ltd, China</i>
15:10-15:30	MS2138	<b>(Invited) Microscale and mesoscale process simulation for 3D printed continuous fiber-reinforced thermoplastic composites</b> <i>Xin Yan, Beihang University, China</i>
15:30-15:45	MS2187	<b>In-situ impregnation model for additive manufacturing via co-extrusion of continuous fiber bundles: a rigorous methodology for determining optimal manufacturing parameters</b> <i>Xiaochong Wang, Southern University of Science and Technology, China</i>

15:45-16:00	MS2185	<b>Strain rate- and path-dependent progressive failure modelling of 3D-printed continuous carbon fibre-reinforced composites</b> <i>Zhi Han, Southern University of Science and Technology, China</i>
16:00-16:30	<b>Poster Presentation</b>	
	<b>Coffee Break</b>	
16:30-16:50	MS2155	<b>(Invited) Advanced manufacturing of composite materials: additive manufacturing and design of continuous carbon fiber-reinforced polymer matrix composites</b> <i>Haoqi Zhang, Sun Yat-sen University, China</i>
16:50-17:10	MS2224	<b>(Invited) Extraordinary strength-ductility synergy in a gradient stainless steel fabricated by additive manufacturing</b> <i>Shaohua Yan, Shenzhen MSU-BIT University, China</i>
17:10-17:25	MS2192	<b>Performance-driven optimization of CFRP structures for additive manufacturing applications</b> <i>Yanan Xu, Southern University of Science and Technology, China</i>
17:25-17:40	MS2131	<b>Mechanism analysis and design optimization of additive manufacturing for continuous carbon fibre reinforced composites with complex fibre trajectory</b> <i>Yusi Wang, Southern University of Science and Technology, China</i>
17:40-17:55	MS2225	<b>A novel fabrication method for complex FRP formwork based on 3D printing and fiber winding technologies</b> <i>Meng Xiao, Southern University of Science and Technology, China</i>

## Oral Session 3A: Applied Mechanics

**Time:** 08:30-12:05, July 13, 2025

**Location:** Meeting Room 1 (会议室 1, 6F)

**Session Chairs:**

Bing Wang, Fuzhou University, China

Peifeng Gao, Lanzhou University, China

Time	Paper ID	Presentation title & Presenter
08:30-09:00	MS2259	<b>(Keynote) Compact metasurfaces for extraordinary elastic-wave routing</b> <i>Bing Li, Northwestern Polytechnical University, China</i>
09:00-09:20	MS2173	<b>(Invited) Deployable mechanics of a bistable composite tape-spring structure</b> <i>Bing Wang, Fuzhou University, China</i>

09:20-09:40	MS2126	<b>(Invited) Multi-scale modelling of REBCO superconducting magnets</b> <i>Peifeng Gao, Lanzhou University, China</i>
09:40-09:55	MS2116	<b>Hydrodynamic stability of the dense suspension flow in a plane channel</b> <i>Iuliia Klimenko, Skolkovo Institute of Science and Technology, Russia</i>
09:55-10:10	MS2132	<b>High-precision visual inspection defect detection system on CFRP using small aperture optical device and computer vision</b> <i>Amie Amir, JITRI Research Institute of Advanced Composite Forming Technology and Equipment, China</i>
10:10-10:25	MS2165	<b>A novel design framework for parallel topology optimization of continuous fiber reinforced composites</b> <i>Guixing Li, Southern University of Science and Technology, China</i>
<b>Coffee Break @10:25-10:40</b>		
10:40-11:00	MS2158	<b>(Invited) Impact force identification in engineering structures: from traditional regularization to hybrid neural networks</b> <i>Hamed Kalhori, University of Technology Sydney UTS, Australia</i>
11:00-11:20	MS2287	<b>(Invited) Fracture behaviors and criteria of nano-sized materials</b> <i>Kai Huang, Harbin Institute of Technology, China</i>
11:20-11:35	MS2188	<b>A new approach to achieve surface materialization on a CFRP composite laminate directly</b> <i>Jiashu Sheng, Southern University of Science and Technology, China</i>
11:35-11:50	MS2156	<b>Research on ice resistance and maneuvering performance of ships in broken ice region</b> <i>Jinlong Zhang, Dalian Maritime University, China</i>
11:50-12:05	MS2276	<b>Enhancing impact resistance of hybrid structures designed with triply periodic minimal surfaces</b> <i>Fenglei Li, Northwestern Polytechnical University, China</i>

## Oral Session 4A: Strength of Materials

**Time:** 08:30-12:10, July 13, 2025

**Location:** Meeting Room 2 (会议室 2, 6F)

**Session Chairs:**

Liyang Jiang, Western University, Canada

Zifeng Yuan, Peking University, China

Time	Paper ID	Presentation title & Presenter
08:30-09:00	MS2272	<b>(Keynote)</b> Mechanics-informed data-driven approach for constitutive modeling of aerospace materials <i>Chao Zhang, Northwestern Polytechnical University, China</i>
09:00-09:20	MS2141	<b>(Invited)</b> A novel approach to rapidly evaluate creep behavior of superalloys by a high-throughput compression creep testing <i>Qiang Zhu, Southern University of Science and Technology, China</i>
09:20-09:40	MS2118	<b>(Invited)</b> Fatigue analysis of dielectric elastomers under electromechanical loads <i>Liyang Jiang, Western University, Canada</i>
09:40-09:55	MS2157	Comprehensive analysis of the entire fracture surface topography parameters of S235R steel reinforced with CFRP laminates after tensile testing <i>Aleksandra Mirowska, Gdansk University of Technology, Poland</i>
09:55-10:10	MS2139	Research on the stress corrosion cracking behavior of 690 weld joints under primary water environment <i>Hui Li, Nuclear Power Institute of China, China</i>
10:10-10:25	MS2148	Fatigue life prediction analysis of combined sealing ring under pressure pulsation <i>Xuezhi Huang, Guangxi University of Science and Technology, China</i>
<b>Coffee Break @10:25-10:40</b>		
10:40-11:00	MS2235	<b>(Invited)</b> A triple-damage model for fibrous composite material with intra- and inter-laminar decomposition, reduced-order-homogenization and phase field method <i>Zifeng Yuan, Peking University, China</i>
11:00-11:20	MS2248	<b>(Invited)</b> Controllable kilohertz impact fatigue loading functioned by cyclic stress wave and its applications for alloy and threaded joint <i>Yinggang Miao, Northwestern Polytechnical University, China</i>

11:20-11:40	MS2234	<b>(Invited)</b> Multiscale homogenization method for the electromechanical coupling of porous viscoelastic nanocomposites <i>Weidong Yang, Tongji University, China</i>
11:40-11:55	MS2163	<b>Combined effect of precipitates morphology and precipitate-free zones on tensile property in beta titanium alloy</b> <i>Zhao Zhang, Ansteel Beijing Research Institute Co., Ltd, China</i>
11:55-12:10	MS2140	<b>Study on the effects of roughness on the environmental fatigue life of austenitic stainless steel</b> <i>Xuejiao Shao, Nuclear Power Institute of China, China</i>

## Oral Session 3B: Applied Mechanics

**Time: 14:00-18:05, July 13, 2025**

**Location: Meeting Room 1 (会议室 1, 6F)**

**Session Chairs:**

Xin Zhang, Southern University of Science and Technology, China

Zunyi Duan, Northwestern Polytechnical University, China

Time	Paper ID	Presentation title & Presenter
14:00-14:30	MS2231	<b>(Keynote)</b> Dynamic mechanical behaviors of composite materials and structures <i>Weifu Sun, Southeast University, China</i>
14:30-14:50	MS2169	<b>(Invited)</b> Ultrasonic detection of hybrid manufacturing defects in thick composite structures with variable-angle fibers <i>Zhen Zhang, Tongji University, China</i>
14:50-15:10	MS2162	<b>(Invited)</b> Impact properties of polyborosiloxane network and its reinforced carbon fiber composite <i>Xin Zhang, Southern University of Science and Technology, China</i>
15:10-15:25	MS2196	<b>Adaptive piezoelectric metamaterial for multi-mode lamb waves manipulation</b> <i>Rongyu Xia, Sun Yat-Sen University, China</i>
15:25-15:40	MS2197	<b>Tuning the stiffness of two-photon polymerized elastomer by spatially selective cross-linking at submicron scale</b> <i>Yu Long, Yongjiang Laboratory, China</i>



