

2024 International Symposium on Structural Integrity
Dongguan, China
November 5-8, 2024
<https://issi2024.china-sic.net>

Program

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2024 International Symposium on Structural Integrity
Dongguan, China
November 5-8, 2024
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Organized by

CSIC 中国结构完整性联盟
China Structural Integrity Consortium

Locally organized by



Centre of Excellence for Advanced Materials, Dongguan

Co-organized by



Supported by

International Council on Pressure Vessel Technology - Asian-Oceanic Regional Committee

International Institute of Welding (IIW) - Pressure Vessels, Boilers & Pipelines

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Structural Integrity for Advanced Manufacturing

Technical Program

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Welcome from Chairs of ISSI2024

Dear Colleagues,

Welcome! The 2024 International Symposium on Structural Integrity (ISSI2024) will be held in Dongguan, China, by Centre of Excellence for Advanced Materials, during November 5-8, 2024. The predecessor of the annual symposium, Fracture Mechanics series, took place each year from 2003 to 2009, was renamed as Structural Integrity series after 2010, and organized by China Structural Integrity Consortium (CSIC).



Advanced manufacturing is now applied in the aerospace, automotive, electronics or healthcare sectors and beyond. In order to achieve the rapid development of advanced manufacturing technology and ensure the reliable and long-term service of advanced manufactured engineering components, it is necessary to enhance the reliability of engineering components from the holistic point of view including material, process, design, operation, failure analysis and integrity management, which is now known as reliability-centered manufacturing. This places higher demands on the theory and technology of structural integrity, involving key technological areas such as material genetic engineering, innovative manufacturing processes, failure assessment, life prediction, non-destructive testing and health condition monitoring. All of these underpin the theme of ISSI2024, ***“Structural Integrity for Advanced Manufacturing”***.



The aim of this symposium is hence to bring together people from both academic and industrial communities to exchange ideas and network friendship by discussing emerging structural integrity issues in the advanced manufacturing field. Best Student Paper and Best Poster will be bestowed at the closing session.

Hope you enjoy the conference and life in Dongguan.

With the very best wishes.

A handwritten signature in black ink, appearing to read 'Shan-Tung Tu'.

Prof. Shan-Tung Tu
Chairman of ISSI Symposium Series
East China University of Science & Technology

A handwritten signature in black ink, appearing to read 'Shu-Yan Zhang'.

Dr. Shu-Yan Zhang
ISSI2024 Executive Chairman
Centre of Excellence for Advanced Materials

Committee of ISSI2024

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Symposium Coordinator

Prof. Jian-Feng Wen, ECUST (jfwen@ecust.edu.cn)

Symposium Secretariat

Dr. Gui-Yi Wu, CEAM (guiyi.wu@ceamat.com)

Program at a glance

Day	Time	Event	Place
Nov 5	08:30—22:00	Registration	Hotel Lobby
	20:00—22:00	Panel discussion: Scientific writing and publication ethics	Conference Room 1
Nov 6	08:30	Opening speech	
	08:35	Welcome address	
	08:40	Welcome and program introduction	
	08:45—09:55	Series session 1	
	09:55—10:25	Group photo & Coffee break	International Conference Hall
	10:25—12:10	Series session 2	(Lunch at Western Restaurant)
	12:10—13:40	Lunch & Break	
	13:40—15:25	Series session 3	
	15:25—15:45	Coffee break	
	15:45—17:30	Series session 4	
18:30—20:30	Conference dinner		
Nov 7	08:30—10:10	Parallel sessions 1-11 & Student paper competition	
	10:10—10:30	Coffee break	
	10:30—12:10	Parallel sessions 12-22 & Student paper competition	11 Conference Rooms
	12:10—13:30	Lunch & Break	(Lunch at Western Restaurant)
	13:30—15:15	Parallel sessions 23-33 & Student paper competition	
	15:15—15:45	Coffee break	
	15:45—18:00	Parallel sessions 34-42	
	16:00—18:20	Poster Q&A session	Conference Hall Corridor
	18:30	Buffet	Western Restaurant
19:30—21:00	CSIC council meeting	Conference Room 3	
Nov 8	8:30—10:15	Series session 5	
	10:15—10:40	Coffee break	
	10:40	Best paper/poster award ceremony	International Conference Hall
	11:00	Introduction to the next symposium	
	11:30	Conference summary	
	12:00—13:40	Lunch & Break (Conference end)	Western Restaurant
	14:00—14:40	Technical visiting – CEAM	CEAM
	15:10—15:50	Technical visiting – SSLab or CSNS	SSLab or CSNS
16:00	Technical visiting end		
END			

Nov 5, 2024

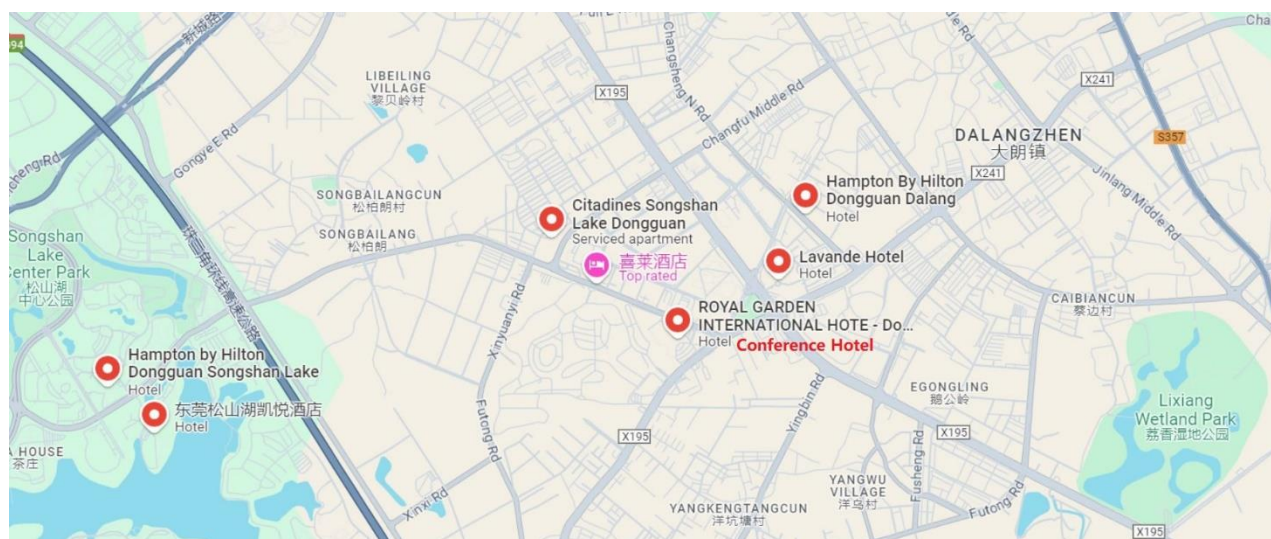
Day 1: Registration

08:30—22:00

On-site registration

Royal Garden Hotel, No.769 Meijing Middle Road, Dongguan, China

- The symposium registration is open from 8.30am to 10pm on Nov 5, 2024, at the main lobby of the **Royal Garden Hotel**, located at No.769 Meijing Middle Road, Dalang, Dongguan, Guangdong, China.
- Later participants who cannot arrive on Nov 5, 2024 can register at the main lobby of the Royal Garden Hotel Dongguan on the morning of Nov 6/7, 2024, from 8am to 10am.
- Registration fee is 360 USD (2700RMB). Students are welcome with a reduced registration fee of 270 USD (1900RMB). The registration fee covers admission to all technical sessions; two refreshment breaks each day of the conference, lunches, dinners, conference banquet, and a copy of the conference proceedings, but not accommodation.



Registration/Conference/Accommodation location: Royal Garden Hotel, No.769 Meijing Middle Road, Dalang, Dongguan, Guangdong

注册/会议/住宿地址: 帝豪花园酒店 (广东省东莞市大朗镇美景中路769号)

Day 1: Detailed Program**Panel Discussion: Scientific Writing and Publication Ethics**

//Conference Room 1 (1号会议室)

Session chair: You-Shi Hong (Institute of Mechanics, Chinese Academy of Sciences, China)

20:00—20:05	Opening remarks Shan-Tung Tu <i>East China University of Science and Technology, China</i>
20:05—20:50	Presentations J.N. Reddy <i>Texas A&M University, USA</i> Zhong-Qing Su <i>The Hong Kong Polytechnic University, Hong Kong, China</i> You-Shi Hong <i>Institute of Mechanics, Chinese Academy of Sciences, China</i>
20:50—22:00	Interactive Discussion

Day 2: Detailed Program

Conference Opening

//International Conference Hall (国际宴会厅)

Session chair: Guiyi Wu (Centre of Excellence for Advanced Materials, China)

08:30	Opening speech Shan-Tung Tu, Chairman of Symposium Series <i>East China University of Science and Technology, China</i>
08:35	Welcome address Government Officer <i>Dongguan, China</i>
08:40	Welcome and program introduction Shu-Yan Zhang, Executive chairman of ISSI2024 <i>Centre of Excellence for Advanced Materials, China</i>

Series session 1: Plenary lectures //International Conference Hall (国际宴会厅)

Session chair: Shan-Tung Tu (East China University of Science and Technology, China)

