ICCS28

The 28th International Conference
on Composite Structures

Program Book

31 August - 3 September 2025
Yinchuan, China

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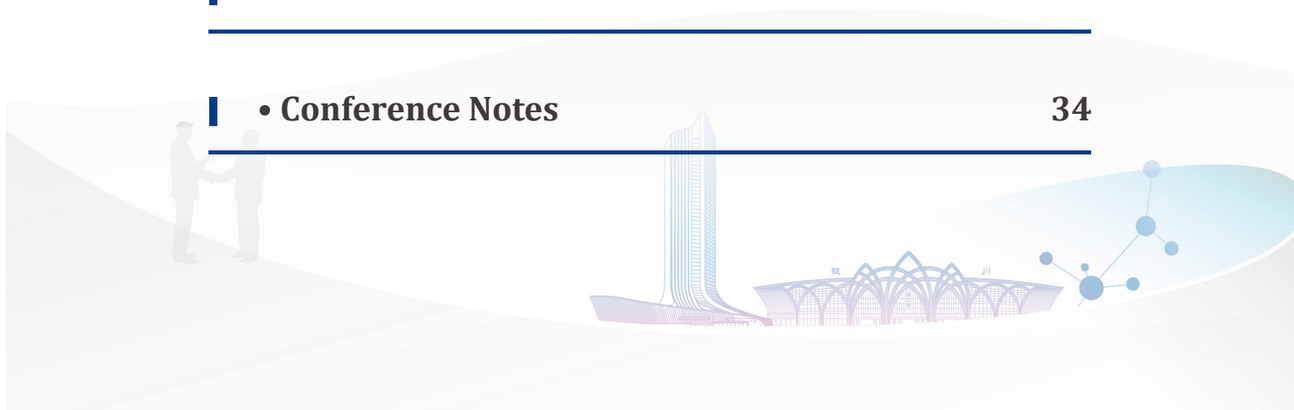
Contents



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Plenary Speakers

(Listed in alphabetical order by surname)

Young-Bin Park, UNIST, Korea

Aurora Angela Pisano, University Mediterranea of Reggio Calabria, Italy

Olivier Polit, University of Paris, France

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Yewang Su, Chinese Academy of Sciences, China

Abdullah Heydaroglu Sofiyev, Suleyman Demirel University, Turkey

Filipe Teixeira-Dias, The University of Edinburgh, UK

Volnei Tita, University of São Paulo, Brazil

Francesco Tornabene, University of Bologna, Italy

Lluis Torres, University of Girona, Spain

Konstantinos Tserpes, University of Patras, Greece

Patrizia Trovalusci, University of Rome La Sapienza, Italy

Till Vallée, Fraunhofer IFAM, Germany

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Yufeng Xing, Beihang University, China

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Yuqiu Yang (Amy), Donghua University, China

Lei Yang, Dalian University of Technology, China

Xuefeng Yao, Tsinghua University, China

Jianqiao Ye, Lancaster University, UK

Soon Ho Yoon, Korea Institute of Materials Science, Korea

Hana Yu, University of Bristol, UK

Woong-Ryeol Yu, Seoul National University, Korea

Junjie Zeng, University of South Australia, Australia

Tao Zeng, Harbin University of Science and Technology, China

Chao Zhang, Northwestern Polytechnical University, China

Luwen Zhang, Shanghai Jiao Tong University, China

Qingjie Zhang, Wuhan University of Technology, China

Lei Zu, Hefei University of Technology, China

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Salim Belouettar

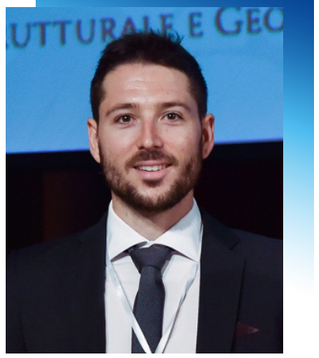
Dr. Salim Belouettar is Principal Scientist at the Luxembourg Institute of Science and Technology (LIST), with over 30 years of international experience in digitalisation for engineering, data-driven design and simulation, and computational modelling of advanced materials and manufacturing processes. He has authored over 210 SCOPUS-indexed publications, with 700+ citations per year and an H-index of 59 (Google Scholar). As Principal Investigator, he has secured more than €50M in competitive funding and supervised 27 PhD candidates and 24 postdoctoral researchers. He has led major EU-funded projects (FP6, FP7, H2020, Horizon Europe, M-era.Net) and is a Founding Member of the European Materials Modelling Council (EMMC). Ranked among the top 3% of scientists worldwide (AD Scientific Index 2025), he is a recipient of the IAAM Scientist Medal and is listed in Stanford University's Top 2% Scientists. His current research focuses on machine learning for engineering, virtual design of materials and manufacturing, and digitalisation for sustainability in industrial systems.

Erasmo Carrera

Dr. Erasmo Carrera is Professor of Aeronautics and Astronautics at Politecnico di Torino. He acts as President of the Italian Association of Aeronautics and Astronautics, A.I.D.A.A, member of Accademia delle Scienze di Torino and of Academie de l'Air et de l'Espace. He has been visiting professor at the University of Stuttgart, Virginia Tech, Royal Melbourne Institute of Technology, Tambov University, Supmeca and Ensam, PMU. Dr. Carrera has been responsible for various research contracts granted by public and private national and international institutions, including the European Community, European Space Agency, Thales Alenia Space and Embraer. He is founder and Editor-in-Chief of Advances in Aircraft and Spacecraft Science, Editor-in-Chief of Mechanics of Advanced Materials Structures and Section Editor of Journal and Sound and Vibration.

He has introduced the Unified Formulation, or CUF (Carrera Unified Formulation), as a tool to establish a new framework to develop theories of beams, plates and shells for metallic and composite multilayered structures. CUF has been applied to meshless, finite element methods to classical and mixed variational framework as well as to linear and nonlinear problems. In particular CUF has originated to so called NDK-FE, Node Dependent Kinematics version of Finite Elements. He has been author and co-author of about 800 papers on the above topics. Carrera has been recipient of various 'best paper award' and of the 'JN Reddy Medal'. Professor Carrera has been Highly Cited Researchers (Top 100 Scientist) by Thompson Reuters in the two Sections: Engineering and Materials. He has been confirmed HiCI in 2015 in the Section Engineering. The only aerospace Engineering worldwide. Due to his scientific outcoming professor Carrera has been awarded by the President of Italian Republic, as 'Honoray Commendator'. He has been appointed Loc-Chair of IAC 2024 (Milan) and ICAS 2024 (Florence).

Nicholas Fantuzzi



Dr. Nicholas Fantuzzi is an associate professor at the University of Bologna (with National Academic Qualification as Full Professor since Nov 2024). He obtained PhD degree in Structural Engineering and Hydraulics at the University of Bologna in 2013. His research interests focus on mechanics of solids and structures, fracture mechanics, composite materials and composite structures, computational mechanics and numerical methods. Due to professor Fantuzzi's scientific achievements, his awards include: Engineering and Technology in Italy Leader Award 2025 - Research.com Ranking (57th Italy, 2162th World); Best Rising Stars of Science 2024 - Research.com Ranking (7th Italy, 304th World). He is also the recipient of 3 international awards: "ICCS17 Ian Marshall's Award for Best Student Paper" in 2013; "Best Student Paper Award – MIMS16" in 2016; "ICCM Young Investigator Award" in 2018. He participated in the organization or co-chaired 20 International Conferences on composite structures and mechanics of solids and structures. He was co-coordinator of 17 symposia in International Conferences. He was the invited Keynote speakers at 14 international conferences. His editorial activities include: Co-Editor in Chief of "Composite Structures", Elsevier; Associate Editor of "International Journal of Structural Integrity", Emerald; Associate Editor of "Alexandria Engineering Journal", Elsevier; Section Editor-in-Chief of "Mathematical and Computational Applications", MDPI Publishing. He is the supervisor/co-supervisor of 11 PhD students, 54 MSc students and Member of 12 PhD Defenses. Professor Fantuzzi is the author of more than 200 international peer reviewed journal papers, 10 books (in Italian and English), 4 book chapters and more than 150 abstracts in national and international conferences.

Xu Guo

Professor Xu Guo, a member of the Chinese Academy of Sciences, is from the Dalian University of Technology, P.R. China. He once served as the Vice President of the Chinese Society of Theoretical and Applied Mechanics and the President of the Chinese Association of Computational Mechanics. Currently, he is the Vice President of International Society for Structural and Multidisciplinary Optimization, and one of the editorial board members of Computer Methods in Applied Mechanics and Engineering and International Journal for Numerical Methods in Engineering.

Xu Guo has been working in the field of computational mechanics, solid mechanics and structural optimization for more than 25 years. He has published more than 270 SCI papers in renowned scientific journals including JMPS, CMAME, IINME, IISS, PRL, Nature Material and Science. He is the recipient of numerous academic awards and honors, including the ASSMO Award, ICACM Award, etc. He is also the Plenary/Semi-Plenary speaker in numerous prestigious international conferences/workshops/symposiums, including the 2016 World Congress on Computational Mechanics (WCCM).

Ning Hu

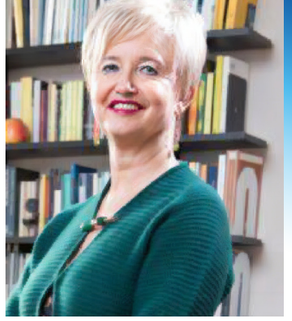
Dr. Hu finished his education from undergraduate to PhD in Chongqing University, China from 1981-1991. After graduation, he has been working at Nanjing University of Aeronautics and Astronautics (China), Tohoku University (Japan), Tsinghua University (China), The Johns Hopkins University (USA), Chiba University (Japan), Hunan University (China) and Chongqing University (China) as Post-doctoral researcher, Assistant Professor, Associate Professor and Full Professor. Before his back to China in 2013, he was a Full Professor, the Chairman of Department of Mechanical Engineering, and the Head of Division of Artificial System Science, Chiba University (Japan). From the end of 2013, he founded College of Aerospace Engineering in Chongqing University (China) and worked as the first Dean. From April, 2019, he started his work as a vice president of Hebei University of Technology (China) until December, 2024. Now, he is a Full Professor of School of Mechanical Engineering, Hebei University of Technology.

His main research interests include: solids mechanics, composites materials, composites structures, computational materials science, on-line structural health monitoring and off-line non-destructive evaluation techniques, sensing/energy harvesting techniques, etc. To date, in the above fields, he has published 3 books in English, 2 books in Chinese, and generated around 700 peer-reviewed journal articles in Chinese, English and Japanese. These articles have been cited over 27000 times with H-Index=78. He has obtained over 40 Japanese and Chinese patents. He is now working as Associate Editor and an Editorial Board Member of 13 academic journals including 11 international academic journals. He has also received some important awards, e.g., “Outstanding Young Scholar from NSF, China, 2007”, “National Distinguished Experts (Thousand Talents Plan), China, 2013”, etc. He was also selected as one of “The Most Highly Cited Chinese Researcher” from 2014 to 2025 in the field of mechanics of materials and mechanical engineering (by Elsevier). He was also continuously selected as Top 100,000 Scientists in the World, World’s Top 2% Scientists from 2020 to 2025 in the field of material science and mechanical engineering (by Stanford and Elsevier) and World’s Top 0.05% Highly Ranked Scholars in 2024 in the field of mechanical engineering (by ScholarGPS).

Shuxin Li

Dr. Shuxin Li, FIMechE, CEng
Emeritus Prof. & Chief Scientist, Wuhan University of Technology. Fellow of Institution of Mechanical Engineers (FIMechE), Former Engineering Executive and Technical Authority at a leading international aeronautics company, Senior Visiting Research Fellow of University of Bristol. Over 35 years research and industrial experience in advanced engineering materials and structures. Scientific research focuses on basic science and technology combined with applications in aviation, automobile and transportation, energy, and ocean engineering. Extensive expertise on integration of material/ manufacturing/ design/ evaluation multidisciplinary research on composite structures and production of composite components. Research outputs have become industrial material specifications, manufacturing guidelines, structural design principles, certification procedures, in-service safety evaluation standards in the related engineering fields. Over 100 high-level scientific research papers published on international top journals in composites fields.

Patrizia Trovalusci



Patrizia Trovalusci, PhD, Full Professor of Solids and Structural Mechanics. Director of the PhD Program in Structural and Geotechnical Engineering and of the School of Civil Engineering and Architecture at Sapienza University of Rome. Director of the Sapienza research group on Multiscale Modelling of Complex Materials. Rector Delegate for International doctorates (2020-22). Author of more than 200 articles in International Journals, Volumes, Conference Proceedings and more; Organizer of several International Conferences, International Advanced Courses on Solid Mechanics and Structures; Guest editor of many Special Issues in international journals. Associate Editor and/or Member of Editorial Boards of International Journals; Member of International Scientific Societies, international Evaluations Committees for researchers recruitments; Remote Referee of international commitments for funding assignment. Principal Investigator of competitive research projects. President of the Commission of the National Scientific Qualification Commission Full/Associate Professors CEAR-06/A (formerly SC08/B2). Supervisors of several PhD Students, Post Docs, Assistant Professors.

Jianxiang Wang

Dr 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.

Jie Yang

Dr. Yang is the Distinguished Professor in the School of Engineering, RMIT University, Australia. His main research interests include advanced composite structures, mechanical metamaterials, structural stability and dynamics, CNT/graphene reinforced nanocomposites, smart structures and control. He has authored 3 books and over 500 publications including 370 journal papers which have so far attracted over 30200 Google Scholar citations with h-index 94 and more than 24300 SCI citations with h-index 85. He is the Highly Cited Researcher (Cross Field) in 2019, 2020, 2021, 2022, and 2023 by Clarivate Analytics and is named by Australian Research Magazine as the Global Field Leader in Mechanical Engineering in 2020, Australia's Research Field Leader in Mechanical Engineering in 2019, 2020, 2021, 2022, 2023, in Structural Engineering in 2021 as well as in Acoustics and Sound in 2023. Prof. Yang is currently the Lead Editor-in-Chief of Engineering Structures and serves the editorial boards of many other international journals.

Time	Conference Schedule	Location
31 August		
09:00-20:00	Registration	1F - Lobby of Sheraton Hotel
18:00-21:00	Dinner	1F - Western Restaurant
1 September		
08:30-09:00	Opening Ceremony	2F - Helan Mountain Hall
09:00-10:20	Plenary Lectures	
10:20-10:40	Coffee Break	
10:40-12:00	Plenary Lectures	
12:00-14:00	Lunch	1F - Lobby Bar+Western Restaurant 2F - Xixia Hall
14:00-15:20	Plenary Lectures	2F - Helan Mountain Hall
15:20-15:40	Coffee Break	
15:40-17:40	Plenary Lectures	
18:30-21:00	Banquet	
2 September		
08:30-10:00	Parallel Sessions	2F - Helan Mountain Hall A/C 2F - Meeting Room 1-5
10:00-10:20	Coffee Break	
10:00-12:00	Parallel Sessions	
12:00-14:00	Lunch	1F - Lobby Bar+Western Restaurant 2F - Xixia Hall
14:00-15:40	Parallel Sessions	2F - Helan Mountain Hall A/C 2F - Meeting Room 1-5
15:40-16:10	Coffee Break	
16:10-18:30	Parallel Sessions	
18:30-22:00	Western Buffet	1F - Lobby Bar+Western Restaurant
3 September		
08:30-10:00	Parallel Sessions	2F - Helan Mountain Hall A/C 2F - Meeting Room 1-6
10:00-10:20	Coffee Break	
10:00-12:00	Parallel Sessions	
12:00-14:00	Lunch	1F - Western Restaurant
14:00-15:40	Parallel Sessions	2F - Helan Mountain Hall A/C 2F - Meeting Room 1-5
15:40-16:10	Coffee Break	
16:10-18:30	Parallel Sessions	
18:00-21:00	Dinner	1F - Western Restaurant

Monday, 1 September

2F – Helan Mountain Hall

Time	Title	Speaker	Chair
08:30-09:00	OPENING CEREMONY		
09:00-09:40	Problem Independent Machine Learning (PIML) - based large scale structural analysis and optimization	Xu Guo Dalian University of Technology	Bin Liu Tsinghua University
09:40-10:20	The X-DOF approach to laminated composite structures	Erasmo Carrera Politecnico di Torino	Holm Altenbach Otto-von-Guericke-Universität Magdeburg
10:20-10:40	Coffee Break		
10:40-11:20	Topological dynamics of discrete and continuum composite lattice structures	Jianxiang Wang Peking University	Licheng Guo Harbin Institute of Technology
11:20-12:00	Multiscale modelling of composite materials through implicitly non-local continuum theories	Patrizia Trovalusci Sapienza University of Rome	Shaoyun Fu Chongqing University
12:00-14:00	Lunch		
14:00-14:40	Phase transition enabled bandgap tunability and wave guide in graphene reinforced phononic crystals	Jie Yang RMIT University	Xuefeng Yao Tsinghua University
14:40-15:20	Integrated manufacturing to application consecutive structural integrity assessment: toward data driven intelligent composite structures	Shuxin Li Wuhan University of Technology	Luwen Zhang Shanghai Jiao Tong University
15:20-15:40	Coffee Break		
15:40-16:20	Strong, tough and multifunctional polyvinyl alcohol hydrogel composites	Ning Hu Hebei University of Technology	Shujuan Hou Hunan University
16:20-17:00	From open innovation to digital product passports: building the future of sustainable value chains	Salim Belouettar Luxembourg Institute of Science and Technology	Michele Bacciocchi University of San Marino
17:00-17:40	Optimized anisotropic 3D-printed composites for patient-specific GBR meshes via multi-constraint topology optimization	Nicholas Fantuzzi University of Bologna	Seongsu Kim KAIST
18:30-21:00	Banquet		

Tuesday, 2 September

Helan Mountain Hall A

Session 7. Advanced materials and structures
Chairs: Liang Xia, Liang Meng, Mi Xiao, Liang Gao, Hui Liu
Time: 8:30-17:50, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1246	**[Keynote Lecture]** Coupled stress-diffusion behavior of fiber/hydrogel composites: a phenomenological theory and numerical simulation	Qingsheng Yang
09:00-09:20	1139	Static and dynamic analysis of opto-electro-thermo-elastic perovskite structures in multi-physics fields	Shaoyu Zhao
09:20-09:40	1149	Compressive and impact characteristics of felt materials made of by-products of hemp fibers	Hui Yun Hwang
09:40-10:00	1353	Functional design and regulating method of reconfigurable electromagnetic absorbing composite structure	Zhong Zhang
10:00-10:20		Coffee Break	
10:20-10:40	1361	Elastic local buckling behaviour of ultra-long wind turbine blades bio-inspired by beetle elytron	Xiaoming Zhang
10:40-11:00	1184	Topology optimization of load-bearable phononic crystals	Wei-Zhi Luo
11:00-11:20	1399	Influence of void defects on the cryogenic mechanical properties of CFRP composites	Yuanchen Li
11:20-11:40	1238	Development of Advanced Membranes for Enhanced Performance in Vanadium Redox Flow Batteries	Amanpreet Kaur
11:40-12:00	1145	Advanced Aramid Core Honeycomb Sandwich Structures with Carbon Nanotube Spray Coating for Stress Monitoring and Water Ingress Detection	Yiheng Song
12:00-12:20	1147	Simulation of biodegradable bone plates under the simulated human body environment using PBS solution	Jiale Che
		Lunch	
14:00-14:30	1336	**[Keynote Lecture]** Optimization of Integrated Thermal Protection System with Parameterized Lattice Core	Jie Hou
14:30-14:50	1148	Experimental study on the mechanical degradation of the hybrid bone plate under simulated human body environment condition	Ho Seok Lee
14:50-15:10	1183	Damage-tolerant mechanical metamaterials designed by fail-safe topology optimization	Yukun Zheng
15:10-15:30	1191	Thermal-mechanical design of hybrid solid-lattice structures using multi-material topology optimization	Yedan Li
15:30-15:50	1239	MXene/SnO_2-Modified Carbon Felt Electrode for Enhanced Performance in Vanadium Redox Flow Batteries	Gurpreet Singh
15:50-16:10		Coffee Break	
16:10-16:30	1261	A new cross-honeycomb structure for elastic and acoustic wave attenuation	Xiaofeng Li
16:30-16:50	1317	Interfacial Heat Transfer Mechanisms of Nanomaterial-Reinforced Cement Composites	Yi Yang
16:50-17:10	1389	A Study on Pretreatment Processes for Stabilizing the Physical Properties of Natural Fibers	Si Wan Nam
17:10-17:30	1442	Data-Driven Diffusion Generative Design for Metamaterials	Haoyu Wang
17:30-17:50	1257	One-Step Synthesis of Graphene-Based Hybrid Structures with Surface Microspheres with a Template-Free Method	Yue Zhao

Helan Mountain Hall C

Session 9 & Session 11. Design and optimization of composite material
Chairs: Hongling Ye, Xia Liu, Yongcun Zhang, Zeng Meng
Time: 8:30-18:10, Tuesday, 2 September

Time	ID	Title	Speaker
8:30-9:00	1438	**[Keynote Lecture]** Plant-inspired Crashworthiness Design for Composite Materials	Shujuan Hou
9:00-9:20	1338	Least failure energy density: A comprehensive strength index to evaluate and optimize heterogeneous periodic structures	Bin Liu
9:20-9:40	1263	Fatigue Topology Optimization Method for Continuous Fiber Reinforced Composite Structure Based on Independent Continuous Mapping Method	Hongling Ye
9:40-10:00	1153	Thermomechanical Behaviour of Highly Thermal Conductive Hybrid Carbon Fibre Reinforced PPS/PES Composites	Kaibao Wang
10:00-10:20		Coffee Break	
10:20-10:40	1240	Investigation on the mechanisms of dry yarn fabric preforming of fabric-reinforced composites and multi-objective process optimization	Hongda Chen
10:40-11:00	1265	Strength optimization of variable stiffness shell and potential application to composite sandwich structures	Zhi Hong
11:00-11:20	1433	An improved DPIM for stochastic dynamic analysis of composite material cylinders	Zeng Meng
11:20-11:40	1451	Multiscale computation and structural design optimization of piezoelectric composites	Zhelong He
11:40-12:00	1155	Interfacial strengthening of CF/PEEK composites by a water-based PAAs & MMT sizing agent	Yang Liu
12:00-12:20	1192	In-plane compression behaviors of cuttlefish bone-inspired and cedarwood-inspired composite sandwich structures	Xin Zhou
		Lunch	
14:00-14:30	1416	**[Keynote Lecture]** Concurrent multi-scale variable stiffness design optimization of fiber-reinforced composite laminates considering stress-related constraints	Zunyi Duan
14:30-14:50	1458	Multi-objective optimization of sectionalized dome reinforcement for filament-wound composite cases	Xing Mou
14:50-15:10	1285	Multi-Scale Topology Optimization Method for Thermoelastic Structure for Integrated Thermal Insulation and Load-Bearing	Chuangwei Li
15:10-15:30	1276	Topology optimization of shell-infill structures with non-uniform coating thickness	Junfeng Gao
15:30-15:50	1146	Optimization of Truss Meta-Structure for Structural Performance and Switchable Vibration Isolation	Samuel Kim
15:50-16:10		Coffee Break	
16:10-16:30	1281	High-Fidelity Artificial Neural Network–Based Sequential Optimization of Buckling Performance in Carbon Fiber Composites	Xin Wang
16:30-16:50	1396	A novel topology optimization method for curved surface composite structures	Yubo Hou
16:50-17:10	1398	Manufacturability-aware topology optimization of multi-material compliant mechanisms considering maximum stress constraints	Xuefei Yang
17:10-17:30	1173	LSTM-based prediction of the cooling performance of daytime radiative coatings	Kun Ma
17:30-17:50	1422	Bioinspired CFRP composites with improved impact resistance through gradient-sinusoidal coupling design	Zhipeng Zhou
17:50-18:10	1430	Transient Dynamic Robust Topology Optimization under Time-Variant Uncertainties	Zixuan Tian

Meeting Room 1

Session 8. Failure assessment of composite structures under extreme environments
Chairs: Shengchuan Wu, Zhengmao Yang, Zhaoliang Qu
Time: 8:30-15:40, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1395	**[Keynote Lecture]** Digital Characterization Methods for Internal Yarn Morphology and Mechanical Properties for Profiled Structures of Woven Composites	Jingran Ge
09:00-09:20	1348	Structural integrity issues of composite materials and structures in future transportation equipment	Shengchuan Wu
09:20-09:40	1331	Matrix cracking in fiber reinforced ceramic matrix composites	Yong Ma
09:40-10:00	1415	Characterization of the temperature dependence of the mechanical properties of the laminated ultra-high temperature ceramic matrix composites	Ruzhuan Wang
10:00-10:20	Coffee Break		
10:20-10:50	1349	**[Keynote Lecture]** Coupling FE Simulations and Deep Learning for Surrogate Modeling of Homogenized Creep in CERCER Fuel Composites	Yunmei Zhao
10:50-11:10	1452	Quantification of thermal residual stress and its effects on the mechanical properties and damage evolution in 3D C/SiC composites	Jin Zhou
11:10-11:30	1352	Study of the Damage Evolution and Failure Mechanism for Ceramic Matrix Composites at Ultra-High Temperatures Based on In-Situ Computed Tomography	Rongqi Zhu
11:30-11:50	1333	In situ X-ray imaging and theoretical modeling of low-temperature tensile strength transition in C/SiC composites	Ying Lin
11:50-12:10	1407	Prediction and Optimization of Conjugate Heat Transfer for Actively Cooled Sandwich Structures in Extreme Thermal Environments	Xingyu Chen
Lunch			
14:00-14:20	1409	Homogenization-Based Multiscale Self-Consistent Clustering Analysis for Ablation of SiFPRCs	Shuo Cao
14:20-14:40	1414	Assessment of Stress and Deformation Evolution in Ceramic Matrix Composites under Extreme Manufacturing Environments	Xiaoyi Guan
14:40-15:00	1418	Research on the uniformity of bending stiffness of carbon fiber reinforced plastic laminates and the correlation coefficient of mirror surface precision of composite materials	Yingfeng Shao
15:00-15:20	1321	Influence of Load Level and High Temperature on the Mechanical Properties and Microstructure of Desert Sand Concrete	Renze Yang
15:20-15:40	1455	Non-Convex Group Sparse Regularization and Optimal Convolution Path Sensor Placement for Impact Monitoring of Composite Structures	Junjiang Liu
15:40-16:10	Coffee Break		

Session 3. Dynamics of composite structures
Chairs: Liu Liu, Guannan Wang
Time: 16:10-17:50, Tuesday, 2 September

Time	ID	Title	Speaker
16:10-16:30	1297	Multiscale dynamic response of thick-section sandwich structures in thermal environments	Liu Liu
16:30-16:50	1390	Evaluation of Life-Cycle State of Health for Solid-State Lithium Batteries using a Hybrid LSTM Model	Guannan Wang
16:50-17:10	1181	Acoustic responses of filament wound multi-segment shells of revolution	Qingyang Huang
17:10-17:30	1177	Damage behavior of tension-preloaded composite laminates under high-velocity impact	Xuan Gao
17:30-17:50	1363	Theoretical study on low-frequency vibration reduction of a resonant composite frame structure	Fang Yang

Meeting Room 2

Session 14. Flexible composite materials and structures
Chairs: Yuhang Li, Zhaoqian Xie, Yinji Ma, Siyu Chen
Time: 8:30-15:40, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1420	**[Keynote Lecture]** Fracture mechanics of heterogeneous soft materials	Zheng Jia
09:00-09:20	1175	Analysis of Folding Behaviour for Hinged Composite Booms for Spacecraft Structures	Alfred Taylor
09:20-09:40	1203	Mechanism Analysis of Thermal Pain and Mechanical Matching in Stretchable Bio-Integrated Electronics	Tianqi Zhao
09:40-10:00	1345	Strong, tough and multifunctional polyvinyl alcohol hydrogel composites	Huiming Ning
10:00-10:20	Coffee Break		
10:20-10:50	1274	**[Keynote Lecture]** Skin-integrated multimodal haptic interface for immersive tactile feedback	Zhaoqian Xie
10:50-11:10	1350	Monitoring Deformed 3D Configurations: From Flexible Sensor Design to Theoretical Prediction and Application	Xiaogang Guo
11:10-11:30	1168	Loading-Dependent Electromechanical Hysteresis of Capacitor Pressure Sensor with Viscoelastic Substrate	Yonglin Chen
11:30-11:50	1162	Remote control and tunability of reconfigurable multistable metamaterials	Weijian Jiao
11:50-12:10	1164	A Pressure-Insensitive Frequency Triboelectric Sensor Based on MWCNTs/PDMS Composite Film	Hengxiang Liu
12:10-12:30	1201	Analysis of Failure Mechanisms and Optimization Techniques for Flexible Ultrathin Chip Peeling Processes	Siyu Chen
Lunch			
14:00-14:20	1251	Modulus control technology in the processing of soft resin-based composite materials	Qizhong Yue
14:20-14:40	1169	Theoretical analysis of inffated tube wrinkling behavior under pure bending	Wenbin Wu
14:40-15:00	1198	Mechanisms of Support Loss in Flexible MEMS Resonators	Shuolong Yang
15:00-15:20	1197	Optimized Peeling Approaches for Flexible Ultrathin Chips via Surface Protection and Asymmetric Switching-position Ejection	Ziwen Kong
15:20-15:40	1210	The Carcass Part in Tensile Strength of Flexible Pipes	Mohsen Saneian
15:40-16:10	Coffee Break		

Session 12. Thermoplastic composite structures under extreme loading conditions
Chairs: Dong Quan, Dayou Ma
Time: 16:10-18:10, Tuesday, 2 September

Time	ID	Title	Speaker
16:10-16:30	1373	Hygrothermal effects on delamination behavior in thermoplastic composite laminates: Experimental and numerical simulation	Liming Chen
16:30-16:50	1388	Analysis of mechanical properties of adhesives through metastructure insertion	Dong Hyeok Choi
16:50-17:10	1237	Real-Time Monitoring of Crack Growth and Residual Life in Bonded Composite Structures Based on Acoustic Emission and Fracture Energy Correlation	Wenhao Li
17:10-17:30	1160	Hybrid Experimental/FEM/Machine Learning (ML) method for the effect of matrix content on the impact resistance of thermoplastic composite	Shunqi Zhang
17:30-17:50	1221	Enhancement of the uniformity and strength of ultrasonically welded CF/epoxy-CF/PEI joints	Jiaming Liu
17:50-18:10	1410	Electromechanical coupling mechanism and optimization design of high dielectric and tunable Poisson's ratio composite metamaterial electronic skin	Wenxuan Ding

Meeting Room 3

Session 4. Advanced numerical methods
Chairs: Michele Bacciocchi, Ahmed Makradi
Time: 8:30-15:50, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1402	**[Keynote Lecture]** A Multi-Scale Phase Field Framework for Anisotropic Fracture and Strain Gradient Effect of Heterogeneous Materials	Zhiqiang Yang
09:00-09:20	1387	Advanced stochastic response analysis method of structure with multiple-dimensional probability space	Hanshu Chen
09:20-09:40	1419	An XFEM-based moving refinement patch method for crack propagation	Ping Li
09:40-10:00	1301	Solving nonlinear problems via the asymptotic numerical method on a superconducting quantum computer	Yongchun Xu
10:00-10:20	Coffee Break		
10:20-10:40	1393	Analysis of Hollow Glass Microsphere Cement Composites Based on Three-dimensional Voronoi Hybrid Stress Elements	Yangming Su
10:40-11:00	1218	Analysis of Small-deformation Elastoplastic Problems Using The Hierarchical Quadrature Element Method	Jiaojiao Wu
11:00-11:20	1222	A Hierarchical Quadrature Element Method for Geometrically Exact Analysis of Hyperelastic Shells	Chaoyi Peng
11:20-11:40	1225	Fast Effective Strength prediction of heterogeneous materials by FCA-based basis reduction method and periodic Green's function	Qian Zhang
11:40-12:00	1298	Application of an improved enhanced finite element method based on mixed cohesive element in crack initiation and multi-crack intersection	Maoxu Lu
12:00-12:20	1462	Cure kinetics in pultrusion of Elium®-based thermoplastic fibre reinforced composites	Ahmed Makradi
Lunch			

14:00-14:30	1136	**[Keynote Lecture]** A Finite Element model for arbitrarily shaped laminated composite plates in nonlocal elasticity	Michele Bacciocchi
14:30-14:50	1154	A research on evaluating the limit of scale separation assumption in the computational homogenization method	Yutong Liu
14:50-15:10	1318	Two-scale Modeling of Interface Debonding in Piezoelectric Particulate Composites	Zhiyi Wang
15:10-15:30	1329	TTS-Based Prony Series and Interconversion for Composite Relaxation and Creep Prediction	Ali Khademi
15:30-15:50	1134	Desecrating Composite Failure Theories: Understanding Why Many Studies Fail to Predict Composite Structure Failures	Milad Abbasi
15:50-16:10	Coffee Break		

Session 22. Innovative modeling approaches for composite structures: Integrating meshfree methods and machine learning for advanced applications
Chairs: Xin Lai, Yile Hu, Zhuojia Fu, Yucheng Zhong
Time: 16:10-18:30, Tuesday, 2 September

Time	ID	Title	Speaker
16:10-16:30	1339	Inverse design of combined seismic metamaterials	Zhuojia Fu
16:30-16:50	1188	Meso-scale Strength Prediction of Liquid Molding Composites via Micro-CT based Reconstruction and State-based Peridynamics	Yile Hu
16:50-17:10	1200	Optimal design approach of interpenetrating pre-stressed metal-ceramic composites based on deep learning neural network	Xin Lai
17:10-17:30	1360	Exploring the three-point bending method to study the shear damage and failure behavior of 3D woven composites	Gang Liu
17:30-17:50	1300	Properties prediction of fiber-reinforced composites based on micromechanics and machine learning	Yucheng Zhong
17:50-18:10	1411	The asymptotic homogenization evaluation of effective mechanical property of the C/C-ZrC composite by the reconstruction technique	Chenglin Ruan
18:10-18:30	1443	Investigation of the deposition velocity related surface quality and interface morphology of steel/tin bimetallic structure fabricated by TIG-based wire arc additive manufacturing	Zhiqiang Li

Meeting Room 4

Session 1. Composite beams, plates and shells
Chairs: Asal Pournaghshband, Yuxin Hao
Time: 8:30-12:20, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1159	**[Keynote Lecture]** Shear Correction or not - That is the Question	Holm Altenbach
09:00-09:20	1185	Numerical Investigation of Anchor Embedment in CFRP-Strengthened Reinforced Concrete Beams	Asal Pournaghshband
09:20-09:40	1204	The use of FRP composite panels with an SHM system to change the pipeline-supporting structure into a bicycle footbridge	Maciej Kulpa
09:40-10:00	1408	Study on wind-induced vibration performance of sandwich-structure wind turbine towers	Xiaoxia Jiang
10:00-10:20	Coffee Break		

10:20-10:40	1447	Novel theoretical buckling solutions of composite plates and shells	Dian Xu
10:40-11:00	1194	Free Vibration Analysis of Functionally Graded Graphene Origami-Enabled Auxetic Metamaterials (GOEAMs) Reinforced Metallic Conical Shells under Elastic Boundary Conditions with Multi-Parameter Optimization	Zhi Wang
11:00-11:20	1362	Data-driven computational homogenization based on Carrera's unified formula for thin-walled composite beams	Yichen Yang
11:20-11:40	1202	DSQK finite element with assumed orthogonality bending energy and mixed transverse shear strains for thermal buckling analysis of three-layer FGM sandwich plates	Irwan Katili
11:40-12:00	1453	Size effect during hygrothermal aging of FRP composites in seawater immersion environment	Shaojie Zhang
12:00-12:20	1256	A new experimental method for obtaining out-of-plane nonlinear constitutive relations of thick-section composite materials	Ziqing Hao
Lunch			

Session 20. Stability of composite structures
Chairs: Liang Zhang, Ke Liang, Yujie Guo, Qun Huang, Anilkumar P. M. Nair
Time: 14:00-17:30, Tuesday, 2 September

Time	ID	Title	Speaker
14:00-14:30	1206	**[Keynote Lecture]** Isogeometric Impulse Buckling Analysis of Variable Stiffness Composite Shell Structures	Yujie Guo
14:30-14:50	1182	A reduced-order method for buckling analysis of thin-walled composite structures	Ke Liang
14:50-15:10	1216	Analyses of stretch-induced wrinkles in anisotropic films within framework of geometrically exact shell	Bo Liu
15:10-15:30	1242	Influence of delamination on dynamic stability and buckling of composite laminates	Anilkumar P. M. Nair
15:30-15:50	1379	Vibration and dynamic stability of FGM structures in fluid	Hui-Cui Li
15:50-16:10	Coffee Break		
16:10-16:30	1220	Structural-genome-driven method for instability analysis of thin-walled composite structures	Xiaowei Bai
16:30-16:50	1215	Geometrically nonlinear and post-buckling analyses of geometrically nonlinear laminated composite shells by a hierarchical quadrature element method	Yingying Lan
16:50-17:10	1273	Numerical study on the periodic wrinkling deformation in 2D Heterostructures due to mismatch of thermal stress	Dingyuan Liu
17:10-17:30	1309	A computational homogenization framework for global buckling and local wrinkling of thin composite beams/shells	Tianyun He

Meeting Room 5

Session 6. Impact problems
Chairs: Chao Zhang, Xin Li, Lizhi Xu, Pengfei Wang, Yong Cao
Time: 8:30-12:20, Tuesday, 2 September

Time	ID	Title	Speaker
08:30-09:00	1280	**[Keynote Lecture]** Numerical Study of Blast-resistance Properties of Negative Effective Mass Metamaterials	Xin Li
09:00-09:20	1151	Investigation of Thickness Effect and Energy Absorption Behavior for Carbon/Kevlar Hybrid Composites Subjected to High-Speed Impacts	Chao Zhang
09:20-09:40	1180	Ghost method: an analytical solution for ballistic behaviours of woven composites	Dayou Ma
09:40-10:00	1229	On the rate-dependent interlaminar fracture behaviour of CFRP laminates	Yanhong Chen

10:00-10:20	Coffee Break		
10:20-10:40	1326	Ballistic response mechanism and resistance-driven evaluation method of UHMWPE composite laminate	Yemao He
10:40-11:00	1367	Impact Energy Dissipation Mechanisms in Fiber-Reinforced Composites: The Coupling Effects of Strain Gradient and Viscoelasticity	Chaonan Cong
11:00-11:20	1392	A Machine Learning Framework for Predicting Residual Strength of Composite Airframe Structures Subjected to High-Velocity Fragment Impact	Yong Cao
11:20-11:40	1288	Double-stage Gear Cluster-Enabled Metastructure for Ultra-wide Range Continuously Tunable Stiffness	Bingren Wang
11:40-12:00	1375	Low-Velocity Impact Behavior of Skin-Grid Reinforced Natural Fiber Composites: Experimental and Numerical modeling	Lei Zhang
12:00-12:20	1295	Size-driven transitions in ballistic limit velocity and energy absorption mechanisms for plain weave fabrics	Lizhi Xu
Lunch			

Session 24. Artificial intelligence and data-driven approaches for predictive modeling of heterogeneous and composite structures
Chairs: Luwen Zhang, Jie Yang, Pengyuan Lv, Wei Huang, Heng Hu
Time: 14:00-18:10, Tuesday, 2 September

Time	ID	Title	Speaker
14:00-14:30	1253	**[Keynote Lecture]** Machine Learning-Enhanced CUF-Based Finite Element Models Using Lagrange Polynomials for Vibration Analysis of Sandwich Plates with Metamaterial Cores and Graphene Nanoplatelet-Reinforced Polymer Face	Jose Luis Mantari
14:30-14:50	1439	Information Geometry Perspectives on the Model–Data Relationship in Biotissue Mechanics	Wenyang Liu
14:50-15:10	1114	Coupling of Data-Driven computing and Model-Driven computing for composite materials and structures	Jie Yang
15:10-15:30	1357	A beam structure model based on a model-driven and data-driven coupling method	Yanchuan Hui
15:30-15:50	1426	A Data-Driven Multiscale Simulation Framework and Open-Source Software for FRP Composites	Wei Huang
15:50-16:10	Coffee Break		
16:10-16:30	1377	Investigation of the LVM-enhanced neural network for automatic CT image segmentation in composites	Pengyuan Lv
16:30-16:50	1322	Quantum computing with error mitigation for data-driven computational homogenization	Zengtao Kuang
16:50-17:10	1340	Physics-informed ensemble learning for robustly extrapolating and revealing fatigue life of composites	Cheng-Cheng Lyu
17:10-17:30	1351	Forming-Net: A Physics-Enhanced Multi-task U-Net for Deformation and Stress Prediction in Woven CFRP Preform Forming	Tianyu Lu
17:30-17:50	1440	Mechanics-informed Data-driven Modeling Framework for Viscoelastic Composite Structures	Yicheng Lu
17:50-18:10	1366	A Physics-Informed Neural Framework for Solving Localized Discontinuities	Zhihong Lai

Wednesday, 3 September

Helan Mountain Hall A

Session 2. Damage and failure in composite structures
Chairs: Daxu Zhang, Yiru Ren, Zhen Li, Lei Yang
Time: 8:30-17:50, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1258	**[Keynote Lecture]** The damage and failure of aircraft composite structure under emergency landing	Yiru Ren
09:00-09:20	1247	Impact damage model and parameter sensitivity analysis of icy lunar regolith based on DEM-FDM coupling method	Wenping Wu
09:20-09:40	1313	Characterising damage evolution in ceramic matrix composites using in-situ X-ray CT and Deep Learning	Daxu Zhang
09:40-10:00	1167	Detecting Damage in Composite Materials using microwaves	Zhen Li
10:00-10:20		Coffee Break	
10:20-10:40	1152	Mixed-mode partitioning for circular edged laminate beams under tip moments	Bo Yuan
10:40-11:00	1174	CT image post-processing research on defect analysis, deep learning, digital correlation, and finite simulation of fiber composites - a review	Lanxin Jiang
11:00-11:20	1212	Bridging effects for Z-pinned double cantilever beams	Tianyu Chen
11:20-11:40	1365	Size effect on partially loaded areas in thin-walled ultra-high performance concrete	Haipeng Lei
11:40-12:00	1372	Validation of the fully rationalized Tsai-Wu failure criterion for unidirectional laminates under multiaxial stress states through a ring-on-ring test	Shibo Yan
		Lunch	
14:00-14:30	1142	**[Keynote Lecture]** Research on ultra-low temperature microcrack and leakage of carbon fiber composites considering prestress	Lei Yang
14:30-14:50	1378	Study on progressive collapse resistance mechanism of corroded RC frame structure strengthened with BFRP sheets	Huan Long
14:50-15:10	1424	Comparative investigation on bearing failure mechanisms of CFRPs and 3DOWC/Cs mechanically fastened joints via concurrent modelling strategy	Yanfeng Zhang
15:10-15:30	1376	Influence of delamination on bending performance of glass fiber reinforced composites by experiments	Senlin Zhang
15:30-15:50	1267	A novel data-driven framework for failure prediction of composites	Liang Li
15:50-16:10		Coffee Break	
16:10-16:30	1381	Interpretable machine learning-based framework for fatigue progressive damage prediction in carbon fiber reinforced composites	Yvbin Lu
16:30-16:50	1436	Failure mechanism analysis and crashworthiness design of key components in aircraft sub-cargo fuselage section	Yiming Zhao
16:50-17:10	1446	Experimental Analysis and Optimization of Balsa Wood Composites for Wind Turbine Blade Lightweighting	Li Qu
17:10-17:30	1406	A CDM-based progressive failure model for composite structures in thermal environments and comprehensive validation	Suian Wang
17:30-17:50	1224	Crashworthiness Characteristics of Lotus Stem Inspired Composite Tubes	Jiangwei Qi

Helan Mountain Hall C

Session 17. Experiments and modelling of fatigue, damage and fracture of composite materials and structures
Chairs: Licheng Guo, Kunkun Fu, Wu Xu, Kai Huang
Time: 8:30-17:30, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1163	**[Keynote Lecture]** Curing monitoring and characterization of composite materials repairing	Xuefeng Yao
09:00-09:20	1243	An orthotropic, elasto-plastic material model to simulate the nonlinear structural response of large composite structures	Sven Scheffler
09:20-09:40	1250	A partitioned based algorithm for cohesive crack simulations in composite structures subjected to fluid–structure interaction effects	Shunhua Chen
09:40-10:00	1304	Experimental and simulation study on fatigue behavior of carbon fiber composite wingtip structure	Yidong Zhang
10:00-10:20		Coffee Break	
10:20-10:40	1450	Superior through-thickness performance of carbon/phenolic 3D needled/stitched coupled composites: shear behavior and damage mechanisms	Tao Zheng
10:40-11:00	1223	Multi-Step Static Analysis using the VCCT Method to Simulate Mode I Fatigue Delamination of Composite Laminates	Xi Li
11:00-11:20	1231	Effect of mechanism of resin-rich zone on Mode I Fracture toughness of multi-di-rectional composite laminates	Qingfeng Duan
11:20-11:40	1435	Interlaminar and in-plane failure mechanisms in z-pinned CFRP composites governed by curing residual stresses	Shengnan Zhang
11:40-12:00	1193	Experimental and numerical investigations of the damage evolution in unidirectional thin all-carbon hybrid laminates	Junyu Wu
12:00-12:20	1358	Multiscale modeling and damage analysis of the plain woven composites	Meng Wang
		Lunch	
14:00-14:30	1413	**[Keynote Lecture]** Data-driven investigation on mechanical behaviors of woven composites	Kai Huang
14:30-14:50	1369	Joint Stiffness Degradation of C/SiC Single-Bolt Single-Lap Joints under Fatigue Loading	Xin Li
14:50-15:10	1328	Experimental investigation on reducing the interface adhesion of concrete and formwork via electroosmosis approach	Jinhui Yang
15:10-15:30	1456	Integral equation solution-based damage model for doubly periodic crack problems in elastic and piezoelectric materials	Pengpeng Shi
15:30-15:50	1178	Multiscale analysis on fatigue characteristics of 3D braided composites	Guangrun Wang
15:50-16:10		Coffee Break	
16:10-16:30	1330	Physics-Based Simulation of Residual Compression Strength in Carbon Fiber/PEEK Laminates After Impact	Yunhan Deng
16:30-16:50	1199	Effect of thermal cycling on the anisotropic mechanical behavior of plain-woven aramid fabric-reinforced composites	Weihao Wu
16:50-17:10	1434	Translaminar fracture of Double-Double composite laminates	Xiang Li
17:10-17:30	1382	Study on delamination simulation of composite laminates using a new 3D interface element based on an improved Lemaitre's damage model	Weihang Lv

Meeting Room 1

Session 15. Microstructure design of composite materials
Chairs: Sha Yin, Yanan Yuan, Chao Sui
Time: 8:30-11:50, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1289	**[Keynote Lecture]** Mechanisms of grain boundary segregation, structural transformation, and diffusion in ceramic materials	Chuchu Yang
09:00-09:20	1195	Variable Poisson's ratio honeycomb molding process for ultralight carbon fibers and its performance exploration under typical loads	Qianqian Wu
09:20-09:40	1299	Structural designs, Mechanical and Thermal Properties of Continuous Zirconia Ceramic fibers and their nanocomposites	Chao Sui
09:40-10:10	Coffee Break		
10:10-10:30	1226	Development of a group random algorithm to generate a RVE model for discontinuous fiber-reinforced composites with more accurate description of fiber orientation	Guodong Xu
10:30-10:50	1314	Heat transfer characteristics of sandwich structures with graded lattice core under non-uniform heat load	Xiaohong Wang
10:50-11:10	1391	Design and Analysis of a Multi-Mechanism Energy-Absorbing Lattice Structure Inspired by Kirigami and Dual-Phase Strategies	Huitian Wang
11:10-11:30	1428	A phase separation micromechanical model framework for bicontinuous dual-phase polymer matrix based structural power composites	Guocheng Qi
11:30-11:50	1248	A Flexible Impact Sensor of Interpenetrating Phase Composite Architecture with High Mechanical Stability and Energy Absorbing Capability	Guo Shu
Lunch			

Session 23. State awareness and digital twin of composites and structures
Chairs: Qiang Yang, Kuo Tian, Heng Yang
Time: 14:00-18:30, Wednesday, 3 September

14:00-14:30	1324	**[Keynote Lecture]** Fiber Bragg Grating-Based Multi-Parameter Monitoring of Large-Sized Composite Wing Panels During Forming	Qi Wu
14:30-14:50	1293	Digital twin for full-field structural strength assessment and prediction	Kuo Tian
14:50-15:10	1241	Research on Damage Detection in Braided CFRP Outlet Guide Vane via Electrical Impedance Tomography	Xiaoying Cheng
15:10-15:30	1268	A Time-Dependent Damage Model of 2D-C/SiC Applicable to Dynamic Data-Driven Framework	Zhi Wang
15:30-15:50	1277	Identification of patterns and depths of interfacial defects based on active infrared thermography	Lijun Zhuo
15:50-16:10	Coffee Break		
16:10-16:30	1291	Flight parameter-load-life digital twin modeling approach	Lei Huang
16:30-16:50	1259	Experimental investigation on reusability of C/SiC T-joint structure under typical repeated loads	Yujie Wang
16:50-17:10	1359	High-Sensitivity Thin-Film Strain Sensor for Online Monitoring of CFRP Composite structures	Shengjie Wang
17:10-17:30	1385	Design of high-sensitivity, large-strain composite sensors and its application in sealing structure online monitoring	Wenhao Zhao
17:30-17:50	1386	A Highly Sensitive, Wide-Range Flexible Pressure Sensor for Online Monitoring of Sealed Rubber Structures	Li Huang
17:50-18:10	1292	Digital Twin-based Real-time Monitoring and Advanced Forecasting Method for Structural Strength Experiments	Ziyu Xu
18:10-18:30	1302	Design and application of high-temperature sensing materials based on polymer derived ceramics	Jiahong Niu

Meeting Room 2

Session 21. Design and evaluation methods for aerospace composite structures
Chairs: Chairs: Wenzhi Wang, Xiangming Chen, Liaojun Yao, Haixiao Hu
Time: 8:30-17:10, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1294	**[Keynote Lecture]** Research on the Damage Behaviour of Composites with Embedded Optical Fibre Based on Multi-Scale Method	Lilong Luo
09:00-09:20	1205	Study on the prediction of defect in additive manufacturing composites by a combination of artificial intelligence and infrared thermography methods	Hongliang Tuo
09:20-09:40	1234	Investigation on the development of process induced micro-cracks in composites by in-situ monitoring of cure process with strong constraints	Haixiao Hu
09:40-10:00	1337	Design, fabrication and mechanics of lightweight composite sandwich structures	Jian Xiong
10:00-10:20	Coffee Break		
10:20-10:40	1290	A numerical model for fiber-bridged mode I fatigue delamination in composite laminates	Liaojun Yao
10:40-11:00	1323	Research on Multiscale Modification of Mechanical Properties of Epoxy Resin-Based Composites for Cryogenic Aerospace Engineering	Fangliang Guo
11:00-11:20	1368	AI-Augmented Evaluation and Failure Prediction Method for Aerospace Composite Structures	Lei Wan
11:20-11:40	1249	Theoretical analysis and structural optimization of metal–composite hybrid joints with pin reinforcement	Yueran Zhao
11:40-12:00	1287	Damage mechanism and suppression method of composite sleeved interference-fit joints during installation	Lan Wang
12:00-12:20	1284	Effects of multi-field coupled curing process on mechanical performance of CFRP composites under three-point bending	Silu Qin
Lunch			
14:00-14:20	1279	Double-Double laminates: towards the extreme lightweight design	Cheng Qiu
14:20-14:40	1278	An online defect inspection approach for automated fibre placement based on laser profilometer and deep learning	Junming Zhang
14:40-15:00	1275	Characterization and Prediction of Coupled Failure Mechanisms in Triaxially Braided Composites under Complex Biaxial Loading Conditions	Yinglong Cai
15:00-15:20	1347	Lightweight origami sandwich structures with gradient design for improved energy absorption capacity	Zhou Yang
15:20-15:40	1356	Interface design against delamination in CFRP: interleaving or cross-linking due to interlayer thickness and volume density of micro-/nano- Aramid pulp fibers	Yabin Deng
15:40-16:10	Coffee Break		
16:10-16:30	1282	A shell-based model for rapidly predicting residual strength of laminated composites through intelligent reconstruction of low-velocity impact damage	Nian Li
16:30-16:50	1431	Surface Ablation Model in mesoscopic scale of a Quartz/Phenolic Composite with gas-liquid-solid phase evolution mechanism	Shengbo Shi
16:50-17:10	1354	Enhancing impact resistance of hybrid structures designed with triply periodic minimal surfaces	Fenglei Li

Meeting Room 3

Session 10. Mechanical behaviors and failure of ceramic matrix composite structures
Chairs: Yi Zhang, Bin Liu
Time: 8:30-16:00, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1404	**[Keynote Lecture]** A novel pressureless in-situ repair method for C/SiC composites: design of B4C modified ceramizable repair agent and its self-healing boding mechanism	Xuqin Li
09:00-09:20	1335	Ultra-high temperature in-situ X-ray CT characterisation of the damage evolution of C/SiC woven composites	Panding Wang
09:20-09:40	1374	A Combined Phase-Field Cohesive-Zone Modeling and Machine Learning Driven Strategy for Interface Design in Ceramic Matrix Composites	Chong Wei
09:40-10:00	1140	4D characterisation of damage evolution in ±45° plain weave SiC/SiC composites at 1200°C under tension using in-situ X-ray CT	Chao Chen
10:00-10:20	Coffee Break		
10:20-10:40	1196	In-plane anisotropic tensile behavior of carbon fiber hybrid fabric reinforced ceramic matrix composites: characterization and multi-scale modeling	Yiyuan Liu
10:40-11:00	1319	Low-cost needle-punched SiO2/SiO2 ceramic composites with low permittivity and enhanced high-temperature mechanical behavior	Jiajing Zhang
11:00-11:20	1332	2D SiC/SiC turbulence control strut: narrow band random vibration fatigue behavior and performance degradation	Mingyang Liu
11:20-11:40	1334	Stress-oxidation induced tensile properties degradation of 2D SiC/SiC at elevated temperature up to 1500°C	Bojie You
11:40-12:00	1364	Elevated-temperature in-situ μCT characterization and progressive damage simulation of EBC-coated SiC/SiC ceramic matrix composites	Dingguo Hu
12:00-12:20	1371	Comprehensive Thermo-Mechanical Performance Evaluation and Interlayer Design Optimization of Multilayer Composite Nuclear Cladding	Shuang Liang
Lunch			
14:00-14:20	1380	Design and Analysis of an Integrated Thermal Protection System Featuring C/SiC Composite Sandwich Panels with Truncated Hollow Cuboctahedron Lattice Cores	Liqiang Liu
14:20-14:40	1397	Microscale crack evolution and SiC coating damage in C/SiC composites characterized by scanning electron microscope-digital image correlation	Kunjie Wang
14:40-15:00	1403	Quantification evaluation of tensile damage in SiO2f/SiO2 ceramic matrix composites based on X-ray computed tomography and acoustic emission techniques	Bo Zhang
15:00-15:20	1405	A Fatigue Life Prediction Method for Ceramic Matrix Composites Considering the Effects of Initial Defect State	Changqi Liu
15:20-15:40	1355	Study on the Thermal Behavior of Joining SiC Cladding Tubes with Different Metal-Based Filler Alloys	Yu Zhou
15:40-16:00	1423	Properties and applications of C/SiC composite fasteners	Si'an Chen

Meeting Room 4

Session 16. Design and properties of 3D-printed composite structures
Chairs: Xiaoyong Tian, Kui Wang, Yi Xiong, Congze Fan, Zhanghao Hou, Jin Wang
Time: 8:30-15:40, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1457	**[Keynote Lecture]** Additive Manufacturing of Multifunctional Continuous Fiber Composites	Xiaoyong Tian
09:00-09:20	1150	Bioinspired Multi-cell Thin-Walled Structure with Staggered Diaphragms	Kui Wang
09:20-09:40	1346	Constitutive Modeling and Validation of 4D Printed Continuous Fiber Reinforced Shape Memory Polymer Composites	Chengjun Zeng
09:40-10:00	1384	Microscale and Mesoscale Process Simulation for 3D Printed Continuous Fiber-reinforced Thermoplastic Composites	Siqin Liu
10:00-10:20	Coffee Break		
10:20-10:40	1170	INNOVATIVE FRP-CONCRETE CO-EXTRUSION TECHNOLOGY FOR FRP REINFORCED 3D PRINTED FUNCTIONALLY GRADED CONCRETE STRUCTURES	Junjie Zeng
10:40-11:00	1227	Design and 3D Printing of Continuous Fiber Reinforced Composite Structures with Variable Stiffness	Zhanghao Hou
11:00-11:20	1286	A bamboo-inspired composite thin-walled structure with controllable crushing behaviors: Experimental and numerical study	Jin Wang
11:20-11:40	1400	Continuous Carbon Filament Surface Reinforcement for Complex Shapes by a Dual-Robot System	Zemin Shao
11:40-12:00	1143	Biomimetic structures with snapping motion by multi-material 4D printing	Yangyu Huang
12:00-12:20	1144	3D printed continuous carbon fiber reinforced composite stretchable sensors with tunable mechanical and sensing performance	Depeng Wang
Lunch			
14:00-14:20	1262	Research on the Optimization of Z-direction 3D Printing Process for Polyetheretherketone (PEEK) Composites	Keyuan Yang
14:20-14:40	1269	Research on Additive Manufacturing of Composite V-shaped Structures	Kai Liu
14:40-15:00	1270	Non-Contact Characterization of Curved Filament Paths in CFRP 3D Printing Using VC-UNet and Adaptive Arc Detection	Yuchen Liu
15:00-15:20	1272	Effect of infrared-assisted in-situ consolidated AFP process parameters on the mechanical properties of thermoplastic composite	Xiankun Qu
15:20-15:40	1213	Failure Mechanisms and Process Defects of 3D-printed Continuous Carbon Fiber-reinforced Composite Circular Honeycomb Structures with Different Stacking Directions	Xin Zhang

Meeting Room 5

Session 25. Advanced High-Performance Cementitious Materials and Composite Structures: Mechanics, Modelling and Design
Chairs: Yin Chi, Hu Feng, Junjie Ye, Le Huang
Time: 8:30-12:00, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1445	**[Keynote Lecture]** Size effect on mechanical properties of steel-recycled aggregate concrete composite structures	Yue Geng
09:00-09:20	1370	Tensile and flexural performances of pre-cracked UHPC under the coupled actions of sustained loading and corrosive media	Yiming Yao
09:20-09:40	1401	Mechanical properties and design method of engineered geopolymer composite (EGC) shield tunnel segments	Hu Feng
09:40-10:00	1448	Mechanical Performance and Modeling of Multi-scale Fiber Reinforced Cementitious Composites	Peizhao Zhou
10:00-10:20	Coffee Break		
10:20-10:40	1383	Residual Tensile Strength in Composite Laminates: A Deep Learning Approach	Lu Liu
10:40-11:00	1441	Tensile and shear behaviors of C-S-H gels in aged concrete under the coupling effect of dry-wet cycling and carbonation: From the molecular perspectives	Yinjie Yang
11:00-11:20	1325	AI assisted mechanical responses and multi-scale failure analysis of composite joints: an integration of machine learning, theoretical and numerical approaches	Zewen Gu
11:20-11:40	1327	Effects of low heat Portland cement on the hydration and microstructure characteristics of ultra-high performance concrete (UHPC)	Bo Huang
11:40-12:00	1394	Durability of the Initially Cracked Ultra High Performance Concrete Subjected to Coupled Chloride and Freeze-Thaw Attacks	Xianbing Ai
Lunch			

Session 19. Applications of composite structures in transportation vehicles
Chairs: Ping Xu, Tao Zhu, Chengxing Yang, Hanfeng Yin, Xianfeng Yang
Time: 14:00-18:30, Wednesday, 3 September

14:00-14:30	1211	**[Keynote Lecture]** Reed-inspired novel Honeycomb with High Lateral Energy Absorption Performance	Hanfeng Yin
14:30-14:50	1417	Crush energy-absorbing performance of composite structures for rail vehicles	Chengxing Yang
14:50-15:10	1179	Internal damage quantification of low-velocity impact damage in thick FRP laminates using phased-array ultrasound, X-ray CT, and finite element methods	Haiyang Li
15:10-15:30	1186	Design and verification of air drop landing buffer energy absorption device for rescue transport vehicles	Guangxiang Hao
15:30-15:50	1425	Bio-inspired helicoidal laminates in B-pillar T-joints: manufacturing and structural response	Shaojie Zheng
15:50-16:10	Coffee Break		

Time	ID	Title	Speaker
16:10-16:30	1244	Research on the Burst Failure Analysis Method of Type III Cylinders Based on the Fiber Strength Reduction Effect	Ruiqi Li
16:30-16:50	1305	Multi-objective optimization of axial and oblique compression performance of conical corrugated tube	Minhan Xie
16:50-17:10	1306	Experimental investigation and constitutive modelling of laminated windshield glass for rail vehicle applications	Jun Yang
17:10-17:30	1307	Mechanics-informed assessment of composite hoods: insights from anti-climbing energy-absorbing interactions	Zhao Nan
17:30-17:50	1310	Prediction of Crashworthiness Metrics and Deformation Reconstruction for Square-Cone Energy-Absorbing	Yujia Huo
17:50-18:10	1311	Latent-Driven Structural Generation and Performance-Constrained Optimization for Composite energy-absorbing structures	Bo Wang
18:10-18:30	1312	Analysis of Mechanical Response of High-Speed Train Pantograph Camera Shroud to Hail Impact	Dedun Bao

Meeting Room 6

Session 13. Contact mechanics of composite materials
Chairs: Jia-Jia Mao, Fei Shen, Jing Liu, Hui-Cui Li, Liao-Liang Ke
Time: 8:30-12:00, Wednesday, 3 September

Time	ID	Title	Speaker
08:30-09:00	1266	**[Keynote Lecture]** Interfacial mechanics of film-substrate systems	Peijian Chen
09:00-09:20	1208	A new method for measuring the interlaminar tensile strength of composites by four-point contact bending test	Mingyang Chen
09:20-09:40	1189	A Residual Stress-Integrated Mechanical Model for Fracture Toughness Measurement of Coating Systems via Cross-Sectional Indentation	Juan Liu
09:40-10:00	1219	Fretting wear behavior of PVA-based hydrogels under dry friction	Fei Xu
10:00-10:20	Coffee Break		
10:20-10:40	1228	Research on Thermoelastic Contact Instability of Double-layered Plate	Shuoheng Wang
10:40-11:00	1254	Two-dimensional steady-state frictional contact analysis of functionally graded piezoelectric layers	Kaiwen Xiao
11:00-11:20	1264	Steady-state temperature distribution of three-layered plate considering interfacial thermal contact resistance	Xiangcheng Li
11:20-11:40	1429	A novel method for measuring interlaminar tensile strength of ceramic matrix composites based on three-point bending test	Wenbo Li
11:40-12:00	1432	Research on the Contact Mechanics Behavior of Fiber-Matrix Infiltration	Fuzheng Guo

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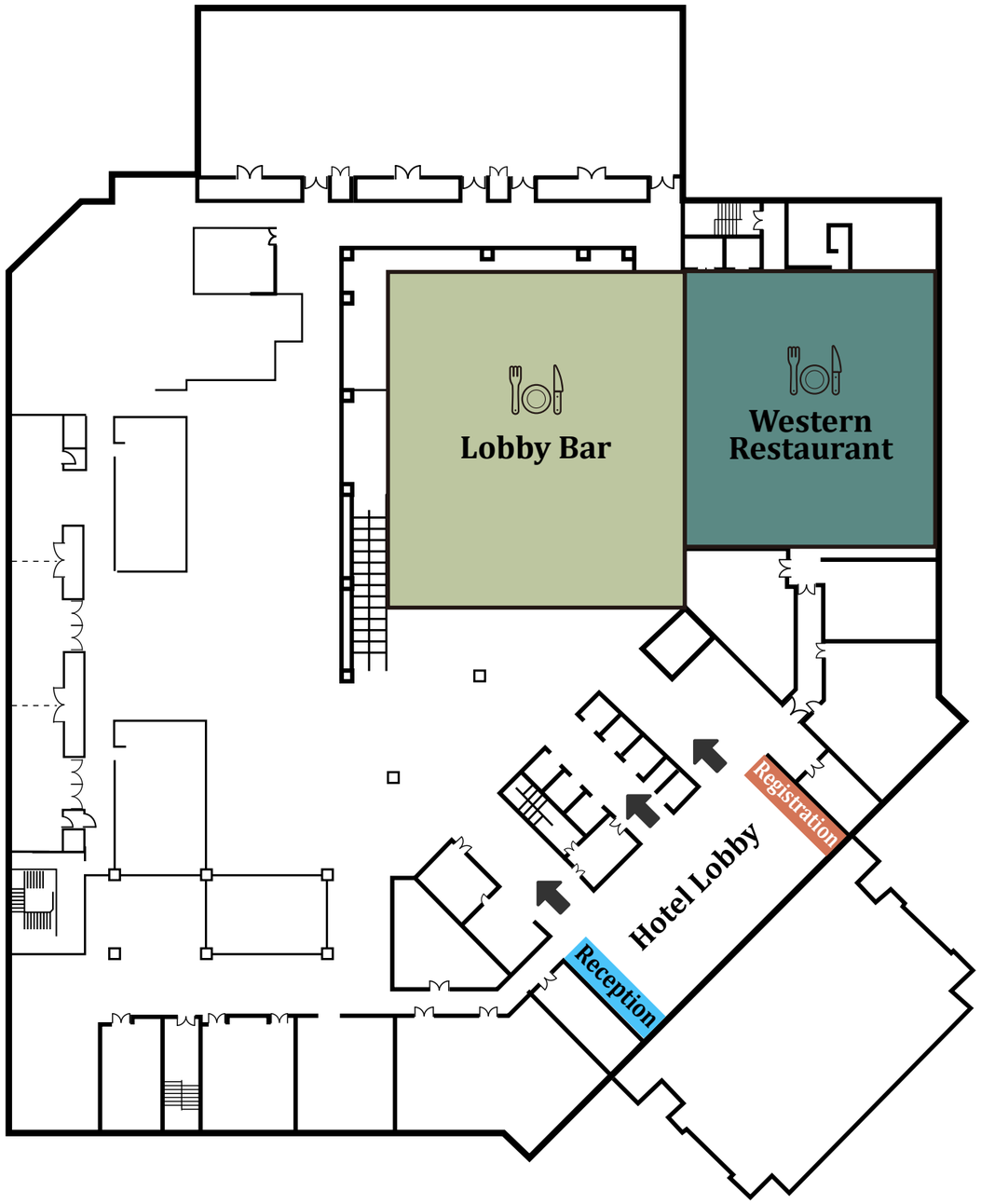

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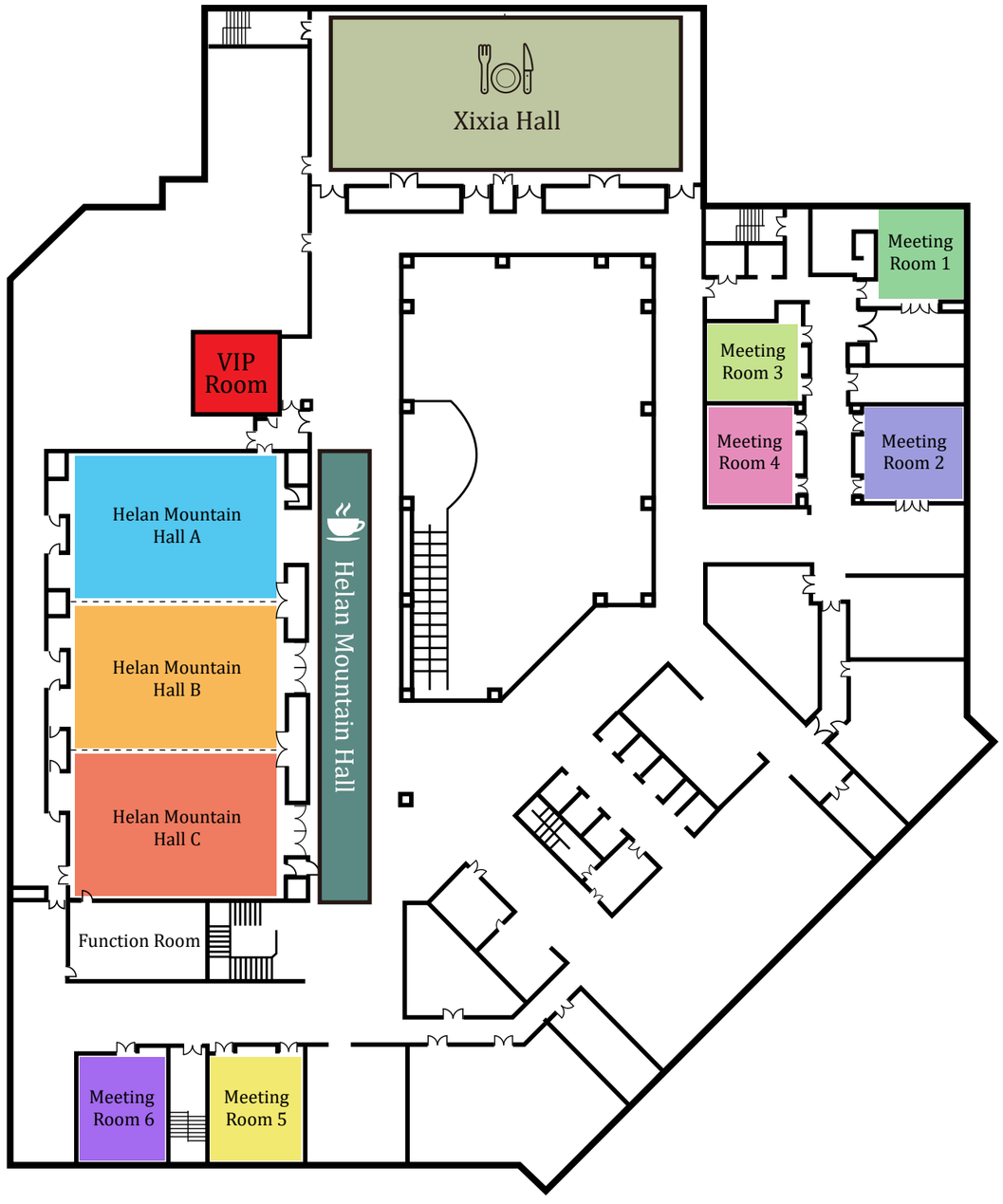

2nd Floor

Conference Notes