15:40-15:55	MS2194	<b>Toughness enhancement of honeycomb lattice structures through heterogeneous design</b> <i>Xin Shu, Hunan First Normal University, China</i>
<b>Coffee Break @15:55-16:10</b>		
16:10-16:30	MS2171	<b>(Invited) Multi-scale variable stiffness design of fiber-reinforced composite materials with considering "material-structure-manufacturing" collaborative optimization</b> <i>Zunyi Duan, Northwestern Polytechnical University, China</i>
16:30-16:50	MS2217	<b>(Invited) Study on the jamming mechanism and stick-slip friction behavior between FRP rebars and concrete</b> <i>Quanzhou Yao, Southern University of Science and Technology, China</i>
16:50-17:05	MS2175	<b>Experimental study on drag of rotating underwater vehicle in towing tank</b> <i>Honglin Ma, Northwestern Polytechnical University, China</i>
17:05-17:20	MS2281	<b>Inverse design and the energy absorption behavior of multi-stable mechanical metamaterial</b> <i>Qinyu Liang, Northwestern Polytechnical University, China</i>
17:20-17:35	MS2275	<b>Data-driven inverse design framework for broadband mode-selective elastic metasurfaces</b> <i>Jianjie Zhang, Northwestern Polytechnical University, China</i>
17:35-17:50	MS2252	<b>Topology optimisation of multiscale structures reinforced with continuous fibres</b> <i>Guangkai Wei, Tongji University, China</i>
17:50-18:05	MS2278	<b>Structural design and mimetic approach for underwater acoustic metasurfaces</b> <i>Yuxuan Duan, Northwestern Polytechnical University, China</i>

## Oral Session 4B: Strength of Materials

**Time:** 14:00-17:50, July 13, 2025

**Location:** Meeting Room 2 (会议室 2, 6F)

**Session Chairs:**

Ming Cai, Shanghai University of Engineering Science, China

Yiqing Dai, Fuzhou University, China

Time	Paper ID	Presentation title & Presenter
14:00-14:30	MS2190	<b>(Keynote)</b> Study on injection-molding carbon fiber/polyetherimide composites and their mechanical behavior <i>Yuan-Qing Li, Chongqing University, China</i>
14:30-14:50	MS2120	<b>(Invited)</b> Temperature influence and carbon black reinforcement effect on the tensile mechanical behavior of uncured rubber material <i>Xu Li, Wuhan University of Technology, China</i>
14:50-15:10	MS2174	<b>(Invited)</b> Low-velocity impact compressive damage of 3-D braided ramie fiber reinforced composites <i>Ming Cai, Shanghai University of Engineering Science, China</i>
15:10-15:25	MS2212	Dual-stage mechanical response and energy dissipation in double-negative metamaterials <i>Yong Liao, Chongqing Jiaotong University, China</i>
15:25-15:40	MS2134	A finite element model for predicting the forming behaviours of thermoplastic FRP bars under bending process <i>Yingpeng He, Southern University of Science and Technology, China</i>
15:40-15:55	MS2189	ST-GFormer: A baseline-free GCNN–transformer framework for multi-level damage assessment in CFRP structures using lamb waves <i>Kai Luo, Southern University of Science and Technology, China</i>
<b>Coffee Break @15:55-16:10</b>		
16:10-16:30	MS2273	<b>(Invited)</b> Nonlinear mechanics and blunt trauma resistance of horseshoe based metamaterials <i>Yuwu Zhang, National University of Defense Technology, China</i>
16:30-16:50	MS2262	<b>(Invited)</b> Full-scale field pull-out tests on GFRP/BFRP/steel nailing bars in soil slopes <i>Yiqing Dai, Fuzhou University, China</i>

16:50-17:05	MS2186	<b>A search for the upper-bound of the fracture energy and the quasi-propagation stage in brittle fracture</b> <i>Lingyue Ma, Shanghai University, China</i>
17:05-17:20	MS2181	<b>Creep damage failure mechanism of nickel-based superalloy IN738LC</b> <i>Zhifang Shi, Southern University of Science and Technology, China</i>
17:20-17:35	MS2214	<b>Heat transfer characteristics of function gradient metal rubber: theoretical modelling and experimental validation</b> <i>Yuhan Wei, Fuzhou University, China</i>
17:35-17:50	MS2233	<b>Mechanical and heat transfer performances of cellular metal foam at high temperatures</b> <i>Sihang Xiao, Beijing Institute of Technology, China</i>

# Part V Poster Presentation

## List of Posters

**Time: 16:00-16:30, July 12, 2025**

**Location: Lobby of Ballroom (宴会厅, 6F)**

<b>MS2121</b>	<b>Influence of carbonated alkaline residues on the mechanical behaviour and microporosity of eco-mortars with a lower carbon footprint</b> <i>Moisés Frías, Eduardo Torroja Institute for Construction Sciences (IETcc-CSIC), Spain</i>
<b>MS2128</b>	<b>Effects of temperature and pressure on the structures and elastic properties of carbon fibers: A molecular dynamics study</b> <i>Peng Wen, Nanjing University of Science and Technology, China</i>
<b>MS2145</b>	<b>Development of an assessment system for fracture safety and reliability on reactor pressure vessel</b> <i>Juan Luo, Nuclear Power Institute of China, China</i>
<b>MS2147</b>	<b>An efficient computational method for structural stress analysis in microchannel-containing structures</b> <i>Bingyang Wu, Nuclear Power Institute of China, China</i>
<b>MS2183</b>	<b>Numerical simulation and experimental study on mechanical properties of isolation bearings for nuclear island plant</b> <i>Dan Zhang, Nuclear Power Institute of China, China</i>
<b>MS2191</b>	<b>Thermophysical characteristics of plaster composites reinforced with the addition of different wastes employed in green construction applications</b> <i>Khaled Kharrati, University of Gabes, Tunisia</i>
<b>MS2216</b>	<b>Seismic analysis and qualification of the spent fuel storage rack</b> <i>Wanxia Zhu, Nuclear Power Institute of China, China</i>
<b>MS2270</b>	<b>Research on ablation and erosion damage of steel materials in extreme high-temperature, high-pressure, and high-velocity environments</b> <i>Jun Wang, Northwest Institute of Mechanical and Electrical Engineering, China</i>

# Part VI Presentation Guideline

## Parallel Oral Presentation Guidelines

### **Devices Provided by the Conference Organizer:**

- Laptops (with MS-Office & Adobe Reader)
- Projectors & Screen: Ratio 16:9
- Laser Sticks
- Microphones

### **Materials Provided by the Oral Presenters:**

- PowerPoint(Note: Please show your paper ID as **MS\*\*\*** on the last page.)

For presenters who don't send the PowerPoint to the Conference Secretary before the conference, please have your presentation ready in a memory stick, and save it on the laptop of your corresponding session about **15 minutes** before session starts.

### **Duration of Each Presentation**

- Keynote Speech: 30 minutes of presentation, including 3-5 minutes of Q&A
- Invited Speech: 20 minutes of presentation, including 3-5 minutes of Q&A
- Oral Presentation: 15 minutes of presentation, including 3-5 minutes of Q&A

## Poster Presentation Guidelines

### **Materials Provided by the Conference Organizer:**

- Poster Softboard
- Adhesive Tapes or Clamps

### **Materials Provided by the Presenters:**

- Home-Made Posters
- Posters Printed by Conference

### **Requirements for the Posters:**

- Material: not limited

Size: 60 cm (width) ×160 cm (height)

# Part VII Awards



## MSAM 2025 Excellent Young Scientist Award

The **Excellent Young Scientist Award** grants the most excellent young researchers in the fields of Material Strength and Applied Mechanics all over the world. **The MSAM 2025 Excellent Young Scientist Award is given in both areas (Material Strength or Applied Mechanics), and consists of a cash prize of 500 USD, a certificate and a plaque.**



## Best Oral Presentation Awards

During the conference, one Best Oral Presentation in **EACH** session will be selected based on the ranking of votes. At the end of each session, the winner will be announced and awarded.

**The awards consist of a certificate and free registration for the next MSAM conference.**



## Best Poster Presentation Awards

Best Poster Presentation(s) will be selected during the conference (selection ratio: 1 in 10). Judges (who have no conflict of interest with the presenters) will be invited by the Conference Chair to evaluate the posters.

**The award consists of a certificate and free registration for the next MSAM Conference.**

Results will be announced on MSAM official website.



## Best Student Presentation Awards

The Best Student Presentation Awards are awarded to promote, recognize, and reward undergraduate, Master's, and PhD students for quality research in the field of material strength and applied mechanics and the ability to effectively communicate it. Selection ratio: 1 in 10.

**The award consists of a certificate and free registration for the next MSAM Conference.**

Results will be announced on MSAM official website.



## Part VIII Conference Venue

### **Venue: Shenzhen Nanshan Genpla Hotel (深圳深铁塘朗城君璞酒店)**

Address: 6-16F, Block C of Tanglang Town, No.3333 Liuxian Avenue, Nanshan District, Shenzhen, Guangdong, China (深圳南山区留仙大道3333号塘朗城西区C座6-16楼)



### **Access to Shenzhen Nanshan Genpla Hotel**

#### **1. Shenzhen Bao'an International Airport - Shenzhen Nanshan Genpla Hotel (about 30km)**

(1) From the Airport, take Metro Line 11 towards Huaqiangnan (华强南), get off at the 3rd stop Qianhaiwan (前海湾), transfer to Metro Line 5 towards Huangbeiling (黄贝岭), get off at the 11th stop Tanglang (塘朗), get out from exit B, walk 460 meters to the hotel.

#### **2. Hong Kong Airport - Shenzhen Nanshan Genpla Hotel**

Airport Express + High Speed Train (35 - 45 minutes):

- Take Airport Express to Nam Cheong (南昌), then transfer to subway Tuen Ma Line(屯馬綫), get off at Austin (柯士甸)
- Upon exiting the subway, follow the signs to Hong Kong West Kowloon Railway Station. From the railway station, take Hong Kong - Shenzhen High Speed Train to Shenzhen North Railway Station (14-24 mins).

CNY 68-120. Departure time from 07:01 to 23:00 with an interval of 5-20 min.

- Take Metro Line 5 towards Chiwan (赤湾), get off at the 2nd stop Tanglang (塘朗), get out from exit B, walk 460 meters to the hotel.

#### **3. Shenzhen Bei Railway Station- Shenzhen Nanshan Genpla Hotel (about 4.2km)**

From the railway station, take Metro Line 5 towards Chiwan (赤湾), get off at the 2nd stop Tanglang (塘朗), get out from exit B, walk 460 meters to the hotel.

# Part IX Campus Tour

**Time:** 09:00 -11:00 am, July 14, 2025

**Activity:** SUSTech Campus tour, including visiting the campus, labs and other facilities

**Address:** 1088 Xueyuan Avenue, Shenzhen 518055, P.R. China

(广东省深圳市南山区学苑大道 1088 号)

**Visitors' Gathering time:** 08:50 am, July 14, 2025

**Gathering location:** At the main gate of SUSTech

**Note:** Please wear your MSAM 2025 conference badge.



**Main gate of SUSTech**

## Memo Pages

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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## Website



## Contact Us

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