08:45—09:20	Modeling and analysis of the integrity of architected materials and structures JN Reddy <i>Texas A&M University, USA</i>
09:20—09:55	AI for science (AI4S) - AI for structural integrity Tong-Yi Zhang <i>Hong Kong University of Science and Technology (Guangzhou), China</i>
09:55—10:25	Group photo & Coffee break

Series session 2: Plenary lectures //International Conference Hall (国际宴会厅)

Session chair: Shu-Yan Zhang (Centre of Excellence for Advanced Materials, China)

10:25—11:00	Weibull strength distributions of brittle ceramics and fracture toughness evaluation without long cracks: Controversy or reality? Yiu-Wing Mai <i>The Hong Kong Polytechnic University, Hong Kong, China</i>
11:00—11:35	Mechanics and mechanisms of environmentally assisted cracking and its implication to structural integrity assessment Tetsuo Shoji <i>Tohoku University, Japan</i>
11:35—12:10	Corrosion and integrity of buried oil and gas pipelines En-Hou Han <i>Institute of Corrosion Science and Technology, China</i>
12:10—13:40	Lunch & Break

Series session 3: Plenary lectures //International Conference Hall (国际宴会厅)

Session chair: Jian-Feng Wen (East China University of Science and Technology, China)

13:40-14:15	Fatigue: Still an intractable problem - A review of outstanding issues Roderick Smith <i>Imperial College London, UK</i>
14:15-14:50	Corrosion and mechanical degradation of additively-manufactured Mg scaffolds for tissue engineering applications Javier Llorca <i>Polytechnic University of Madrid, Spain</i>
14:50-15:25	The rational experimental-computational correlation (RECC) – Reliability improvement toolkit for materials technologies in aerospace design Alexander Korsunsky <i>University of Oxford, UK</i>
15:25-15:45	Coffee break

Series session 4: Plenary lectures //International Conference Hall (国际宴会厅)

Session chair: David Nash (University of Strathclyde, UK)

15:45-16:20	Evaluation of high temperature performance of refractory materials Hong-Xia Li <i>China Baowu Steel Group Corporation Limited, China</i>
16:20-16:55	The application of diffraction-based neutron techniques on the study of Ni-based superalloys Hong-Biao Dong <i>University of Leicester, UK</i>
16:55-17:30	Topology optimization and additive manufacturing for advanced structures Wei-Hong Zhang <i>Northwestern Polytechnical University, China</i>
17:30-17:40	Introduction to ICPVT15 David Nash <i>University of Strathclyde, UK</i>
18:30-20:30	Conference dinner

Day 3: Detailed Program

Parallel session 1: Fatigue and fracture under extreme conditions I

//International Conference Hall A (国际宴会厅A)

Session chair: Shengchuan Wu (Southwest Jiaotong University, China)

08:30—08:55	<p>Keynote lecture Isothermal and thermo-mechanical fatigue crack growth analysis based on multi-physics computations, fractography and DIC Valery Shlyannikov*, Aleksandr Sulamanidze, Dmitry Kosov <i>Institute of Power Engineering and Advanced Technologies, Russia</i></p>
08:55—09:10	<p>Effect of thermal cycling on the thermomechanical fatigue behaviour and microstructures of 316L Peng Yin, Wei Zhang*, Changyu Zhou <i>Nanjing Tech University, China</i></p>
09:10—09:25	<p>Investigation of fracture behavior in hydrogenated Zirconium alloys using a coupled crystal plasticity-phase field fracture model Xiaodong Zan, Xiang Guo* <i>Tianjin University, China</i></p>
09:25—09:40	<p>Temperature-dependent hydrogen-induced crack propagation behavior and mechanism in polycrystalline α-iron: Insights from molecular dynamics simulations Jiaqing Li, Ziyue Wu, Zhiye Zheng, Lin Teng, Kai Lu* <i>Fuzhou University, China</i></p>
09:40—09:55	<p>Energy release rate and mode partition solutions for an edge-cracked thin circular beam Yi Li, Bo Yuan*, Christopher Harvey, Xiaofeng Guo, Simon Wang <i>Inner Mongolia University of Science and Technology, China</i></p>
09:55—10:10	<p>Effect of pre-low cycle fatigue loading on random ratchet-creep fatigue Wei-Tong Zhou, Guo-Yan Zhou* <i>East China University of Science and Technology, China</i></p>
10:10 – 10:30	<p>Coffee & Break</p>

Parallel session 2: Reliability-centered manufacturing I

//Conference Room 1 (1号会议室)

Session chair: Yu'e Ma (Northwestern Polytechnical University, China)

08:30—08:55	Keynote lecture Product reliability: engineering practices, challenges and solutions Xiaobin Lin <i>Shanghai SWINS Engineering Technology Co., Ltd, China</i>
08:55—09:10	Superior resistance to stress corrosion cracking of a selective laser melted 304L stainless steel in high-temperature hydrogenated water Wenjun Kuang* , Shihao Zhang, Juan Hou, En-Hou Han <i>South China University of Technology, China</i>
09:10—09:25	Impact of modification process on the microstructure and properties of Al-15Mg2Si alloy Xiaodong Gao , Dongfu Song, Dongyang Yang, Zhibo Zhang, Xiaofeng Guo*, Yuan Bo <i>Inner Mongolia University of Science and Technology, China</i>
09:25—09:40	Influence of temperature on hydrogen-induced damage behavior of Inconel 718 alloy Shuai Kong , Wancheng Zhou, Huijie Cheng, Tiwen Lu, Binhan Sun*, Xiancheng Zhang, Shan-Tung Tu <i>East China University of Science and Technology, China</i>
09:40—09:55	Ratcheting assessment of the catalyst layer in polymer electrolyte membrane fuel cells considering thermal-mechanical-humidity cycling Peishan Ding , Xiaotao Zheng*, Haofeng Chen, Shan-Tung Tu <i>Wuhan Institute of Technology, China</i>
10:10 – 10:30	Coffee & Break

Parallel session 3: Time-dependent failure (High temperature) I

//International Conference Hall B (国际宴会厅B)

Session chair: Sujun Wu (Beihang University, China)

08:30—08:55	<p>Keynote lecture Isotropic damage development in uniaxial tension creep for mod.9Cr-1Mo and super304H steels</p> <p>Masao Sakane <i>Ritsumeikan University, Japan</i></p>
08:55—09:10	<p>An improved physics-based creep damage model for lifetime prediction of reformer furnace tube</p> <p>Chengming Fuyang*, Jianming Gong, Jiabao Pan <i>Anhui Polytechnic University, China</i></p>
09:10—09:25	<p>Nanoindentation characterization on the creep porosity and damage mechanism of a single-crystal superalloy</p> <p>Zhiqiang Wang, Yuxuan Song, Zhiwei Dai, Zengliang Gao, Yi Ma, Weiya Jin*, Yanyao Jiang <i>Zhejiang University of Technology, China</i></p>
09:25—09:40	<p>Disordering of B2 phase in alloy 783 bolts after long-term service at 600°C in a power plant</p> <p>Bingbing Zhao, Shengzhi Li, Hongyuan Wen, Jiashi Zhou, Lanting Zhang* <i>Shanghai Jiao Tong University, China</i></p>
09:40—09:55	<p>Creep properties and life model of anisotropic Ni-based single crystal superalloys over a wide temperature range</p> <p>Shuning Gu*, Hangshan Gao, Zhixun Wen, Zhenwei Li, Zhufeng Yue, Chengjiang Zhang <i>Xi'an University of Science and Technology, China</i></p>
10:10 – 10:30	<p>Coffee & Break</p>

Parallel session 4: Multi-scale material testing, modelling and analysis I

//Garden Conference Room (花园厅)

Session chair: Gang Chen & Zhe Zhang (Tianjin University, China)

08:30—08:45	Strain-rate and size dependence of gradient lamellar nickel investigated by in-situ micropillar compression Yunfei Jia*, Yong Zhang , Zimeng Wang <i>East China University of Science and Technology, China</i>
08:45—09:00	Three-dimensional characterization and reconstruction of micropores within nickel-based single-crystal superalloys Jiapo Wang* , Menghao Zhang, Jianwei Liang, Yan Peng <i>Yanshan University, China</i>
09:00—09:15	A method for predicting uniaxial stress-strain of metals by instrumented indentation technique considering microstructure and constitutive model Yubiao Zhang , He Xue*, Zheng Wang, Shun Zhang <i>Xi'an University of Science and Technology, China</i>
09:15—09:30	Corrosion fatigue damage mechanism of high-strength aluminum alloy based on in situ three-dimensional tomography Ni Ao , Songquan Tang, Shengchuan Wu* <i>Southwest Jiaotong University, China</i>
09:30—09:45	Investigation of hydrogen-induced damage in ethylene propylene diene monomer rubber under high-pressure hydrogen environments Yanlei Huang , Chilou Zhou* <i>South China University of Technology, China</i>
10:10 – 10:30	Coffee & Break

Parallel session 5: Residual stress and deformation I

//Conference Room 3 (3号会议室)

Session chair: Yanhui Zhang (China Oil & Gas Pipeline Network Corporation (PipeChina), China)

08:30—08:55	<p>Keynote lecture The effect of laser induced residual stress on fatigue properties of titanium alloys</p> <p>Oleg Plekhov*, Anastasiya Izumova, Maria Bartolomei, Alexei Vshivkov, Elena Gachegova <i>Perm federal research center Ural Branch Russian Academy of sciences, Russia</i></p>
08:55—09:10	<p>Prediction of hardness and welding residual stress in type 316 stainless steel welded joints</p> <p>Suo Li*, Yoshihito Yamaguchi, Jinya Katsuyama, Yinsheng Li <i>Japan Atomic Energy Agency, Japan</i></p>
09:10—09:25	<p>Investigating the interplay between residual stress, microstructure, and tensile strength in SA508-3 steel welding joints</p> <p>Yu Wan*, Huining Wang, Wenchun Jiang <i>China University of Petroleum (East China), China</i></p>
09:25—09:40	<p>The influence of strain rate on the elastic-plastic deformation behavior and damage evolution of 7075 aluminum alloy</p> <p>Haonan Yu, Yun Zhou, Xiao Wu, Hao Peng* <i>Nanjing Tech University, China</i></p>
09:40—09:55	<p>Effect of process parameters on residual stress and thermal deformation in vacuum brazing of Inconel 617 plate core structures</p> <p>Jin ke Lv, Ke Wang* <i>Zhengzhou University, China</i></p>
10:10 – 10:30	<p>Coffee & Break</p>

Parallel session 6: International workshop on battery safety and reliability I

//Jinhua Conference Room A (锦华厅A)

Session chair: Weiling Luan (East China University of Science and Technology, China)

08:30—08:55	<p>Keynote lecture Pioneering lithium-ion battery innovation: the transformative power of AI</p> <p>Haofeng Chen*, Zixian Zhuang, Weiling Luan <i>East China University of Science and Technology, China</i></p>
08:55—09:20	<p>Keynote lecture Enhanced data-driven performance assessment of fuel cell electric buses utilising an improved hierarchical 2D MCMC approach</p> <p>Xinjie Yuan, Zhongjun Hou* <i>Shanghai Hydrogen Propulsion Technology Co., Ltd., China</i></p>
09:20—09:35	<p>Degradation mechanism of nickel-rich cathode materials during fast charging in different charging intervals</p> <p>Yiming Yao, Jiaxing Hu, Ying Chen, Hailong Li, Weiling Luan* <i>East China University of Science and Technology, China</i></p>
09:35—09:50	<p>Investigation of creep damage in solid oxide fuel cells with different flow channel geometries</p> <p>Qin Zhang, Bo An, Ke Wang* <i>Zhengzhou University, China</i></p>
09:50—10:05	<p>Experimental study and numerical modeling of thermal runaway in high-rate overcharged lithium-ion batteries: effects of low and high-temperature aging</p> <p>Le Tong, Senming Wu, Weiling Luan* <i>East China University of Science and Technology, China</i></p>
10:00 – 10:30	<p>Coffee & Break</p>

Parallel session 7: Aircraft mechanics and control I

//Jinhua Conference Room B (锦华厅B)

Session chair: Weidong Yang (Tongji University, China)

08:30—08:45	Panning binocular system: method and applications Shuo Wang, Jiemin Feng, Zhiling Su, Dongsheng Zhang* <i>Shanghai University, China</i>
08:45—09:00	Enhancing the adaptability of lightweight lattice materials to complex loading conditions through bio-inspiration and micro-inspiration Fan Yang*, Puhao Li, Peng Wang, Lingbo Li, Lingbo Li, Qingcheng Yang, Lihua Wang <i>Tongji University, China</i>
09:00—09:15	Ultrasonic characterization of diverse defects in thick composites with varying-angle fiber orientations Zhen Zhang*, Andong Cao, Fupeng Ni, Yan Li <i>Tongji University, China</i>
09:15—09:30	An analysis of resistance variation influence on the measurements reconstruction of a reduced sensors dual parallel-PMSMs system Ziyao Wang, Yi Wang, Tianyi Liu* <i>Tongji University, China</i>
09:30—09:45	A novel local to global (L2G) method for progressive fracture analysis of composite laminates Zhaoyang Ma <i>Shanghai University, China</i>
09:45—10:00	Nonlinear vibrations of rotating pretwisted composite Titanium-based blade reinforced by functionally graded graphene platelets subjected to aerodynamic and blade-casing rubbing forces Yueyong Chang <i>Beijing University of Technology, China</i>
10:00 – 10:30	Coffee & Break

Parallel session 8: Reliability-centered manufacturing II

//Conference Room 8 (8号会议室)

Session chair: Ke Wang (Zhengzhou University, China)

08:30—08:55	Keynote lecture Strain engineering of 2D materials for property tunability and IC integration Zhengfang Qian*, Pu Huang <i>Shenzhen University, China</i>
08:55—09:10	Fatigue life assessment of welded joints after water jet peening Yun Luo* <i>China University of Petroleum (East China), China</i>
09:10—09:25	Achieving grain refinement and enhanced mechanical properties in titanium produced by novel hybrid forging Huihui Xu, Xiurong Fang*, Yuanwang Mao, Hailun Liu, Lixin Qu, Qipeng Zhang, Shiyun Hu, Fuqiang Yang <i>Xi'an University of Science and Technology, China</i>
09:25—09:40	Microstructure control and corrosion mechanism of titanium/steel cold metal transition welded joints Jinghuan Chang, Jian-Feng Wen*, Rui Cao <i>East China University of Science and Technology, China</i>
09:40—09:55	A framework to establish multiaxial vibration fatigue criteria in the frequency domain through data-driven approach and its application Xianjun Pei* <i>Southeast University, China</i>
09:55—10:10	Flow field analysis and structural improvement of air-cushion belt conveyors Shuangchen Xue, Ke Wang*, Dongxing Song, Weijie Chen <i>Zhengzhou University, China</i>
10:10 – 10:30	Coffee & Break

Parallel session 9: Innovative non-destructive testing and monitoring techniques I

//Conference Room 2 (2号会议室)

Session chair: Jingwei Cheng (Hefei General Machinery Research Institute, China)

08:30—08:55	<p>Keynote lecture</p> <p>Ultrasonic detection and characterization of complex random rough cracks in safety-critical engineering components</p> <p>Fan Shi*, Zhengyu Wei, Zhengjun Wang, Stewart Haslinger <i>The Hong Kong University of Science and Technology, China</i></p>
08:55—09:10	<p>Intelligent bolt monitoring method using ultrasound technology</p> <p>Jiuhong Jia*, Yiqing Gu, Yue'e Wang, Shan-Tung Tu <i>East China University of Science and Technology, China</i></p>
09:10—09:25	<p>A model for elucidating the harmonic spectrum of SH0 guided wave in typical ferromagnetic materials</p> <p>Huan Wang, Xiucheng Liu, Bin Wu, Xiang Gao* <i>Beijing University of Technology, China</i></p>
09:25—09:40	<p>Research on long-life probe for pipeline in-pipe detector based on slotted ferromagnetic plate layer</p> <p>Jian Tang, Zhe Wang*, Jingwei Cheng, Rongbiao Wang, Shuhao Ma, Xiaokang Wan <i>Hefei General Machinery Research Institute Co., Ltd.</i></p>
09:40—09:55	<p>Nonlinear ultrasonic evaluation and localization of fatigue damage in nickel-based superalloys</p> <p>Jiajia Wang*, Zhixun Wen <i>Chang'an University, China</i></p>
10:10 – 10:30	<p>Coffee & Break</p>

Parallel session 10: Fluid-structure Interaction I

//Conference Room 9 (9号会议室)

Session chair: Guorui Zhu (Tianjin University, China)

08:30—08:55	Keynote lecture Research on Micro Heat Exchanger Based on Flow Boiling Heat Transfer Hongqiang Chen, Yonghai Zhang* , Jinjia Wei <i>Xi'an Jiaotong University, China</i>
08:55—09:10	Study on nonlinear flow-induced vibration behavior of magnetic tandem cylinders Bowen Tang , Jiawei Wang, Wei Tan* <i>Tianjin University, China</i>
09:10—09:25	Research on corrosion mechanisms and prediction methods for corrosion rates of elbows in hydrogenation units Lei Xu* , Zhichao Fan <i>Zhejiang University of Technology, China</i>
09:25—09:40	On the significance of local sweep-back angle in light weight design of grid fin Yuxin Liu , Mingliang Zhu* <i>East China University of Science and Technology, China</i>
09:40—09:55	Effect of temperature on fretting wear and corrosion of high-silicon T91 in the liquid lead-bismuth eutectic (LBE) Hui Chen , Meigui Yu, Guangzhao Wang, Wei Tan, Guorui Zhu* <i>Tianjin University, China</i>
09:55—10:10	Study on the coupling regimes of flow-induced vibration for the three tandem cylinders Yuxuan Cheng , Wenzhe Dong, Hongsheng Zhang, Wei Tan, Xiantao Fan, Kai Guo* <i>Yanshan University, China</i>
10:10 – 10:30	Coffee & Break

Parallel session 11: Student Paper Competition I

//Conference Room 10 (10号会议室)

Session chair: Yuh-Jin Chao (University of South Carolina, United States)

08:30—08:50	Tailoring mechanical property of austenitic stainless steel by texture control technique in laser beam powder bed fusion Guanhong Chen, Xiaowei Wang*, Jianming Gong <i>Nanjing Tech University, China</i>
08:50—09:10	Impact of different welding processes on the pneumatic bulge test at a high temperature: gas tungsten arc welding and laser beam welding Zijian Guo, Jin Shi, Jinghuan Chang, Jia-Xing Wang, Yun Zhou, Jian-Feng Wen*, Shan-Tung Tu <i>East China University of Science and Technology, China</i>
09:10—09:30	Fatigue strength analysis of AISI 304 under multiaxial non-proportional loading in high cycle region Gaurav Raj, Kohei Suzuki, Lei He, Takamoto Itoh* <i>Ritsumeikan University, Japan</i>
09:30—09:50	Enhancing hydrogen embrittlement resistance in 304 austenitic stainless steel welds through optimized heat treatment Jinxin Xue, Chilou Zhou*, Hao Wu <i>South China University of Technology, China</i>
10:00 – 10:30	Coffee & Break

Parallel session 12: Fatigue and fracture under extreme conditions II

//International Conference Hall A (国际宴会厅A)

Session chair: Xiaogang Wang (Hunan University, China)

10:30—10:55	Keynote lecture Predicting fatigue crack initiation behaviors at pre-fractured particles based on a 3D microstructure based model in high strength Al alloys Tongguang Zhai <i>Shangdong Jianzhu University, China</i>
10:55—11:10	Analysis of damage mechanisms and life evaluation models of ultra-low cycle fatigue using notched bar cyclic loading test Xinyu Ma, Yun-Jae Kim* <i>Korea University, South Korea</i>
11:10—11:25	Microstructure evolution and damage mechanisms of Inconel 718 superalloy after overloading under hybrid stress-strain controlled creep-fatigue loading Tianyu Zhang, Xiaowei Wang*, Jianming Gong, Shan-Tung Tu <i>Nanjing Tech University, China</i>
11:25—11:40	Fatigue failure analysis of notched materials considering cyclic soft-hardening effect Sujuan Guo*, Fan Ye, Jianping Tan, Xiancheng Zhang, Shan-Tung Tu <i>East China University of Science and Technology, China</i>
11:40—11:55	Ductile crack growth of high-graded pipeline steels in the presence of Lüders plateau Shengwen Tu*, Xin Liu, Fushun Ding, Guangxu Cheng <i>Xi'an Jiaotong University, China</i>
11:55—12:10	A Study on the Coalescence Modes and Coalescence Criterion of Double Cracks with Different Shapes Jie Yang*, Hongxia Liu, Xudong Zhang <i>University of Shanghai for Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 13: Structural integrity for advanced manufacturing

//Conference Room 1 (1号会议室)

Session chair: Zhenguo Sun (Special Equipment Safety Supervision Inspection Institute of Jiangsu Province, China)

10:30—10:55	Keynote lecture Structure integrity analysis of additive manufactured cabin door: design-manufacture-fatigue behavior Yu'e Ma <i>Northwestern Polytechnical University, China</i>
10:55—11:10	The effect of different build orientations on the electrochemical property of SLM 316L stainless steel Bowen Tan, Yuhui Huang*, Bo Li, Fu-Zhen Xuan, Shan-Tung Tu <i>East China University of Science and Technology, China</i>
11:10—11:25	Characterization of peel fracture properties of brazed joints using digital image correlation Yu Cao, Guoyan Zhou* <i>East China University of Science and Technology, China</i>
11:25—11:40	Experimental investigation and numerical modeling of damage mechanisms in composite aero-engine fan blade Chuang Zhang, Xiaoguang Yang* <i>Beihang University, China</i>
11:40—11:55	A thermo-chemo-mechanical model coupled oxidation and bi-diffusion at interfaces in thermal barrier coatings Junxiang Gao, Xiaofeng Guo*, Bo Yuan, Jianxin Wang <i>Inner Mongolia University of Science & Technology, China</i>
11:55—12:10	Temperature dependence of hydrogen embrittlement mechanisms in a medium entropy alloy Jingjing Zhou, Huijie Cheng, Ning Yao, Tiwen Lu, Binhao Sun*, XianCheng Zhang, ShanTung Tu <i>East China University of Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 14: Time-dependent failure (High temperature) II

// International Conference Hall B (国际宴会厅B)

Session chair: Bingjun Gao (Hebei University of Technology, China)

10:30—10:45	Explicit correlation of different multiaxial stress rupture criteria for creeping materials Kun Zhang, Jianping Tan* <i>East China University of Science and Technology, China</i>
10:45—11:00	Cyclic creep behavior and life assessment of AlCoCrFeNi_{2.1} eutectic high-entropy alloy at 800°C based on ductility exhaustion approach and strain energy density exhaustion mode Chuanyang Lu <i>Zhejiang University of Technology, China</i>
11:00—11:15	Study on the effect of type of welded joints on structural creep-fatigue interaction behavior Tiansheng Guan, Xiaoxiao Wang, Haofeng Chen* <i>East China University of Science and Technology, China</i>
11:15—11:30	Applications of inverse method in dealing with creep issues for metallic materials at high temperature Ming Li <i>Northwestern Polytechnical University, China</i>
11:30—11:45	Study of creep properties of P91 heat-resistant steel microstructure based on the crystal plasticity finite element method Xuyang Guo, Guoyan Zhou* <i>East China University of Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 15: Multi-scale material testing, modelling and analysis

II

//Garden Conference Room (花园厅)

Session chair: Haiyang Yu (Uppsala University, Sweden)

10:30—10:55	Keynote In-situ neutron diffraction study on lattice deformation behavior of Ti-2Al-2.5Zr at different stress states Gang Chen*, Haiyu Li <i>Tianjin University, China</i>
10:55—11:10	Anisotropy cyclic plasticity constitutive modelling for Ni-based single-crystal superalloys based on Kelvin decomposition Yuheng Yun, Yongsheng Fan*, Duoqi Shi, Tianxiao Sui, Xiaoguang Yang <i>Beihang University, China</i>
11:10—11:25	Study on the crack nucleation mechanism of Ti-2Al-2.5Zr alloy under different stress amplitudes Shengkun Wang*, Wenchun Jiang, Gang Chen <i>China University of Petroleum (East China), China</i>
11:25—11:40	A modified creep life prediction method of P92 steel based on the nanoindentation characterization Ting Yu, Hezhan Dong, Zengliang Gao, Zhangming Jin, Weiya Jin, Yuebing Li, Zhihui Cai, Yuxuan Song* <i>Zhejiang University of Technology, China</i>
11:40—11:55	Coarse-grained DEM simulation of flake particle flow in a rotating drum: A multi-level study Lei Xu*, Zhichao Fan <i>Zhejiang University of Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 16: Residual stress and deformation II

//Conference Room 3 (3号会议室)

Session chair: Guiyi Wu (Centre of Excellence for Advanced Materials, China)

10:30—10:55	Keynote lecture Advancements in neutron diffraction for non-destructive stress analysis at ISIS Neutron and Muon Source Tung Lik Lee <i>STFC-ISIS Neutron and Muon Source, UK</i>
10:55—11:20	Keynote lecture Structural integrity assessment of long-distance oil and gas transmission pipelines Yanhui Zhang* <i>China Oil & Gas Pipeline Network Corporation (PipeChina), China</i>
11:20—11:35	The application and status of Engineering Material Diffractometer (EMD) Xiaohu Li* , Chao Ding, Wenli Song, Liang Zhou, Wenting Du <i>China Spallation Neutron Source, China</i>
11:35—11:50	Influence of residual stress on the tensile property calculations in depth-sensing spherical indentation tests Guanghua Sun , Wenchun Jiang*, Bin Yang, Wei Peng, Xiaoming Shao <i>China University of Petroleum (East China), China</i>
11:50—12:05	A Study of fatigue property enhancement of 1045 steel processed by surface mechanical rolling treatment with an emphasis on residual stress influence Linye Zhang , Yixi Wang, Yuxuan Song*, Xiaogui Wang, Shuiqing Zhou, Weiya Jin, Zengliang Gao, Yanyao Jiang <i>Zhejiang University of Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 17: International workshop on battery safety and reliability II

//Jinhua Conference Room A (锦华厅A)

Session chair: Haofeng Chen (East China University of Science and Technology, China)

10:30—10:55	Keynote lecture Enhancing longevity and safety of lithium-ion batteries: A lifecycle approach Weiling Luan <i>East China University of Science and Technology, China</i>
10:55—11:20	Keynote lecture Preparation and application of biomass-based advanced energy storage carbon materials Kang Sun <i>Institute of Chemical Industry of Forest Products, CAF, Nanjing, China</i>
11:20—11:35	University-enterprise collaboration characteristics: research on state-of-health estimation of lithium-ion batteries Liping Huo, Weiling Luan* <i>East China University of Science and Technology, China</i>
11:35—11:50	Polymerized ionic liquid network with encapsulated ionic liquid tailored for high-temperature lithium metal battery Jiaqi Huang, Jiajia Li, Haiman Hu, Xiaoyan Ji* <i>Luleå University of Technology, Sweden</i>
11:50—12:05	Effect of localized compression on lithium plating and capacity fade of lithium-ion pouch batteries Yan Gao, Ying Chen, Weiling Luan* <i>East China University of Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 18: Aircraft mechanics and control II

//Jinhua Conference Room B (锦华厅B)

Session chair: Fan Yang (Tongji University, China)

10:30—10:45	Process-dependent multiscale modeling for laser-assisted 3D printing of continuous fiber-reinforced composites with enhanced hierarchical interfaces Weidong Yang <i>Tongji University, China</i>
10:45—11:00	Nonlinear dynamic responses of variable-thickness graphene-reinforced porous aluminum-based sandwich plate with MFC and delay effects Han Li, Wei Zhang* <i>Beijing University of Technology, China</i>
11:00—11:15	Free vibration and dynamic snap-through of the piezoelectric bistable asymmetric composite laminated cantilever plates under hygroscopic effects Yandan Jiang* <i>Beijing University of Technology, China</i>
11:15—11:30	Mechanical modeling and mechanism analysis of bistable mechanical metamaterial based on cosine beams Yicheng Chen <i>Beijing University of Technology, China</i>
11:30—11:45	3D printed bio-inspired self-similar structures for energy absorption Yonglin Chen, Weidong Yang* <i>Tongji University, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 19: AI for materials and structural Integrity I

//Conference Room 8 (8号会议室)

Session chair: Yunfei Jia (East China University of Science and Technology, China), Shuai Chen (Shanghai University, China)

10:30—10:55	Keynote lecture Machine learning-assisted prediction of hot deformation behaviors in alloys Jie Xiong*, Tong-Yi Zhang <i>Shanghai University, China</i>
10:55—11:20	Keynote lecture SolGPT: a large language model encoding expertise in failure analysis for reliability-centered manufacturing Na Luo*, Jiyang Chen, Weize Wang, Shan-Tung Tu <i>East China University of Science and Technology, Chi</i>
11:20—11:35	Fatigue behavior of an additively manufactured alloy based on machine learning Wenqi Liu, Zibiao Wang, Tao Shi, Gui'an Qian* <i>Institute of Mechanics, Chinese Academy of Sciences, China</i>
11:35—11:50	Machine learning potential-assisted design of thermodynamic properties of NbMoTaW refractory high-entropy alloy Jian Zhang, Shuai Chen, Gang Zhang* <i>Harbin Institute of Technology, China</i>
11:50—12:05	Machine learning drive protective nitride coating design for Ti blade in aero engine Zhaohe Gao <i>Shanghai University, China</i>
12:05—12:20	Unraveling the mechanism of ductility enhancement in W-Ta alloys with machine-learning interatomic potentials Haoyu Hu, Chao Zhang*, Rui Yue, Biao Hu, Shuai Chen <i>Anhui University of Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 20: Innovative non-destructive testing and monitoring techniques II

//Conference Room 2 (2号会议室)

Session chair: Weiqiang Wang (Shandong University, China)

10:30—10:45	Prediction and monitoring of structural cracks: from 3D damage tolerance design to 3D printed damage-monitoring sensors Peishi Yu*, Junhua Zhao <i>Jiangnan University, China</i>
10:45—11:00	Early assessment of low-cycle fatigue life in stainless steel using mechanoresponsive luminogen Zhe Zhang*, Zhengxu Shao, Gang Chen, Xu Chen <i>Tianjin University, China</i>
11:00—11:15	Measurement of tensile plastic deformation of Q235 steel: A novel NDT method Sa Yang, Yong Guo, Xuan Wang*, Qingyuan Guo, Weifei Niu <i>Tianjin Special Equipment Inspection Institute, China</i>
11:15—11:30	Comparison of three time-of-flight measurement methods in sound velocity measurements Weibao Shen, Guangzhen Xing, Longbiao He*, Haijiang Zhu <i>National Institute of Metrology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 21: Fluid-structure Interaction II

//Conference Room 9 (9号会议室)

Session chair: Yonghai Zhang (Xi'an Jiaotong University, China)

10:30—10:55	Keynote lecture Investigation on the fretting wear by the power spectrum density of fluid excitation force Guorui Zhu*, Wei Tan <i>Tianjin University, China</i>
10:55—11:10	Research on the vibration and response of pipeline systems with gas-liquid media under transient pressure excitation Jixiao Wang*, Haoran Li, Zhenbang Gong, Wei Tan <i>Tianjin University, China</i>
11:10—11:25	Numerical study of temperature fluctuations induced by coaxial-jet and hexagonal-jet in the reactor core outlet region Linghao Liu, Guoyan Zhou* <i>East China University of Science and Technology, China</i>
11:25—11:40	Structural optimization of air-ribbed tents: to improve the load-bearing capacity Ying Liu*, Shengchao Liang <i>Beijing University of Civil Engineering and Architecture, China</i>
11:40—11:55	A new designed reciprocating plate column based on the electro-permanent magnet technology Deqiang Zhang, Ting Cheng, Meqi Yu, Hongsheng Zhang*, Kai Guo <i>Yanshan University, China</i>
11:55—12:10	Damage tolerance assessment and sensitivity analysis of long flexible wind turbine blades under fluid-structure interaction with considering parameter uncertainties Haodong Liu, Yuhao Zhang, Jinlong Liang, Zhenjiang Shao, Zheng Liu* <i>Guangzhou University, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 22: Student Paper Competition II

//Conference Room 10 (10号会议室)

Session chair: Yuh-Jin Chao (University of South Carolina, United States)

10:30—10:50	Thermomechanical fatigue damage and life prediction of 316H Stainless Steel Jingyu Yang, Bingbing Li*, Xu Chen <i>Tianjin University, China</i>
10:50—11:10	Interactive behavior and damage evolution of 316H austenitic stainless steel under creep-fatigue conditions Chenwei Zhang, Chong Zhen, Fanhao Yue, Lijia Luo, Shiyi Bao* <i>Zhejiang University of Technology, China</i>
11:10—11:30	Investigation of stress corrosion cracking propagation path and mechanical field evolution at the tip of a growing crack in dissimilar metal welded joints Zheng Wang, He Xue*, Rongxin Wang, Jun Wu, Yubiao Zhang <i>Xi'an University of Science and Technology, China</i>
11:30—11:50	Neural network-assisted creep-fatigue reliability evaluation of plate-fin heat exchanger Qi Chen, Haofeng Chen*, Xiaoxiao Wang <i>East China University of Science and Technology, China</i>
12:10 – 13:30	Lunch & Break

Parallel session 23: Fatigue and fracture under extreme conditions III

//International Conference Hall A (国际宴会厅A)

Session chair: Faxin Li (Peking University, China)

13:30—13:55	Keynote Effect of overheating on the yield strength and creep life of single crystal superalloy DD6 Ruoyao Cui, Dongxing Pan, Xiaogang Wang* , Zhicheng Liu, Xiaoming Shan, Dong Mi, Chao Jiang <i>Hunan University, China</i>
13:55—14:10	Anti-fretting fatigue method of nickel-based single crystal turbine blade tenon Shouyi Sun <i>Northwestern Polytechnical University, China</i>
14:10—14:25	Study on rolling contact fatigue of high carbon steel with different levels of retained austenite Jinhua Chen, Yibo Wang, Shuxin Li*, Siyuan Lu, Junjun Han <i>Ningbo University, China</i>
14:25—14:40	Life prediction and constitutive modelling of multiaxial low cycle fatigue behaviour for type 316L stainless steel at elevated temperature Fei Liang , Wei Zhang*, Changyu Zhou <i>Nanjing Tech University, China</i>
14:40—14:55	Analysis of residual fatigue life of steam generator in the Light Water reactor environment based on macroscopic parameters Rehmat Bashir* , He Xue, Ali Soban, Nousheen Naz, Rafia Azhar, Mahnoor Shafqat, Zheng Wang <i>Xi'an University of Science and Technology, China</i>
14:55—15:10	A high cycle fatigue life estimation method considering the HCF-creep interaction using Physics-informed machine learning Guo Li , Jichao Tian, Zhenlei Li*, Shuiting Ding <i>Beihang University, China</i>
15:15—15:45	Coffee & Break

Parallel session 24: Additive manufacturing I

//Conference Room 1 (1号会议室)

Session chair: Ming-Liang Zhu (East China University of Science and Technology, China)

13:30—13:55	Keynote lecture Applications of composite strength theory to predict the failure strengths of additively manufactured polymers Luoyu Xu <i>Ningbo University, China</i>
13:55—14:20	Keynote lecture Critical physics informed fatigue life prediction of 3D printed AlSi10Mg alloys with mass defects Yanan Hu, Junjiang Liu, Shengchuan Wu* , Guozheng Kang <i>Southwest Jiaotong University, China</i>
14:20-14:35	Path-dependent progressive failure modelling for 3D-printed continuous fibre-reinforced composite structures Yuan Chen* , Zhi Han, Lin Ye <i>Southern University of Science and Technology, China</i>
14:35—14:50	Study on small crack growth behavior of laser powder bed fused Ti6Al4V alloy Liangliang Wu , Huichen Yu* <i>Beijing Institute of Aeronautical Materials, China</i>
14:50—15:05	Microstructural characteristics of heterogeneous interfaces in Inconel 718 alloy rebuilt by selective laser melting during tensile deformation Menglei Wang , Xiaoguang Yang, Bin Li, Duoqi Shi, Guolei Miao, Shuangquan Guo, Yongsheng Fan* <i>Beihang University, China</i>
15:05—15:20	Evolution of pores and its effect on the tensile properties of LPBF Invar36 with different energy density Zheyu Yang , Zhenan Zhao* <i>Zhejiang University, China</i>
15:15—15:45	Coffee & Break

Parallel session 25: Time-dependent failure (High temperature) III

//International Conference Hall B (国际宴会厅B)

Session chair: Weiwei Yu (Suzhou Nuclear Power Research Institute, China)

13:30—13:45	A bilinear damage interaction model considering mean stress effect at elevated temperature Canyang Hou, Shuiting Ding, Guo Li, Zhenlei Li* <i>Beihang University, Beijing, China</i>
13:45—14:00	Probabilistic creep life assessment of high-temperature superheater outlet header based on data-driven Zhen Zhang, Xiaowei wang*, Jianming Gong <i>Nanjing Tech University, China</i>
14:00—14:15	Determining multiaxial stress rupture criteria based on skeletal point stress for a titanium alloy Jie Su, Jianping Tan* <i>East China University of Science and Technology, China</i>
14:15—14:30	Evaluation of multiaxial creep properties of AISI 304 using pure torsion and tension-torsion creep testing machines Ryohei Ouchi, Shunki Hasegawa, Terumasa Maekawa, Lei He, Noritake Hiyoshi, Takamoto Itoh*, Masao Sakane <i>Ritsumeikan University, Japan</i>
14:30—14:45	Study on the microstructure and properties of inertia friction welded joints of nickel-based high-temperature alloys Hang Liang*, Lei Cui, Yongchang Liu, Rui Zhan, Zixin Zhang <i>Tianjin University, China</i>
14:45—15:00	Creep fatigue analysis of hydrogenation reactor based on linear matching method Xiaoxiang Bai, Chenfei Wei, Xiaoxiao Wang, Haofeng Chen* <i>East China University of Science and Technology, China</i>
15:00—15:15	Oxidation and failure behavior of Cr coating on Zr alloy in 1000-1400°C steam environment and model development Dong Wang, Yapei Zhang, Kai Lu*, Shihao Wu, Xiaocheng Wu <i>Fuzhou University, China</i>
15:15—15:45	Coffee & Break

Parallel session 26: Multi-scale material testing, modelling and analysis

III

//Garden Conference Room (花园厅)

Session chair: Zhe Zhang (Tianjin University, China)

13:30—13:45	Residual stress patterns in nanoindentation simulated by discrete dislocation dynamics Haiyang Yu* <i>Uppsala University, Sweden</i>
13:45—14:00	Intergranular fracture of bcc Fe: mathematical modelling and atomistic simulations Kai Zhao*, Yu Ding, Haiyang Yu, Jianying He, Zhiliang Zhang <i>Jiangnan University, China</i>
14:00—14:15	Application of Machine Learning to Describe the Equation of State and Path-Dependent Plasticity of Aluminum Evgenii V. Fomin*, Alexander E. Mayer <i>Chelyabinsk State University, Russia</i>
14:15—14:30	Hybrid-Density Functional Calculations of physical properties of Cu₂P₂O₇ Xiaoyong Yang, Ping Zhang, Pavel Korzhavyi* <i>KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden</i>
14:30—14:45	Characteristics of the local mechanical behavior of steam turbine rotor steel welded joints and its finite-element analysis Zijian Pan, Min Zhang, Sujuan Guo* <i>East China University of Science and Technology, China</i>
14:45—15:00	Folding mechanics of a bistable composite tape-spring Bing Wang, Chenmin Zhao, Chenlong Guan, Shuncong Zhong* <i>Fuzhou University, China</i>
15:00—15:15	Mechanical performance testing and characterization of 34CrMo4 steel for high-pressure hydrogen storage cylinders under electrochemical Hydrogen Charging Yan Li, Miaokun Yang, Wenhong Cao, Yuebing Li* <i>Zhejiang University of Technology, China</i>
15:15—15:45	Coffee & Break

Parallel session 27: Structural health monitoring and life extension

//Conference Room 3 (3号会议室)

Session chair: Yang Zheng (China Special Equipment Inspection and Research Institute, China), Shifeng Guo (Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China)

13:30—13:45	In situ monitoring of high-temperature creep damage in CrMoV high-strength structural steel using acoustic emission Mengyu Chai*, Hao Li <i>Xi'an Jiaotong University, China</i>
13:45—14:00	Acoustic emission monitoring of fatigue crack growth in Hadfield steel Shengrun Shi*, Guiyi Wu, Shuyan Zhang <i>Centre of Excellence for Advanced Materials, China</i>
14:00—14:15	Fault diagnosis of planetary gearbox based on Gram angle field and attention mechanism Xueping Ding*, Fengfeng Bie, Qianqian Li, Yuting Zhang, Xinyue Huang <i>Changzhou University, China</i>
14:15—14:30	Shape monitoring of on-orbit antenna structures with strain measurements from single surface Tianxiang Huang, Shenfang Yuan*, Jian Chen <i>Nanjing University of Aeronautics and Astronautics, China</i>
14:30—14:45	Reduced order peridynamics for failure analysis of high-temperature components Han Dong, Weizhe Wang*, Yingzheng Liu <i>Shanghai Jiao Tong University, China</i>
14:45—15:00	Dynamic fragility-based accident expansion situation analysis for earthquake-triggered fire domino scenarios Jinkun Men, Guohua Chen*, Yimeng Zhao <i>South China University of Technology, China</i>
15:00—15:15	Thermal coupling and remaining life analysis of motorcycle disc brakes Jinchen Cai <i>Zhejiang University of Technology, China</i>
15:15—15:45	Coffee & Break

Parallel session 28: International workshop on battery safety and reliability III

//Jinhua Conference Room A (锦华厅A)

Session chair: Xinjie Yuan (Shanghai Hydrogen Propulsion Technology Co., Ltd.)

13:30—13:55	<p>Keynote lecture Cell selection strategy and system thermal propagation prevent strategy for power battery</p> <p>Yang Bai <i>Pan Asia Technical Automotive Center Co., Ltd. Shanghai, China</i></p>
13:55—14:20	<p>Keynote lecture Thermal runaway diffusion control of lithium battery pack</p> <p>Zuosong Shen <i>Suzhou Phylion Battery Co., Ltd., China</i></p>
14:20—14:35	<p>Research on the sealing performance of proton exchange membrane fuel cells</p> <p>Yanfeng Xing <i>Shanghai University of Engineering Science, China</i></p>
14:35—14:50	<p>Structural optimization of silicon carbon negative electrode materials based on failure modes</p> <p>Haoyu Ding, Haofeng Chen* <i>East China University of Science and Technology, China</i></p>
14:50—15:05	<p>Molecular dynamics analysis of the effect mechanism of Ca²⁺-contaminant concentrations on proton exchange membrane transport performance</p> <p>Yihuizi Li, jun Chu, yanqiang Wei, hongtai Li, qiong Hou, jinzhu Tan* <i>Nanjing Tech University, China</i></p>
15:05—15:20	<p>State of health estimation of lithium-ion battery aging process based on fusion of feature engineering and time-frequency characteristics</p> <p>Changzheng Sun, Zixian Zhuang, Weiling Luan* <i>East China University of Science and Technology, China</i></p>
15:15—15:45	<p>Coffee & Break</p>

Parallel session 29: Aircraft mechanics and control III

//Jinhua Conference Room B (锦华厅B)

Session chair: Zhen Zhang (Tongji University, China)

13:30—13:45	Resonant responses and double-parameter multi-pulse chaotic dynamics of FG-GP reinforced rotating pre-twisted blade under combined transverse aerodynamic force and parametric excitations Yingzi Lian*, Wei Zhang, Yufei Zhang <i>Beijing University of Technology, China</i>
13:45—14:00	A predefined-time robust formation controller for Multi-UAV systems via sliding mode scheme with neural network Yunli Zhang, Hongsheng Sha, Runlong Peng, Nan Li, Zhonghua Miao, Jin Zhou* <i>Shanghai University, China</i>
14:00—14:15	Deep learning-based semantic segmentation for microstructure reconstruction, crack propagation and fractographic identification Peng Zhang, Keke Tang* <i>Tongji University, China</i>
14:15—14:30	The effect of hydrogen on the susceptibility of 7050 aluminum alloy to stress corrosion cracking Qiang Zhang, Yuhui Huang*, Shan-Tung Tu <i>East China University of Science and Technology, China</i>
15:15 – 15:45	Coffee & Break

Parallel session 30: AI for materials and structural integrity II

//Conference Room 8 (8号会议室)

Session chair: Yuebing Li (Zhejiang University of Technology, China)

13:30—13:55	<p>Keynote lecture Damping characterisation of composite materials systems in wind turbine blades: enhanced EMA approach</p> <p>Euan Stuart Brough, David Nash*, Abbas Mehrad Kazimi Amiri <i>University of Strathclyde, UK</i></p>
13:55—14:10	<p>A unified data-driven approach for ratcheting deformation of 316LN stainless steel at elevated temperatures</p> <p>Zhen Yu, Xingyue Sun*, Xu Chen <i>Tianjin University, China</i></p>
14:10—14:25	<p>Probabilistic damage assessment approach under creep-fatigue-oxidation based on hybrid-driven paradigm</p> <p>Run-Zi Wang <i>Tohoku University, Japan</i></p>
14:25—14:40	<p>A multi-fidelity physics-informed machine learning framework for probabilistic fatigue life assessment</p> <p>Lanyi Wang, Xi Deng, Xing Zhang, Changqi Luo, Shun-peng Zhu* <i>University of Electronic Science and Technology, China</i></p>
14:40—14:55	<p>Fatigue analysis of high temperature blade strength based on POD reduced order model</p> <p>Chaohui Huang, Weizhe Wang*, Yingzheng Liu <i>Shanghai Jiao Tong University, China</i></p>
14:55—15:10	<p>Uniaxial and multiaxial fatigue life estimation by symbolic regression</p> <p>Weiwen Cao, Xingyue Sun*, Xu Chen <i>Tianjin University, China</i></p>
15:15—15:45	<p>Coffee & Break</p>

Parallel session 31: Design and assessment codes and standards

//Conference Room 2 (2号会议室)

Session chair: Wu Xu (Shanghai Jiao Tong University, China)

13:30—13:45	Stress intensity factors of RPV nozzle corner crack using weight function complex Taylor series expansion method Yifan Fan, Ting Jin, Yuebing Li* <i>Zhejiang University of Technology, China</i>
13:45—14:00	The slice synthesis weight function method for 3D cracks: recent progress, software and applications Wu Xu*, Xueren Wu <i>Shanghai Jiao Tong University, China</i>
14:00—14:15	Shakedown and ratchet analysis of pipeline with inner slots Chenfei Wei, Haofeng Chen* <i>East China University of Science and Technology, China</i>
14:15—14:30	Estimation method of maximum stress at creep steady stage based on stress classification theory Cheng Gong, Lizhuo Gong, Xiaotao Zheng* <i>Wuhan Institute of Technology, China</i>
14:30—14:45	Comparison of destructive and non-destructive fracture toughness measurement for Q235 steel butt-welded joint Yao Li*, Tong Jiang, Fulin Zhang, Zhiwei Zhang, Guozhang Chen, Haoxu Yun, Chi Peng, Qulong Ding, Chaowei Hao, Ling Li <i>Xi'an University of Architecture and Technology, China</i>
15:15—15:45	Coffee & Break

Parallel session 32: Risk informed structural integrity assessment I

//Conference Room 9 (9号会议室)

Session chair: Yinsheng Li (Sanmen Nuclear Power Co. Ltd., China)

13:30—13:55	<p>Keynote lecture PFM Analysis of a HTGR Reactor Pressure Vessel under a Typical Cooling Transient</p> <p>Bowen Li, Heng Peng, Haitao Wang*, Yanhua Zheng, Zhengming Zhang, Li Shi <i>Tsinghua University, China</i></p>
13:55—14:10	<p>Development of the on-line SIA system for the primary loop pipeline of NPPs based on DFM and PFM</p> <p>Mingya Chen*, Fangjie Shi, Changjin Geng, Weiwei Yu <i>Suzhou Nuclear Power Research Institute, China</i></p>
14:10—14:25	<p>Guideline on probabilistic fracture mechanics analysis for Japanese reactor pressure vessels</p> <p>Jinya Katsuyama*, Yoshihito Yamaguchi, Hisashi Takamizawa <i>Japan Atomic Energy Agency, Japan</i></p>
14:25—14:40	<p>Probabilistic fracture mechanics analysis and inspection optimization for pressurized water reactor main piping weld</p> <p>Zhenshun Liu, Xin Zeng, Xinghua Li, Jianping Tan, Xiangyuan Zheng, Changjun Liu* <i>East China University of Science and Technology, China</i></p>
14:40—14:55	<p>Probabilistic fracture mechanics methodology for reactor pressure vessel: systematic review and future prospects</p> <p>Kai Lu*, Wangling Fu, Yupeng Cao, Jun Pan, Yinsheng Li <i>Fuzhou University, China</i></p>
14:55—15:10	<p>Probabilistic fracture mechanics code development and verification for vessels and piping in nuclear power plants</p> <p>Yuebing Li *, Yu Wang <i>Zhejiang University of Technology, China</i></p>
15:15—15:45	<p>Coffee & Break</p>

Parallel session 33: Student Paper Competition III

//Conference Room 10 (10号会议室)

Session chair: Yuh-Jin Chao (University of South Carolina, United States)

13:30—13:50	Mean strain effects on low cycle fatigue under multiaxial non-proportional random loading Yuchen Wang, Le Xu, Lei He, Shoto Yoshikawa, Keisuke Yamashita, Shan-Tung Tu, Takamoto Itoh* <i>Ritsumeikan University, Japan</i>
13:50—14:10	Comparison study of small punch test, hydraulic bulge test and uniaxial tensile test for CrMo steel Haoran Ding, Jian Peng*, Dongya Lu <i>Changzhou University, China</i>
14:10—14:30	Impact fatigue life prediction and failure mechanism investigation of 40Cr under impact load by simulation and experimental methods Kaifa Lin, Yizhan Fu, Zhizhuo Zhang, Mengchuang Zhang*, Zhiping Yin <i>Northwestern Polytechnical University, China</i>
14:30—14:50	Study on the constitutive modelling of 316L under isothermal fatigue and thermo-mechanical fatigue loading conditions Qiaofa Yang, Wei Zhang*, Peng Yin, Changyu Zhou <i>Nanjing Tech University, China</i>
14:50—15:15	Panel discussion Student Competition Panel members
15:15—15:45	Coffee & Break

Parallel session 34: Fatigue and fracture under extreme conditions IV

//International Conference Hall A (国际宴会厅A)

Session chair: Xiang Guo (Tianjin University, China)

15:45—16:00	Keynote lecture Monitoring and quantification of ultrasonic fatigue damage in metals based on internal friction measurement Faxin Li <i>Peking University, China</i>
16:00—16:15	Effect of in-situ hydrogen charging on high-cycle fatigue strength of AISI 316L steel Weijie Wu, Chenyu Zhao, Jianming Gong* <i>Nanjing Tech University, China</i>
16:15—16:30	Study on the effect of stress concentration on hydrogen induced fracture behavior of 304 steel Xin Ting Miao*, Jinbo Zhang, Ping Tao <i>Changzhou University, China</i>
16:30—16:45	Enhancement of Hydrogen Pressure Fatigue Testing Method Using Surface Pressure Loading Approach Tatsuya Nishimura, Lei He, Takamoto Itoh*, Michio Hori <i>Ritsumeikan University, Japan</i>
16:45—17:00	The pre-corrosion fatigue behavior of 321 steel coated by laser additively manufactured FeCoNiCrMn high-entropy alloy Wei Li*, Shengnan Hu, Guowei Bo, Cong Li, Jian Chen, Libo Zhou, Wei Chen <i>Changsha University of Science & Technology, China</i>
17:00—17:15	Defect sensitivity and high-cycle fatigue resistance of arc-welded 2219 aluminum alloy at 77 kelvin Wentao He, Yanan Hu*, Shengchuan Wu <i>Southwest Jiaotong University, China</i>
17:15—17:30	Investigation of Typhoon's Impact to the Structural Integrity of Floating Offshore Wind Turbine Blade Yue Song, Caiyu Wang, Dewei Cao, Ailin Xie, Shu Dai* <i>Shanghai Investigation, Design, and Research Institute Co.,Ltd., China</i>
17:30—17:45	Three-dimensional T-stress solutions for compact tension specimens with side grooves: numerical simulation and experimental study Kai Lu*, Wangling Fu, Sihua Huang, Xi Liu, Jiaqing Li, Jingwei Zhang, Yupeng Cao <i>Fuzhou University, China</i>

Parallel session 35: Additive manufacturing II

//Conference Room 1 (1号会议室)

Session chair: Cong Li (Changsha University of Science & Technology, China)

15:45—16:10	Keynote lecture Defect detection in multi-material additively manufactured parts using ultrasonic technique Jing Rao <i>Beihang University, China</i>
16:10—16:35	Keynote lecture Mechanical behavior of titanium lattice structures fabricated by powder bed fusion Lai-Chang Zhang <i>Edith Cowan University, Australia</i>
16:35—16:50	Balanced strength-ductility characteristics of direct energy deposited SS 316L/IN625 multi-material structure Shuyao Zhang, Xu Chen* <i>Tianjin University, China</i>
16:50—17:05	Mechanical properties and cracking behavior of low-temperature gaseous carburized Additive Manufacturing 316L austenitic stainless steel Zhenxu Zhao, Yawei Peng, Jianming Gong* <i>Nanjing Tech University, China</i>
17:05—17:20	Mechanical behavior of 3D-printed Al-Mg-Sc alloy Shaohua Yan <i>Shenzhen University, China</i>
17:20—17:35	Fatigue life prediction of selective laser melted titanium alloy based on a machine learning method Yao Liu, Xiangxi Gao, Wei Xu, Huichen Yu* <i>AECC Beijing Institute of Aeronautical Materials, China</i>
17:35—17:50	Ni-base superalloys processed by powder-bed-fusion additive manufacturing Hui Peng, Rui Bao, Bo Chen* <i>Beihang University, China</i>
17:50—18:05	Parameter optimization and tensile properties of additive manufactured lattice structures of Ti6Al4V Zhuang Gao, Ming-Liang Zhu*, Fu-Zhen Xuan <i>East China University of Science and Technology, China</i>

Parallel session 36: Time-dependent failure (Fatigue) IV

//International Conference Hall B (国际宴会厅B)

Session chair: Wei Li (Changsha University of Science & Technology, China)

15:45—16:00	Enhanced high-cycle fatigue resistance of 304 austenitic stainless steel through cryogenic cyclic plastic strengthening Zongchi Wang, Jingtai Yu, Xu Chen* <i>Tianjin University, China</i>
16:00—16:15	High cycle fatigue life prediction model for Ni-based single crystal superalloys with film cooling holes Yamin Zhang*, Xiaolu Wang, Xinzhe Zhang, Jiajia Wang, Xi Ren, Xiaoshuai Wang <i>Zhengzhou University of Aeronautics, China</i>
16:15—16:30	In-plane biaxial low-cycle dwell fatigue behavior of CP-Ti based on DIC method Hongyun Lin, Le Chang*, Zhuowu Wang, Qi Pei, Changyu Zhou <i>Nanjing Tech University, China</i>
16:30—16:45	Experimental and modeling investigation of the thermal shock behavior of TiC-based self-healing coatings on AISI 321 stainless steel Wei Li*, Chipeng Zhang, Guowei Bo, Cong Li, Jian Chen, Libo Zhou, Wei Chen <i>Changsha University of Science & Technology, China</i>
16:45—17:00	In-situ experimental investigation of the small fatigue crack behavior in CP-Ti: the influence of loading parameters and directions Jingwei Li, Le Chang*, Dalin Zheng, Zhuowu Wang, Wei Zhang, Yu Ji, Changyu Zhou <i>Nanjing Tech University, China</i>
17:00—17:15	Crack closure effect on FCG behavior in TA15 titanium alloy with varied spatial orientations Haoruo Chen, Pengfei Jin, Yueyin Shen, Zheng Liu, Shouwen Shi, Xu Chen* <i>Tianjin University, China</i>
17:15—17:30	Analysis of fatigue damage induced by thermal striping based on frequency domain method Xu Hai, Guoyan Zhou*, Weitong Zhou <i>East China University of Science and Technology, China</i>
17:30—17:45	Static and dynamic strain aging behavior in Ti-2Al-2.5Zr alloy: implications for fatigue performance Jingtai Yu, Mengqi Li, Gang Chen* <i>Tianjin University, China</i>

Parallel session 37: Small specimen testing methods of materials

//Conference Room 3 (3号会议室)

Session chair: Lixun Cai (Southwest Jiaotong University, China)

15:45—16:10	Keynote lecture Fatigue strength and crack propagation assessment using miniaturized disk-type specimen Shin-ichi Komazaki* , Kotaro Murakami, Shudai Haraguchi, Masanori Tsuruzono, Masayuki Kamaya, Chiaki Hisaka, Akito Nitta <i>Kagoshima University, Japan</i>
16:10—16:35	Keynote lecture Multiaxial creep rupture lifetime evaluation for super 304H with weld-type miniature cruciform specimen Noritake Hiyoshi* , Shengde Zhang <i>University of Fukui, Japan</i>
16:35—16:50	A new small punch test method to predict tensile properties of steels: Representative stress-strain method Feng Yu <i>Ningbo University of Technology, China</i>
16:50—17:05	An adaptive spherical indentation test on mechanical property predictions of long-term serviced P91 steels Tairui Zhang* , Xin Ma, Zhiqiang Ge <i>Southeast University, China</i>
17:05—17:20	Tertiary creep deformation and damage evolution analysis during small punch creep process Changjian Li , Jianwen Zhang, Sisheng Yang*, Xiang Ling <i>Nanjing Tech University, China</i>
17:20—17:35	Characterizing material properties after cold working through small punch testing and finite element inverse analysis Shuai Wang* , Bin Wang, Guiyi Wu, Yubiao Zhang, Xiaoyan Gong, Zhaohui Yu, He Xue <i>Xi'an University of Science and Technology, China</i>
17:35—17:50	Hydrogen embrittlement sensitivity study of 347L based on in-situ small punch test Jingwei Zhang* , Yaoming Ding, Zhicheng Li, Kai Lu, Jiaqing Li <i>Fuzhou university, China</i>
17:50—18:05	A new U-shaped yoke method for measuring soft magnetic materials and its influencing factors Mingxing Cao , Zhigao Zhang*, Jian He, Ruifen Hou, Wenjie Gong <i>National Institute of Metrology, China, China</i>
18:05-18:20	A study on the influence of indenter form on the results of small punch test of non-metallic materials Tingting Tang , Bo Zhao <i>China Special Equipment Inspection and Research Institute, China</i>

Parallel session 38: Time-dependent failure (Creep/Fatigue) V

//Conference Room 8 (8号会议室)

Session chair: Rong Jiang (Nanjing University of Aeronautics and Astronautics, China)

15:45—16:00	Role of asymmetric load waveform on fatigue and creep-fatigue behaviour of 316L austenitic stainless steel Fan Wu*, An Chen, Umer Masood Chaudry, Gareth Douglas, Joe Kelleher, Bo Chen <i>University of Leicester, UK</i>
16:00—16:15	Simulating creep-fatigue crack growth with a modified phase-field model Xin Huang, Qikun Xie, Shaolin Li*, Hongyu Qi, Xiaoguang Yang, Duoqi Shi <i>Beihang University, China</i>
16:15—16:30	A kinematic hardening constitutive model for anomalous multiaxial ratcheting behaviors of zirconium alloy tubes under combined cyclic axial load and internal pressure at 648 K Zuoliang Ning, Xiaofan Lv, Shouwen Shi, Xiang Guo, Shengkun Wang, Bin Xu, Gang Chen* <i>School of Chemical Engineering and Technology, Tianjin University, China</i>
16:30—16:45	Influences of hot corrosion on the fatigue crack propagation mechanisms of a turbine disc alloy Rong Jiang*, Leicheng Zhang, Mingliang Li, Yingdong Song <i>Nanjing University of Aeronautics and Astronautics, China</i>
16:45—17:00	Aging degradation characteristics and long-term performances of structural materials for energy conversion systems Xiangyu Zhong*, Pan Liu, Yunlong Wu, Tetsuo Shoji, Yutaka Watanabe <i>Tohoku University, Japan</i>
17:00—17:15	Failure analysis of ultra-high-pressure double-pipe heat exchanger for high pressure polyethylene process Bingjun Gao <i>Hebei University of Technology, China</i>
17:15—17:30	Experimental and numerical study on foreign object damage characteristics of nickel-based superalloy at room and high temperatures Weizhu Yang*, Haowei Yang, Jianjun Liu, Yan Zeng, Xinmei Wang, Lei Li <i>Northwestern Polytechnical University, China</i>
17:30—17:45	An experimental device for investigating the mechanisms of impact and sliding wear on Inconel 690 alloy heat transfer tubes Chengming Lou, Jiaxin Chen, Lei Xu, Shiyi Bao* <i>Zhejiang University of Technology, China</i>
17:45—18:00	Hot corrosion-creep interaction in CoNiCrAlY coating of DSM11 alloy Kai Gao, Cong-Qian Cheng, Ga-Ping Deng, Tie-Shan Cao, Jie Zhao* <i>Dalian University of Technology, China</i>

Parallel session 39: Time-dependent failure (Corrosion/Creep/Others)

VI

//Jinhua Conference Room B (锦华厅B)

Session chair: Qunjia Peng (Suzhou Nuclear Power Research Institute, China)

15:45—16:10	Keynote lecture A visual experimental study on fuel cladding structural integrity during Loss-of-Coolant Accident Tong Liu <i>Shanghai Jiao Tong University, China</i>
16:10—16:25	Environmental degradation of LPBF materials in nuclear systems: stress corrosion cracking and irradiation effects D. Bardel* , M. Konstantinovic, E. Andrieu, G. Badinier, K. Ettaieb <i>Framatome, France</i>
16:25—16:40	Influence of service-induced damage on the corrosion and stress corrosion sensitivity of Q345R storage tank material Shiyuan Zhong , Yuhui Huang*, Mingliang Zhu, Shan-Tung Tu, Fuzhen Xuan <i>East China University of Science and Technology, China</i>
16:40—16:55	An experimental investigation on predicting the fracture toughness using spherical indentation tests (SITs) for carbon segregation metals Weiwei Yu , Lu Zhang, Mingya Chen, Qunjia Peng, Yaolei Han, Tairui Zhang* <i>Suzhou Nuclear Power Research Institute, China</i>
16:55—17:10	An insight into corrosion-creep interaction on the damage of austenitic stainless steel in molten solar salt Heng Li , Xiaowei Wang*, Jianming Gong, Shan-Tung Tu <i>Nanjing Tech University, China</i>
17:10—17:25	Electrochemical corrosion behavior analysis of stainless steel welded joints Zaixin Li , Qiang Dai, Lixian Wang, Bingqing Cao, Lei Xu, Bo Zhao* <i>China Special Equipment Inspection and Research Institute, China</i>
17:25—17:40	Effect of oxidative corrosion behavior on the mechanical properties of blade film cooling holes Dongxu Zhang* , Zhenyu Xin, Menghui Lv, Haiqing Pei, Zhixun Wen <i>Shaanxi University of Science and Technology, China</i>

Parallel session 40: Long-term creep life prediction in honor of Prof. Rolf Sandström

//Conference Room 2 (2号会议室)

Session chair: Junjing He (Hangzhou Dianzi University, China)

15:45—16:20	Keynote lecture (Online) Precise computation of creep properties with basic models Rolf Sandström <i>KTH Royal Institute of Technology, Sweden</i>
16:20—16:35	Prediction method of long-term creep rupture strength based on creep crack growth test (Invited) Shan-Tung Tu <i>East China University of Science and Technology, China</i>
16:35—16:50	Predicting creep rupture and premature failure of steels and alloys with soft-constrained machine learning (Invited) Junjing He* , Rolf Sandström <i>Hangzhou Dianzi University</i>
16:50—17:05	Long-term creep life prediction of Gr.91 and Gr.92 based on creep deformation analysis (Invited, