**The 6th International Conference on Modeling in**

**Mechanics and Materials**



**CONFERENCE PROGRAM**



**Universiti Malaya**

**Universiti Tunku Abdul Rahman**

**7-13 July 2024**

**Kuala Lumpur, Malaysia**

**Organizers:**

***The 6th International Conference on Modeling in Mechanics and Materials (CMMM2024)***

***7-13 July, 2024, Kuala Lumpur, Malaysia***



##### Welcome

##### It is our great pleasure to welcome you all to the 6th International Conference on Modeling in Mechanics and Materials (CMMM2024) in Kuala Lumpur, Malaysia. Since the first CMMM Conference, the CMMM conferences have been devoted to recent research advances in the modeling in mechanics and materials both in small-scale and large-scale, focusing on the understanding and predicting material behaviors through multidisciplinary applications in artificial intelligence, big data, smart construction and smart materials.

##### The CMMM2024 Conference provides a forum for exchanging new ideas, sharing recent research developments, and renewing friendships for academic collaborations in the global community of modeling in mechanics and materials. It is expected to serve as a unique venue to showcase the theoretical, modeling and technological achievements in mechanics and materials, demonstrate the practical values of mechanics and material research, and raise the public awareness on the need for further researches and applications of mechanics and materials.

##### We would like to extend our sincere appreciation to all the participating authors and special session organizers for their valuable contributions, the keynote speakers for their inspiring lectures, the international scientific committee members for their valuable advice, and the local organizing committee members for their hard works to make this CMMM2024 a successful conference.

##### We wish all the participants of this conference to have a pleasant stay and a fruitful time in Kuala Lumpur.

##### Best Regards,

##### The CMMM2024 Committee

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##### Conference Venue

##### DoubleTree by Hilton Kuala Lumpur

##### fee

**Address:**

The Intermark 348, Jalan Tun Razak 50400 Kuala Lumpur, Malaysia.

**Website:**

<https://www.hilton.com/en/hotels/kuldtdi-doubletree-kuala-lumpur/>

**Room Information**

|  |  |
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| **Opening Ceremony:** | Ballroom A, Level 10 |
| **Parallel Oral Presentation:** | Room 1: Ballroom A, Level 10 |
| Room 2: Rafflesia, Level 10M |
| Room 3: Peony, Level 10M |
| Room 4: Lilies, Level 10M |
| Room 5: Acacia, Level 10M |
| Room 6: Lotus, Level 10 |
| Room 7: Frangipani, Level 10 |
| **Banquet:** | Ballroom A, Level 10 |
| **Buffet Lunch:** | Makan Kitchen, Level 11 |

Please be reminded that July is a peak season for tourism in Malaysia. Hotel rooms nearby the conference venue may be sold out very soon. We encourage conference delegates to make their own hotel reservation at their earliest convenience.

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| Dr. Bernard Saw Lip Huat | Universiti Tunku Abdul Rahman, Malaysia |

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| Prof. Chong Wen Tong | Universiti Malaya, Malaysia |

**Conference Secretariat:**

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| Peng Miaojuan | Shanghai University, China |  |
| Song Zhiguang | Harbin Engineering University, China |  |
| Sun Ligang | Harbin Institute of Technology (Shenzhen), China |  |
| Sun Yuzhou | Zhongyuan University of Technology, China |  |
| Tam Lik-Ho | Beihang University, China |  |
| Wang Gang | Soochow University, China |  |
| Wang Hui | Hainan University, China |  |
| Wang Lei | Beihang University, China |  |
| Wang Lifeng | Nanjing University of Aeronautics and Astronautics, China |  |
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| Zhu Linli | Zhejiang University, China |  |
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**Plenary Speakers**

**Li Hua**

**Professor, Fellow of ASME**

**School of Mechanical & Aerospace Engineering**

**Nanyang Technological University, Singapore**



**Topic: Modeling of Smart Hydrogels – A Case Study of Urea-Responsive Hydrogel Loaded via Urease**

A remarkable feature of smart biomaterials is their ability to deform in response to certain external bio-stimuli. Here, a novel biochemo-electro-mechanical model is presented for theoretical characterization of urea-sensitive hydrogel in response to external stimulus of urea, by the states of ionization and denaturation of the immobilized urease, where the model includes the effect of the fixed charge groups and temperature coupled with pH on the activity of the urease. Here, a novel rate of reaction is proposed to characterize the hydrolysis of urea that accounts for both the ionization and denaturation states of the urease subject to environmental conditions. After examination with published experimental data, it is confirmed that the model can characterize well the responsive behavior of the urea-sensitive hydrogel subject to the urea stimulus, including the distribution patterns of the electrical potential and pH within the hydrogel. The results point to the innovative means for generating electrical power via the enzyme-induced pH and electrical potential gradients, when the hydrogel contacts with the urea-rich solution, such as human urine.

**Biography:**

Dr. Li Hua is a Professor of Mechanics in Nanyang Technological University (NTU) Singapore and a Fellow of American Society of Mechanical Engineers (ASME). He initiated the research area of Multiphysics Modeling of Soft Matters (Smart Hydrogels), where he is recognized as the pioneer and leader in this area of research, in particular his pioneering work in introducing the first and only model for the hydrogels. Many research publications appeared after his pioneering work. He contributed to 30% of the top 50 most cited papers in this area, and sole-authored a monograph book entitled “Smart Hydrogel Modelling” published by Springer, which goes on to show the significant impact of his research work amongst the international community.

Dr. Li joined NTU as an Assistant Professor in 2006, and he was promoted to Associate Professor in 2013 and then to Full Professor in 2021. His research interests include the multiphysics modeling of soft matters (smart hydrogel in bioMEMS); machine learning based prediction (physics-informed and data-driven analysis for correlation among 3D printing process parameters, microstructure and mechanical property of manufactured part); development of highly efficient numerical computational methodology (meshless & multiscale algorithms); simulation of sustainable energy (building energy efficiency & fuel cell system); and dynamics (high-speed rotating shell & composite materials structure).

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**Lim Chee Wah**

**Professor, Fellow of ASME, ASCE, EMI and HKIE**

**Department of Architecture and Civil Engineering**

**City University of Hong Kong, Hong Kong**

穿着西装笔挺的男子

描述已自动生成

**Topic: Theory, Numerical Analysis and Experiments of Acoustic and Seismic Metamaterials and Metastructures**

The recent surge in the number of studies on seismic metamaterials is testimony to the fact that the concept of photonic crystals, phononic crystals and acoustic metamaterials is no longer limited to basic theories and dynamic characteristics. Apart from the peculiar observation including negative stiffness, negative mass density negative refraction properties, etc., auxetic metamaterials that govern negative Poisson’s ratio, nonreciprocal wave phenomena, origami/kirigami effects also find potential applications in geophysics and earthquake engineering. Except man-made synthetic resonators/metastructures, recently forest trees at geophysical scale are reported as naturally available seismic metamaterials with capability to mitigate ground born ambient vibrations and incoming seismic waves at subwavelength frequency region. The work to be presented here elaborates a class of materials and structures ranging from engineered phononic crystals and acoustic metamaterials to natural seismic metamaterials that show exotic yet with outstanding application potentials. Besides discussing the peculiar yet wonderful wave propagation characteristics of periodic structures for wave active control, topological protected interface modes, etc., the exciting wave dispersion response that found applications for manipulation Rayleigh wave and possible forestation as a means for geographical regional isolation against ground surface wave motion will also be presented.

**Biography:**

Currently a fellow of ASME, ASCE, EMI and HKIE, Ir Professor Lim received a B.Eng. from UTM (Malaysia), M.Eng. and PhD from NUS and NTU, respectively. He was a post-doctoral research fellow at UQ (Australia) and HKU. He is currently the subject editor for JSV and AMM, joint-editor for JoMMS, Managing Editor for JVET, Assoc Editor for IJBC, guest editor of ASCE/JEM, IJSSD, editorial board member of ES, IJSSD, Sci Reports, Royal Soc. Open Sci., etc. He has published one very well-selling title entitled “Symplectic Elasticity”, more than 390 international journal papers and have more than 16,500 citations. One of his papers has recorded over 1,350 citations since first published in JMPS in 2015 while another is published in Nature Communications.

Recently Professor Lim was awarded the prestigious 2020 JN Reddy Medal as a recognition “for significant and original contributions to vibration of plates and shells, smart piezoelectric structures, nanomechanics, and symplectic elasticity”. He delivered over 60 keynote/plenary papers, including one plenary lecture and chair another plenary lecture at WCCM-APACM 2022. In another scientific forum of four speakers organized by Chinese Science Bulletin and broadcasted on five online platforms, Professor Lim presented the opening lecture and the forum attracted accumulatively over 30,000 audience live. He holds one registered FE software, five patents, and three more patent applications are in review.

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**Zhou Shengxi**

**Professor**

**School of Aeronautics**

**Northwestern Polytechnical University, China**

穿着毛衣的男人

描述已自动生成

**Topic: Small-scale Mechanical Energy Harvesting---New Green Energy**

Over the past few decades, there has been remarkable progress in the development of low-powered smart wireless sensors and portable devices. However, a major challenge lies in providing continuous power sources for these sensors and devices. Meanwhile, there are a lot of complex environmental vibrations induced by mechanical equipment, vehicles, wind, ocean waves, etc. Small-scale mechanical energy harvesting which can be considered as new green energy has great potential to solve above challenging issue. How to design, model and test high-performance mechanical energy harvesters is of great interest. Based on recent research progress of his group, this presentation will discuss the design, modeling, dynamic analysis and experimental tests of small-scale mechanical energy harvesters subjected to different kinds of excitations, such as broadband base and rotational excitations, and time-varying wind speeds.

**Biography:**

Prof. Shengxi Zhou is currently a professor (full) in the School of Aeronautics at Northwestern Polytechnical University, who is a researcher in the field of vibration/flow energy harvesting. He obtained his Ph.D. in Mechanical Engineering from Xi'an Jiaotong University. He has a wide range of research interests including vibration/flow energy harvesting, nonlinear dynamics, vibration isolation, piezoelectric robots, signal processing, etc. Especially, he has a long career in structural design, theoretical modeling, numerical simulation, analytical solutions and optimization of electromechanical coupling systems.

Throughout his career, Prof. Zhou has published over 100 research papers on piezoelectric/electromagnetic mechanical energy harvesting, nonlinear dynamics, vibration control, etc, and his publications have received more than 8,000 citations in Google Scholar (H-index: 47). He has given more than 50 Keynote/Invited Talks in academic conferences/universities/institutes. He was a general chair of “The 3rd International Conference on Vibration and Energy Harvesting Applications (VEH 2021)”. He is currently a Member of ASME Energy Harvesting Technical Committee, a Member of the Council of and a Deputy Secretary-general of Chinese Society for Vibration Engineering (CSVE).

**Overview of Conference Program**

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| **Day** | **Time** | **Program** | **Venue** |
|
| **Double Tree by Hilton Kuala Lumpur** | | | |
| **Day 1**  **(July 7)** | 14:00-20:00 | Set up and Registration | Ballroom A Foyer Level 10 |
| **Day 2**  **(July 8)** | 08:00-08:30 | Set up and Registration | Ballroom A Foyer Level 10 |
| 08:30-11:30 | Opening and Welcome Session  Group Photo  Plenary Lectures | Ballroom A Level 10 |
| 12:00-14:00 | Lunch | Makan Kitchen Level 11 |
| 14:00-15:00 | Parallel Oral Presentation Sessions | Rooms 1-6 |
| 15:00-15:30 | Coffee Break | Ballroom A Foyer Level 10 |
| 15:30-17:30 | Parallel Oral Presentation Sessions | Rooms 1-6 |
| 19:00 | Conference Banquet | Ballroom A Level 10 |
| **Day 3**  **(July 9)** | 08:00-09:00 | Set up and Registration | Ballroom A Foyer Level 10 |
| 09:00-10:00 | Parallel Oral Presentation Sessions | Rooms 2-7 |
| 10:00-10:30 | Coffee Break | Ballroom A Foyer Level 10 |
| 10:30-11:45 | Parallel Oral Presentation Sessions | Rooms 2-7 |
| 12:00-14:00 | Lunch | Makan Kitchen Level 11 |
| 14:00-15:00 | Parallel Oral Presentation Sessions | Rooms 2-5 |
| 15:00-15:30 | Coffee Break | Ballroom A Foyer Level 10 |
| **Day 4**  **(July 10)** | 08:00-12:00 | Academic/Committee Discussion | Double Tree by Hilton Kuala Lumpur |
| 12:00-13:30 | CMMM2024 Committee Meeting |
| 14:00-18:00 | Certificate Distribution |
|  | | | |
| **Day 5**  **(July 11)** | 10:00-12:00 | Technical Visit to Universiti Malaya | Universiti Malaya |
| **Day 6**  **(July 12)** | 10:00-12:00 | Technical Visit to  Universiti Tunku Abdul Rahman | Universiti Tunku Abdul Rahman Abdul Rahman |

**Conference Program**

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| **Day 2 (08 July) Morning: Welcome and Plenary Lecture**  **(Room 1: Ballroom A,** **Level 10)**  **Moderator: Prof. Yuen Richard Kwok Kit** | | | | |
| **Time** | **Track** | **Presenter** | **Affiliation** | **Procedure** |
| 08:30-08:35 | Opening and Welcome Session | Ir. Prof. Dato' Dr. Ewe Hong Tat | Universiti Tunku Abdul Rahman | Welcome Speech by the President of Universiti Tunku Abdul Rahman |
| 08:35-08:40 | Dr. Bernard Saw Lip Huat | Universiti Tunku Abdul Rahman | Opening Speech by Conference OC Chair |
| 08:40-08:45 | **Group Photo** | | | |
| 08:45-09:30 | Plenary Lecture | Prof. Li Hua | Nanyang Technological University, Singapore | Modeling of Smart Hydrogels – A Case Study of Urea-Responsive Hydrogel Loaded via Urease |
| 09:30-10:00 | **Tea Break** | | | |
| 10:00-10:45 | Plenary Lecture | Prof. Lim Chee Wah | City University of Hong Kong, Hong Kong | Theory, Numerical Analysis and Experiments of Acoustic and Seismic Metamaterials and Metastructures |
| 10:45-11:30 | Prof. Zhou Shengxi | Northwestern Polytechnical University, China | Small-scale Mechanical Energy Harvesting–New Green Energy |
| 12:00-14:00 | **Lunch** | | | |

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| **Day 2 (08 July) Afternoon (Room 1: Ballroom A,** **Level 10)**  **Moderators: Liew Kim Meow and Yin Binbin** | | | |
| **MS06: Modeling via Experimental and Numerical Techniques**  **Organizers: Liew Kim Meow**, City University of Hong Kong, Kowloon, Hong Kong; **Yin Binbin**, The Hong Kong Polytechnic University, Hong Kong; **Sun Weikang**, City University of Hong Kong, Kowloon, Hong Kong | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Zhu Ronghua (**Keynote Speaker,** Zhejiang University) | Modeling in Offshore Wind | Zhu Ronghua\* |
| 14:20-14:35 | Weng Yiwei  (The Hong Kong Polytechnic University) | Using SHCC as Bonding Agent to Simultaneously Improve Interlayer and Flexural Performances in 3D Concrete Printing | Weng Yiwei, Ye Junhong,  Yu Jie, Li Heng, Fei Teng\* |
| 14:35-14:50 | Wang Wei  (University of New South Wales) | Mxene Networks Toward Advanced Polymer Composites | Wang Wei\* |
| 14:50-15:05 | Sun Weikang  (City University of Hong Kong) | A Meshfree Framework for Modelling Fluid-Induced Vibration of Structures | Sun Weikang,  Liew Kim Meow\* |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:50 | Yuen Richard Kwok Kit (**Keynote Speaker,** City University of Hong Kong) | Molecular Dynamics (MD) Simulation Approach for Thermal Behaviour of Graphdiyne-Reinforced Polyurethane | Chen Qian, Yang Wenjie, Yuen Anthony Chun Yin, Chen Timothy Bo Yuan, Yuen Richard Kwok Kit \* |
| 15:50-16:10 | Song Zhiguang  (**Keynote Speaker,** Harbin Engineering University) | Modal Parameter Identification and Damage Localization of Composite Helicopter Rotor Blades Based on AR/PR Identification | Song Zhiguang\*,  Yuhan Sun |
| 16:10-16:25 | Wang Jun  (Nanjing Tech University) | Model Experiment and Numerical Simulation for Investigating the Failure Modes of Transmission Tower Foundations under Rainfall-Induced Landslides | Wang Jun\*, Li Kang,  Lai Tao, Xu Lingyu,  Han Xiaojian |
| 16:25-16:40 | Zhang Xiangyu  (City University of Hong Kong) | Dynamics of Rising Bubble Beneath a Horizontal Smooth Wall | Zhang Xiangyu,  Liew Kim Meow\* |
| 16:40-16:55 | Jiang Liming (The Hong Kong Polytechnic University) | Experiment and Simulation of Thermal Response of Small-scaled 3D Printed Concrete under Fire Scenario | Jiang Liming\*, Wang Jinjin, Chen Cheng, Wang Peijun, Weng Yiwei, Asif Usmani |
| 16:55-17:10 | Zhang Weiwei  (City University of Hong Kong) | Nano-Micro Pore Structure Characteristics of Carbon Black and Recycled Carbon Fiber Reinforced Sustainable Alkali-Activated Materials | Zhang Weiwei,  Liew Kim Meow\* |
| 17:10-17:25 | Li Dongming (Wuhan University of Technology) | Computational Fracture Modelling with Complex Variable Enrichment | Li Dongming\* |
| 19:00 | **Banquet** | | |

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| **Day 2 (08 July) Afternoon (Room 2:** **Rafflesia, Level 10M)**  **Moderators: Yang Qingsheng, Wang Gang and Wang Lifeng** | | | |
| **MS01: Multiscale Modeling and Optimization of Advanced Intelligent Materials and Structures**  **Organizers: Liu Xia**, Beijing University of Technology; **Goh Kek Boon**, Monash University Malaysia; **Ye Hongling**, Beijing University of Technology; **Zhang Xingyu**, Beijing University of Technology; **He Lewei**, South China Normal University; **Li Hua**, Nanyang Technological University; **Yang Qingsheng**, Beijing University of Technology  **MS03: Theme Area: Structural Acoustics and Vibration**  **Organizers: Wang Gang**, Soochow University, China  **MS09: Peridynamic Theory and Multiphysical/Multiscale Methods for Complex Material Behavior**  **Organizers: Lai Xin**, Wuhan University of Technology; **Han Fei**, Dalian University of Technology; **Hu Yile**, Shanghai Jiaotong University; **Wang Linjuan**, Beihang University  **MS11: Dynamics and Control of Advanced Structures**  **Organizers: Wang Lifeng**, Nanjing University of Aeronautics and Astronautics | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Wang Lifeng (**Keynote Speaker**, Nanjing University of Aeronautics and Astronautics) | Active Metamaterial Bandgap Tuning and Wave Characteristic Control | Wang Lifeng\*, Gao Yuqiang |
| 14:20-14:35 | Liu Xia  (Beijing University of Technology) | Coarse-grained Molecular Dynamics Simulation of Hydrogel Microstructures | Liu Xia\*, Zong Ting,  Wang Xin |
| 14:35-14:50 | Wang Gang  (Soochow University) | The Virtual Testing of the Sound Insulation of Panel Structures Based on VTR | Liu Weilong, He Yijie,  Wang Gang\* |
| 14:50-15:05 | Liu Qingsheng  (Soochow University) | Study on the Compressive Behavior of Unbonded Flexible Riser with Composite Layers | Liu Qingsheng\*, Wang Gang, Chen Feng, Liu Tongshun, Liu Yayun |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:50 | Yang Qingsheng (**Keynote Speaker**, Beijing University of Technology) | The Design and Study of The Asymmetric, Non-Reciprocal, and Adjustable Poisson’s Ratios Metamaterials | Yang Qingsheng\*,  Tang Aijie |
| 15:50-16:05 | Li Jicheng  (Beijing University of Technology) | An Efficient Fiber Optimization Method Based on Deep Learning for Continuous Fiber-Reinforced Composite Structure | Li Jicheng\*, Ye Hongling |
| 16:05-16:20 | Shi Juanjuan  (Soochow University) | Dynamic Modeling and Slippage Characterization of Locally Failed Bearings under Multifactorial Excitations | Shi Juanjuan\*, Zhang Xinyin, Shen Changqing, Huang Weiguo, Zhu Zhongkui |
| 16:20-16:35 | Liu Tongshun  (Soochow University) | Fractal Analysis of Cutting Signal and Its Application to Tool State Monitoring | Liu Tongshun\* |
| 16:35-16:50 | Dong Youheng  (Hohai University, Nanjing University of Aeronautics and Astronautics) | Travelling Wave Vibrations of Spinning Cylindrical Shells | Dong Youheng, Liu Huan, Wang Lifeng, Hu Haiyan\* |
| 16:50-  17:05 | Jing Yabin  (Nanjing University of Aeronautics and Astronautics) | Flexural Wave Propagation in Nanoscale Metamaterial Beam | Jing Yabin, Wang Lifeng\* |
| 17:05-17:20 | Wang Yibo  (Zhengzhou University) | Numerical Simulation of Rock Fracture Propagation with a 3D Elastoplastic Peridynamics Model | Wang Yibo, Kou Lei\*,  Li Wuxue, Shi Xiaodong, Liang Huiyuan |
| 17:20-17:35 | Yang Dong  (Chang’ an University) | Modelling Quasi-Brittle Fracture with a Peridynamics-Based Cohesive Zone Model (PD-CZM) | Yang Dong\* |
| 17:35-17:50 | Liu Chuanzhi  (Beijing University of Technology) | Physical Fields Leading Structure Design Strategy for Meta-Fiber Reinforced Hydrogel Composites by Deep Learning | Zhang Xingyu \*, Liu Chuanzhi, Liu Xia, Yang Qingsheng |
| 19:00 | **Banquet** | | |

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| **Day 2 (08 July) Afternoon (Room 3: Peony, Level 10M)**  **Moderators: Song Zhiguang, Cheng Yumin and Deng Yajie** | | | |
| **MS02: Structural Dynamic Modeling, Analysis and Control**  **Organizers: Song Zhiguang**, Harbin Engineering University; **Lu Shufeng**, Inner Mongolia University of Technology; **Lei Zuxiang**, East China Jiaotong University  **MS16: Numerical Methods Theory and Applications**  **Organizers: Cheng Yumin**, Shanghai University; **Peng Miaojuan**, Shanghai University; **Wang Jufeng**, Ningbo University of Finance & Economics; **Cheng Heng**, Taiyuan University of Science and Technology | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Cheng Yumin (**Keynote Speaker**, Shanghai University) | Development of the Improved Element-Free Galerkin Method | Cheng Yumin\* |
| 14:20-14:35 | Mi Xiao  (Harbin Engineering University) | A Mode Localization Inspired Vibration Control Method Based on Non-Uniform Design of Plate Structures | Mi Xiao, Song Zhiguang\* |
| 14:35-14:50 | Lu Shufeng  (Inner Mongolia University of Technology) | Linear and Nonlinear Vibration Suppression of Piezoelectric Laminated Composite Cantilever Plate | Lu Shufeng\*, Shi Ruoqi, Li Hongjie, Zhang Wei, Song Xiaojuan |
| 14:50-15:05 | Hu Yu  (Harbin Engineering University) | A Reduced-Order Based on Nonlinear Normal Modes and Component Mode Synthesis | Hu Yu, Song Zhiguang\* |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:50 | Deng Yajie  (**Invited Speaker**, Tongji University) | An Improved Interpolating Complex Variable Element Free Galerkin Method for the Pattern Transformation of Hydrogel | Deng Yajie, He Xiaoqiao\*, Dai Ying\* |
| 15:50-16:05 | Wen Shurui  (Harbin Engineering University) | Study on Band-Gap Properties of Acoustic Metamaterial Beam with Periodically Variable Cross-Sections | Wen Shurui\*, Wu Zhijing |
| 16:05-16:20 | Ma Wensai  (Inner Mongolia University of Technology) | Nonlinear Analysis on 12-Pole Legs Variable Stiffness Rotor Active Magnetic Bearings System under Complex Resonance | Ma Wensai, Liu Fanghao, Lu Shufeng\*, Song Xiaojuan, Jiang Xin, Liu Yazhe |
| 16:20-16:35 | Sun Yuhan  (Harbin Engineering University) | Active Vibration Control of Piezoelectric Joined Conical-Cylindrical Shells Based on Virtual Sensing | Sun Yuhan, Song Zhiguang\* |
| 16:35-16:50 | Liu Yaze  (Inner Mongolia University of Technology) | Nonlinear Vibration for Graphene-Reinforced Bistable Plate | Liu Yaze\*, Lu Shufeng,  Ma Wensai |
| 16:50-  17:05 | Liu Zhen  (Xi'an Jiaotong University) | Modelling Method and Mechanical Analysis of CVI C/SIC Connecting Panels | Liu Zhen\*, Xiao Zhuocheng, Dang Tianjiao |
| 19:00 | **Banquet** | | |

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| **Day 2 (08 July) Afternoon (Room 4: Lilies, Level 10M)**  **Moderator: Sun Yuzhou** | | | |
| **MS04: Advanced Theories and Models for Engineering Materials and Structures**  **Organizers: Sun Yuzhou**, Zhongyuan University of Technology; **Wang Hui**, Hainan University; **Yan Jianwei**, East China Jiaotong University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Wang Hui (**Keynote Speaker**, Hainan University) | Hierarchical Design of Auxetic Metamaterial with Peanut-Shaped Perforations for Extreme Deformation: Self-Similar or not? | Qu Jingying, Wang Hui\* |
| 14:20-14:35 | Zhao Yi  (Zhongyuan University of Technology) | Experimental Study on Axial Compression Performance of Glass Sand Concrete-Filled Steel Tubular Columns | Zhao Yi\*, Bao Yijie,  Lin Qingli, Meng Bin |
| 14:35-14:50 | Yu Shuisheng  (Zhongyuan University of Technology, Henan Engineering Research Center of Mechanics and Engineering Structures) | Influence of PVA Fiber on the Sulfate Resistance of Concrete with Waste Glass Powder | Yu Shuisheng,  Chen Siwen, Zhao Yi,  Wu Shuai, Sun Yuzhou\* |
| 14:50-15:05 | Hou Dongchang  (Zhongyuan University of Technology) | Vibration of Strain Gradient Multilayered Heterostructures via Meshfree Moving Kriging Interpolation Method | Hou Dongchang\*, Sun Yuzhou, Zhao Yi |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:45 | Chai Tianjian  (East China Jiaotong University) | The Effect of Pit Excavation on The Longitudinal Deformation of Adjacent Shield Tunnels | Chai Tianjian, Yan Jianwei\*, Guo Wengjie |
| 15:45-16:00 | Wang Yanfeng  (Zhongyuan University of Technology) | The Experimental Study on the Variation Model of Piezoresisitivity of Carbon Nanotube Cement-Based Composite Materials | Sun Yuzhou, Zhao Yi, Wang Yanfeng\* |
| 16:00-16:15 | Duan Xuejun  (Zhongyuan University of Technology) | Iron- Manganese Silicate: A Novel and Efficient Ozonation Catalyst for The Degradation of Acrylic Acid | Duan Xuejun\*, Liu Yue |
| 16:15-16:30 | Wang Dan  (Hainan University) | Reverse Design of Multifunctional Auxetic Metamaterial Based on Machine Learning Model | Wang Dan\*, Lei Yongpeng, Wang Hui |
| 16:30-16:45 | Lei Yongpeng  (Hainan University) | Mechanical and Acoustic Properties of Novel Multifunctional Metamaterials | Lei Yongpeng\*,  Liu Ruipeng |
| 19:00 | **Banquet** | | |

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| **Day 2 (08 July) Afternoon (Room 5: Acacia, Level 10M)**  **Moderator: Zhou Shengxi** | | | |
| **MS10: Small-Scale Energy Harvesters: Design, Modeling, and Applications**  **Organizers: Zhou Shengxi**, Northwestern Polytechnical University; **Zhang Bin**, Shandong University; **Lai Zhihui**, Shenzhen University; **Yan Bo**, Zhejiang Sci-Tech University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Yang Tao (**Keynote Speaker**, Northwestern Polytechnical University) | Nonlinear Energy Harvesting Vibration Isolator | Yang Tao\* |
| 14:20-14:35 | Zhang Cailiang  (Zhejiang University, Yangjiang Offshore Wind Power Laboratory) | Dynamics Analysis of a Hybrid Piezoelectric-Dielectric Harvester | Zhang Cailiang\*,  Lai Zhihui, Chen Yong, Tu Zishen, Liu hanqiu, Zhu Ronghua |
| 14:35-14:50 | Zhang Jiaqin  (Northwestern Polytechnical University) | Mechanical Energy Harvesting System Based on Rack and Pinion Mechanism for Heavy-Haul Freight Railways | Zhang Jiaqin, Du Houfan, Wang Suo, Zhang Huirong, Zhou Shengxi \* |
| 14:50-15:05 | Hou Zongbin  (Shandong university) | An Energy Optimization Method for Self-Adjusting Multi-Degree-of-Freedom Cable Traction Wave Energy Converters | Hou Zongbin, Lu Xinrui, Chen Yuan\* |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:45 | Zhang Bin  (Shandong University) | Design and Analysis of Power Management Circuit for Electromagnetic Energy Harvesting Device | Yang Guang,  Zhang Hongxi, Wang Bin,  Chai Ruibo, Zhang Bin\* |
| 15:45-16:00 | Wang Wei  (Zhengzhou University) | Nonlinear Dynamics of an Asymmetric Bistable Energy Harvester with Unilateral Piecewise Nonlinearity | Wang Wei\*, Wang Jianhui, Liu Shuangyan, Wei Ronghan |
| 16:00-16:15 | Xia Wei  (Xi’an Jiaotong University) | Role of Twisting Kinematics in a Small Flutter-Driven Wind Energy Harvester | Xia Wei\*, Wang Kun,  Liang Xu, Yang Qing,  Hu Shuling\* |
| 16:15-16:30 | Zhu Yue  (Northwestern Polytechnical University) | An Electromechanical Coupling Dynamic Model of the Flexible Piezoelectric Cantilever Thin Plate with Large Deformation | Zhu Yue, Chen Gantong, Zhou Shengxi\* |
| 19:00 | **Banquet** | | |

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| **Day 2 (08 July) Afternoon (Room 6: Lotus, Level 10)**  **Moderator: He Xiaoqiao** | | | |
| **MS21: Computational Modelling on Mechanical Characteristics of Nanomaterials**  **Organizers: He Xiaoqiao**, City University of Hong Kong; **Zhu Linli**, Zhejiang University; **Sun Ligang**, Harbin Institute of Technology (Shenzhen); **Yi Shenghui**, Shenzhen MSU-BIT University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:20 | Liu Xuefeng (**Keynote Speaker**, China Three Gorges University) | Peridynamic Study on Fracture Properties of Graphene | Liu Xuefeng\* |
| 14:20-14:35 | Yi Shenghui  (**Invited Speaker**, Shenzhen SMU-BIT University) | Modelling on Shape Transition of Nanostructure-Induced Bistable Shells | Yi Shenghui\* |
| 14:35-14:50 | Wang Hongyu  (Zhejiang University) | A Molecular Dynamics Exploration and Modeling of Strain Gradient Elasticity Theory on the Compressive Performance of Nanocrystalline Nickel under Ultra High Pressure | Wang Hongyu, Zhu Linli\* |
| 14:50-15:05 | Qin Zhijia  (Harbin Institute of Technology) | Study on the Size Effect of Hierarchical Nanotwins on the Formation and Deformation Mechanisms of Nickel-Based Superalloys | Qin Zhijia, Sun Ligang\* |
| 15:05-15:30 | **Tea Break** | | |
| 15:30-15:45 | Sun Ligang  (**Invited Speaker**, Harbin Institute of Technology) | Anisotropic Mechanical Properties and Deformation Mechanisms of Metals with the Effect of Nanotwins and Nanoprecipitation | Sun Ligang\* |
| 15:45-16:00 | Mei Huanhuan  (Xi’an Jiaotong University, City University of Hong Kong) | Manipulation and Assembly of Silver Nanowires by Tungsten Probe In-Situ | Mei Huanhuan, Mei Xuesong, Cui Jianlei\*, He Xiaoqiao\*, |
| 16:00-16:15 | Bie Zhiwu  (City University of Hong Kong, City University of Hong Kong Shenzhen Research Institute) | Study on Crack Resistance Mechanism of Helical Carbon Nanotubes in Nanocomposites | Bie Zhiwu, He Xiaoqiao\* |
| 16:15-16:30 | Zhu Jiaqi  (City University of Hong Kong) | Elemental Segregation at Superlattice Intrinsic Stacking Fault in Γ’ Phase of Ni-Based Superalloys | Zhu Jiaqi, Sun Ligang, He Xiaoqiao\* |
| 16:30-16:45 | Zhang Yujie  (Zhejiang Univercity) | Research on the Elastic-Plastic Constitutive Behavior and Creep Properties of Multi-Orders Biphasic Composite Titanium Alloys | Zhang Yujie, Zhu Linli\* |
| 16:45-  17:00 | Shi Xian  (Suzhou University of Science and Technology) | A Molecular Dynamics Study on the Role of the CNT Junction in Mechanical Performances of CNT/Polymer Nanocomposite | Shi Xian\*, He Xiaoqiao |
| 19:00 | **Banquet** | | |

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| **Day 3 (09 July) Morning (Room 2:** **Rafflesia, Level 10M)**  **Moderators: Moderator:** **Zhang Yang and Sun Weikang** | | | |
| **MS06: Modeling via Experimental and Numerical Techniques**  **Organizers: Liew Kim Meow**, City University of Hong Kong, Kowloon, Hong Kong; **Yin Binbin**, The Hong Kong Polytechnic University, Hong Kong; **Sun Weikang**, City University of Hong Kong, Kowloon, Hong Kong  **MS15: Advances in Numerical and Data-Driven Modeling Methods for Computational Biomedical Engineering**  **Organizers: Ademiloye A.S.**, Swansea University; **Abughabush Mohammad**, Swansea University; **Molina Jorge**, University of Granada; **Tam Lik-Ho**, Beihang University; **Chen Kinon**, Beihang University; **Zhang Yang**, Nanjing University of Science and Technology; **Ooi Ean Hin**, Monash University Malaysia; **Xiang Ping**, Central South University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:20 | Wang Yu  (**Keynote Speaker,** University of Science and Technology of China) | Lai’an Fire Tests: Fire Dynamics of Real Urban Village Dwellings | Wang Yu\* |
| 09:20-09:35 | Yu Hao  (City University of Hong Kong) | Modeling Extrusion Process and Layer Deformation in 3D Concrete Printing via Smoothed Particle Hydrodynamics | Yu Hao,  Liew Kim Meow\* |
| 09:35-09:50 | Kong Yue  (Wuhan University of Technology) | An Innovative Attempt in Smart Wearable Firefighting Equipment: Multifunctional Flame-retardant Cotton Fabric and Self-powered Fire-Alarm System | Kong Yue, Zhang Guangyi, Yuan Bihe\* |
| 09:50-10:05 | Xu Shun (University of Science and Technology of China) | The Effect of Adding Soluble Polymer on the Performance of the Propeller | Xu Shun\*, Zhao Xiaoyang, Liew Kim Meow, Hou Guoxiang |
| 10:05-10:30 | **Tea Break** | | |
| 10:30-10:45 | Zhu Yu  (Wuhan University of Technology) | Multi-Stage Releasing Water: The Unique Decomposition Property Makes Attapulgite Function as an Unexpected Clay Mineral-Based Gas Source in Intumescent Flame Retardant | Zhu Yu, Gao Zeyang,  Yuan Bihe\* |
| 10:45-11:00 | Li Yingjie  (City University of Hong Kong) | Effects of Different Carbonization Curing Processes on the Electrical Resistivity of Paraffin-Doped Cementitious Materials | Li Yingjie,  Liew Kim Meow\* |
| 11:00-11:15 | Huang Jiasheng  (City University of Hong Kong) | Accelerating Peridynamics Modeling: Leveraging Machine Learning Surrogate Model for Efficient Simulations | Huang Jiasheng,  Liew Kim Meow\* |
| 11:15-11:30 | Gao Xiongfei  (City University of Hong Kong) | Phase Field Modeling for Crack in Electrode Storage Particle with Solid Electrolyte Interphase | Gao Xiongfei,  Liew Kim Meow\* |
| 11:30-11:45 | Zhang Yang (Nanjing University of Science and Technology) | Fracture Simulation of Fiber Reinforced Composite Panels with Holes | Zhang Yang\* |
| 11:45-12:00 | Mu Xiaoshao  (City University of Hong Kong) | Life-Cycle Assessment of a Detached House: A Comparative Analysis of 3D Printing and Precast Techniques | Mu Xiaoshao,  Liew Kim Meow\* |
| 12:00-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Morning (Room 3: Peony, Level 10M)**  **Moderators: Li Cheng, Lin Guan and Dai Jian-Guo** | | | |
| **MS05: Vibration and Control of Micro/Nano-Scaled Materials and Structures**  **Organizers: Li Cheng**, Changzhou Institute of Technology; **Zhang Bo**, Southwest Jiaotong University; **Li Shuang,** Soochow University  **MS07: Numerical Modeling of FRP-Concrete Hybrid Structures**  **Organizers: Lin Guan**, Southern University of Science and Technology; **Jiang Cheng**, Western Sydney University  **MS17: Advanced Modeling of Concrete Materials and Structures**  **Organizers: Dai Jian-Guo**, City University of Hong Kong; **Dong Biqin**, Shenzhen University; **Wang Zhao**, University of Tokyo; **Kai Mingfeng**, The Hong Kong Polytechnic University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:15 | Li Cheng  (Changzhou Institute of Technology) | Nonlinear In-Plane Thermal Buckling of FG-CNTRC Shallow Arches | Wang Xinyue, Li Cheng\*, Xie Feng |
| 09:15-09:30 | She Gui-Lin  (Chongqing University) | Nonlinear Low-Velocity Impact of Porous Functionally Graded Conical Nanoshells | Li Yin-Ping, Zhang Yi-Wen, She Gui-Lin\* |
| 09:30-09:45 | Liu Juan  (Southwest Jiaotong University) | Wave Propagation Responses of Porous  Bi-Directional Functionally Graded Magneto-Electro-Elastic Nanoshells Via Nonlocal Strain Gradient Theory | Wang Xinte, Liu Juan\*,  Hu Biao, Zhang Bo,  Shen Huoming |
| 09:45-10:00 | Zhang Bo  (Southwest Jiaotong University) | Shear Buckling Mode Localization Characteristics of Double-Layered Microplate System | Zhang Bo\*, Shen Huoming, Li Cheng, Zhang Xu |
| 10:00-10:30 | **Tea Break** | | |
| 10:30-10:45 | Dai Jian-Guo  (City University of Hong Kong) | Simulation of Long-term Performance of FRP-reinforced Concrete Beams Subjected to Sustained Loading and Marine Environmental Exposure | Keita Iwama, Kai Mingfeng, Koichi Maekawa,  Dai Jian-Guo\* |
| 10:45-11:00 | Lin Guan  (Southern University of Science and Technology) | Numerical Simulation of RC Columns Weakly Confined with FRP under Cyclic/Seismic Loadings | Lin Guan\* |
| 11:00-11:15 | Xian Xiangping  (City University of Hong Kong) | Development of Cement-Free Concrete Products Exclusively Using Steel Slag via Dry-Cast and Ambient-Pressure Carbonation | Xian Xiangping\* |
| 11:15-11:30 | Wang Zhao  (The University of Tokyo) | Experimental and Numerical Investigation of the Electro-chemical Properties of Steel Fiber Reinforced Pseudo Concrete | Wang Zhao, Ren Mingqian, Hiroaki Aoki, Hideaki Takahashi, Koichi Maekawa\* |
| 11:30-11:45 | Xiong Wei  (The Hong Kong Polytechnic University, Southern University of Science and Technology) | Numerical Simulation of FRP-Concrete-Steel Double Skin Tubular Columns with a Stiffened Steel Tube under Concentric or Eccentric Compression | Xiong Wei\* |
| 12:00-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Morning (Room 4: Lilies, Level 10M)**  **Moderators: Xiong Jian and Yang Jin-Shui** | | | |
| **MS24: Mechanics of Lightweight Composite Structures**  **Organizers: Xiong Jian**, Harbin Institute of Technology; **Yang Jin-Shui**, Harbin Engineering University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:20 | Xiong Jian  (**Keynote Speaker,** Harbin Institute of Technology) | Face-Core and Inner Core Debonding Mechanics Model of Composite Honeycomb Sandwich Structures | Xiong Jian\* |
| 09:20-09:35 | Jiang Weimin  (Huazhong University of Science and Technology) | Modal Characteristics of Composite Sandwich Plates with Reentrant Honeycomb Cores | Jiang Weimin, Liu Jiayi\* |
| 09:35-09:50 | He Xiao  (Harbin Engineering University) | Design and Fabrication of an All-Composite Broadband Electromagnetic Wave Absorption Structure with Ventilation Capacity | He Xiao\*, Wang Shijie,  Yang Linhong |
| 09:50-10:05 | Chen Min  (Xi’an Jiaotong-Liverpool University) | Multiscale Generative Design of Additive Manufactured Lattice Structure and Its Loading Capacity Prediction | Xiang Zhouyi, Liu Fuyuan, Chen Min\*, Zhang Shunqi |
| 10:05-10:30 | **Tea Break** | | |
| 10:30-10:50 | Yang Jin-Shui  (**Invited Speaker**, Harbin Engineering University) | Sound Absorption and Mechanical Properties of a Novel Carbon Fiber Composite Corrugated Resonator Metamaterial | Yang Jin-Shui\*, Liu Qi,  Tang Yuan-Yuan, Li Shuang, Wu Lin-Zhi |
| 10:50-11:10 | Cen Qianying  (**Invited Speaker**, Tongji University) | Simulation and Failure Analysis of Co-Curing Moulding Process for Airfoiled Foam Sandwich Structures | Cen Qianying, Liu Ling\* |
| 11:10-11:25 | Chu Ziqi  (Harbin Engineering University) | Fabrication and Mechanical Properties of Ultralight All-CFRP Sandwich Shells Based on Stretching Process | Chu Ziqi, Yu Guocai,  Wu Linzhi\* |
| 11:25-11:40 | Yuan Kaifeng  (Harbin Engineering University) | Buckling Failure Analysis of Ring-Stiffened Composite Hulls Considering Initial Imperfections under Hydrostatic Pressure | Yuan Kaifeng,  Xia Zhenmeng\*, Wu Linzhi\* |
| 12:00-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Morning (Room 5: Acacia, Level 10M)**  **Moderators: Liu Yan and Liu Yunya** | | | |
| **MS18: Multiscale/Multiphysics Modeling and Simulation of Advanced Materials and Structures**  **Organizers: Liu Yan**, Tsinghua University; **Zheng Yonggang**, Dalian University of Technology; **Yu Wenshan**, Xi'an Jiaotong University; **Yong Huadong**, Lanzhou University; **Yang Qingcheng**, Shanghai University  **MS25: Modeling and Simulation of Multi-Field Coupling Effects in Advanced Materials and Structures**  **Organizers: Liu Yunya**, Xiangtan University; **Lei Chihou**, University of Scranton; **Shan Dongliang**, Xiangtan University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:20 | Zheng Yonggang  (**Keynote Speaker**,Dalian University of Technology) | Recent Advances in the Phase Field Modeling of Fracture in Soft Materials Based on the Total Lagrangian Material Point Method | Zheng Yonggang\*, Zhang Zijian, Zhang Shun, Ye Hongfei, Zhang Hongwu, |
| 09:20-09:40 | Zhu Linli  (**Invited Speaker**, Zhejiang University) | Multi-Field Coupling Behaviors on Phonon and Thermal/Electrical Properties in Nanostructured Semiconductors | Zhu Linli\* |
| 09:40-10:00 | Liu Linjie  (**Invited Speaker**, Sun-Yat Sen University) | Emergent Mechanics of Topological Structures in Ferroic Materials | Liu Linjie\*, Qian He,  Chen Weijin |
| 10:00-10:20 | **Tea Break** | | |
| 10:20-10:40 | Liu Yunya  (**Invited Speaker**, Xiangtan University) | Coupling Between Electrical and Thermal Fields in Ferroelectrics Investigated by Phase-Field Simulations | Liu Yunya\* |
| 10:40-11:00 | Zhang Shun-Qi  (**Invited Speaker**, Shanghai University) | Multi-Physics Coupled Analysis of Functionally Graded Magneto-Electro-Elastic Structures | Zhang Shun-Qi\*, Chen Min |
| 11:00-11:20 | Shan Dongliang  (**Invited Speaker**, Xiangtan University) | Electrocaloric Effect Measurement and Calculation | Shan Dongliang\* |
| 11:20-11:35 | Zhang Hanbo  (Dalian University of Technology) | Ablation and Creep-Plastic Fracture Simulation of Reactor Pressure Vessels Based on Coupled Peridynamics Model | Zhang Hanbo, Li Chengxuan, Liu Zhenghai, Ye Hongfei, Zhang Hongwu, Zheng Yonggang\* |
| 11:35-11:50 | Pan Jiacong  (Tsinghua University) | Material Point Simulation of the Erosion Failure of Thermal Barrier Coatings | Pan Jiacong, Wang Shuai,  Liu Yan\* |
| 11:50-12:05 | Pan Kai  (Xiangtan University) | Analyzing the Electrostrain Responses in Functional Materials under The Scanning Probe Microscopy | Pan Kai |
| 12:05-12:20 | Wu Xianqian  (Chinese Academy of Sciences) | Scaling Law for Impact Resistance of Amorphous Alloys Connecting Atomistic Molecular Dynamics with Macroscale Experiments | Wu Xianqian\*, Huang Chenguang, William A. Goddard III |
| 12:20-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Morning (Room 6: Lotus, Level 10)**  **Moderator: Hao Peng** | | | |
| **MS19: Reliability Analysis Theory and Optimization Methods**  **Organizers: Hao Peng**, Dalian University of Technology; **Liu Jie**, Hunan University; **Wang Lei**, Beihang University; **Meng Zeng**, Hefei University of Technology; **Zhang Dequan**, Hebei University of Technology | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:20 | Feng Shaojun  (**Keynote Speaker,** Dalian University of Technology) | Correlation-Based Likelihood-Free Calibration for Realistic Inversion of Model Uncertainty Parameters | Feng Shaojun\*, Liu Hao,  Hao Peng |
| 09:20-09:35 | Ge Changyuan  (Dalian University of Technology) | An Improved Inverse Power Law Model for Accelerated Fatigue Life Prediction of 6061-T6 and AZ31B-F | Ge Changyuan, Zhou Caihua\*, Xiao Shijian, Wang Bo,  Ren Mingfa |
| 09:35-09:50 | Sun Yu  (Dalian University of Technology) | Optimized Design of Non-Uniform Curved Grid-Stiffened Shell Incorporating Diverse Stiffener Configurations | Sun Yu\* |
| 09:50-10:05 | Yang Hao  (Dalian University of Technology, Optimization and CAE Software for Industrial Equipment) | A Novel Extended Ellipsoidal Convex Model for Non-Probabilistic Uncertainty Quantification with Limited Input Data | Yang Hao, Hao Peng\* |
| 10:05-10:30 | **Tea Break** | | |
| 10:30-10:45 | Tian Kuo  (**Invited Speaker**, Dalian University of Technology) | Digital Twin Method for High-Accuracy Structural Strength Assessment | Tian Kuo\* |
| 10:45-11:00 | Chen Faxin  (Dalian University of Technology, Optimization and CAE Software for Industrial Equipment) | A Refined Design Method of Structural Safety Margin Based on Reliability Optimization Theory | Chen Faxin, Hao Peng\* |
| 11:00-11:15 | Ni Bingyu  (**Invited Speaker**, Hunan University) | The First Order Time-Variant Reliability Expansion (FOTRE) Method | Ni Bingyu\*, Chen Weiwei, Jiang Chao |
| 11:15-11:30 | Chen Guohai  (Dalian University of Technology) | Direct Probability Integral Method for Uncertainty Propagation of High-Dimensional Stochastic System | Chen Guohai\*, Yang Dixiong |
| 11:30-11:45 | Gao Chuanwei  (Dalian University of Technology) | An Effective Impact Loads Simplified Method (ILSM) for Topology Optimization of Impact-Resistant Design | Gao Chuanwei, Zhou Caihua\*, Xu Shengli, Wang Bo,  Zhou Yan |
| 12:00-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Morning (Room 7: Frangipani, Level 10)**  **Moderators: Guo Hulun and Lu Guoyang** | | | |
| **MS12: Nonlinear Vibrations of Composite Materials and Structures under Multi-Field**  **Organizers: Guo Hulun**, Tianjin University; **Wang Jianfei**, Beijing University of Technology; **Ke Liaoliang**, Tianjin University  **MS13: Advancements in Transportation Infrastructure: Durability, Sustainability, and Resilience**  **Organizers: Lu Guoyang**, City University of Hong Kong, Kowloon, Hong Kong | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 09:00-09:15 | Guo Hulun  (Tianjin University) | Vibration of a Rotating Pre-Twisted Nanohybrid Material Blade with Partial Cracks | Guo Hulun\*, Yuan Jinjin, Hou Lei |
| 09:15-09:30 | Tang Ye  (Northwestern Polytechnical University) | Novel Self-Suppression in Wide-Frequency Vibration Regions of Periodic Acoustic Black Hole Pipes Conveying Fluid | Tang Ye\*, Yang Tianzhi, Ding Qian |
| 09:30-09:45 | Zhu Guanghong  (Xi’an University of Science and Technology) | A Nonlinear Fractional-order Model on the Dynamic Mechanical Behaviour of Magnetic Sensitive Rubbers | Zhu Guanghong\*,  Lei Shuai, Stephen Daley |
| 09:45-10:00 | Ren Shuangxing  (Harbin Institute of Technology) | A Novel Efficient Formulation for Flutter Analysis of Rotating Composite Blades Based on Reference Nodal Coordinate Formulation | Ren Shuangxing, Hou Lei\* |
| 10:00-10:30 | **Tea Break** | | |
| 10:30-10:45 | Lu Guoyang  (City University of Hong Kong) | Long-life Low-carbon Asphalt Pavement towards Tomorrow | Lu Guoyang\* |
| 10:45-11:00 | Liu Gang  (City University of Hong Kong) | Advance Future Sustainable, Resilient and Smart Road Pavement System Through Industrialized Manufacturing Technologies | Liu Gang, Lu Guoyang\*, Shiu Tong Thomas NG,  Qian Zhendong |
| 11:00-11:15 | Wang Shasha  (City University of Hong Kong) | CFD-IEnKF Model for Effective Prediction of Hydrogen Sulfide Leakage Source and Dispersion in Enclosed Workplaces | Shasha Wang, Shiu Tong Thomas NG \* |
| 11:15-11:30 | Yao Xiao  (City University of Hong Kong) | Environmental-Friendly Underwater 3D Concrete Printing Technologies | Yao Xiao, Liew Kim Meow\* |
| 11:30-11:45 | Yin Binbin  (The Hong Kong Polytechnic University) | Multiscale Modeling of Fracture Behaviors in Fiber-Reinforced Composites | Yin Binbin\* |
| 12:00-14:00 | **Lunch** | | |

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| **Day 3 (09 July) Afternoon (Room 2:** **Rafflesia, Level 10M)**  **Moderators: Zhang Yang and Yin Binbin** | | | |
| **MS06: Modeling via Experimental and Numerical Techniques**  **Organizers: Liew Kim Meow**, City University of Hong Kong, Kowloon, Hong Kong; **Yin Binbin**, The Hong Kong Polytechnic University, Hong Kong; **Sun Weikang**, City University of Hong Kong, Kowloon, Hong Kong | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:15 | Chong Run  (City University of Hong Kong) | Multiscale Meshfree Modelling of Fiber Reinforced Limestone Calcined Clay Cement Composite at Elevated Temperatures | Chong Run,  Liew Kim Meow\* |
| 14:15-14:30 | Xu Zhenbo  (City University of Hong Kong) | Bubble Motion with Finite Free Boundaries | Xu Zhenbo, Zhang Lu-Wen, Liew Kim Meow\* |
| 14:30-14:45 | Chu Tianyang  (City University of Hong Kong) | Effect of Structural Characteristics on Charring Shrinkage and Cracking of Densified Wood under Radiative Heatings | Chu Tianyang,  Liew Kim Meow\* |
| 14:45-15:00 | Duan Anqi  (City University of Hong Kong) | Enhancing Tricalcium Silicate Hydration with Graphene Oxide: An Atomic Investigation | Duan Anqi, Liew Kim Meow\* |
| 15:00-15:30 | **Tea Break** | | |

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| **Day 3 (09 July) Afternoon (Room 3: Peony, Level 10M)**  **Moderator: Wang Jinbao**, | | | |
| **MS22: Application of Computational Mechanics in Engineering**  **Organizers:**  **Wang Jinbao**, Zhejiang Ocean University; **Zheng Yonggang**, Dalian University of Technology; **Xiang Ping**, Central South University; **Zhu Ping**, Hunan University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:15 | Wang Jinbao  (Zhejiang Ocean University) | One-Dimensional Rheological Consolidation Analysis of Saturated Clay Using Fractional Derivative Hansbo Flow and Merchant Models | Wang Jinbao\*, Chen Yi,  Xu Nantao |
| 14:15-14:30 | Shen Yongxing  (Shanghai Jiao Tong University) | An Acceleration Scheme for the Fatigue Fracture Simulation with Phase Field Model | Shen Yongxing\*, Yang Shuo |
| 14:30-14:45 | Zhang Shun  (Dalian University of Technology) | Adaptive Phase-Field Total Lagrangian Material Point Method for Dynamic Fracture of Hyperelastic Materials | Zhang Shun, Zhang Zijian, Sun Wei, Ye Hongfei, Zhang Hongwu, Zheng Yonggang\* |
| 14:45-15:00 | Wang Xiangyang  (Ludong University) | A New Multiscale Discrete-Continuum Method for Nonlinear Mechanical Behaviors of Micro/Nano-Scale Structures | Wang Xiangyang\*,  Qi Huibo, Sun Zhongyu, Yang Jingwen, Li Dong |
| 15:00-15:15 | Xiang Ping  (Central South University) | A New Train-Bridge Coupled System Based on Meshless Method | Shao Zhanjun, Zhang Peng, Xie Xiaonan, Xiang Ping\* |
| 15:15-15:30 | **Tea Break** | | |

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| **Day 3 (09 July) Afternoon (Room 4: Lilies, Level 10M)**  **Moderator: Yan Jianwei** | | | |
| **MS23: Vibration Characteristic of Periodic-Structure Materials**  **Organizers: Yan Jianwei**, East China Jiaotong University; **Lim Chee Wah**, City University of Hong Kong | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:15 | Yan Jianwei  (East China Jiaotong University) | A General Displacement Field Function Method for Predicting Free Vibration of Periodic Punched Gpls/Al Composite | Yan Jianwei, Lim Chee Wah\* |
| 14:15-14:30 | Jiang Sicen  (East China Jiaotong University) | Nonlinear Bending of Functionally Graded Graphene-Platelet Reinforced Porous Composite Beams | Jiang Sicen, Yan Jianwei\* |
| 14:30-14:45 | Zoe Yaw  (The Hong Kong Polytechnic University, The Hong Kong Polytechnic University Shenzhen Research Institute) | Anomalous Wavefront Control by Metasurface Based on Active Approach | Zoe Yawa\*, Zhou Weijian, S.K. Lai, Lim Chee Wah |
| 14:45-15:00 | Wang Guifeng  (City University of Hong Kong) | Three-Dimensional Acoustic Metamaterials with Topological States of Different Order and Multidirectional Waveguiding | Wang Guifeng\*, Chen Zhenyu, Lim Chee Wah |
| 15:00-15:30 | **Tea Break** | | |

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| **Day 3 (09 July) Afternoon: (Room 5, Acacia, Level 10M)**  **Moderator: Peng Lin-Xin** | | | |
| **MS20: Innovation And Applications of Deep Learning in Materials Modelling**  **Organizers: Peng Lin-Xin**, Guangxi University; **Fu Zhuojia**, Hohai University | | | |
| **Time** | **Presenter** | **Presentation Title** | **Author(s)** |
| 14:00-14:15 | Huang Zhong-Min  (Guangxi University) | Two-Network Strategy Physics-Informed Neural Network Approach for Bending Analysis of Thin Plates with Variable Stiﬀness | Zhong-Min Huang,  Peng Lin-Xin\* |
| 14:15-14:30 | Huang Zichen  (City University of Hong Kong) | Bending and Failure Mechanism of Layered Crystal Materials with Noncovalent Interface | Huang Zichen,  Liew Kim Meow\* |
| 14:30-14:45 | Duan Yu-Hang  (City University of Hong Kong) | Gradient-Enhanced Constitutive Modeling of Monoclinic 3d Printed Concrete | Duan Yu-Hang,  Liew Kim Meow\* |
| 14:45-15:00 | Liu Xingcheng  (City University of Hong Kong) | Asymptotic Homogenization of Phase Field Fracture of Quasi-Periodic Structure | Liu Xingcheng,  Liew Kim Meow\* |
| 15:00-15:15 | **Tea Break** | | |

**Technical Visit**

To ensure an optimal experience for all participants, registration for the technical visits to Universiti Malaya (10:00-12:00, 11 July 2024) and Universiti Tunku Abdul Rahman (10:00-12:00, 12 July 2024) will be conducted on an individual basis due to limited availability.

Delegates interested in these visits are required to register through the link provided below or by scanning the QR code.

<https://www.wjx.cn/vm/mToSxfC.aspx>

QR 代码

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建筑与房屋的城市空拍图

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**The 6th International Conference on Modeling in Mechanics and Materials**

**7-13 July 2024**

**Kuala Lumpur, Malaysia**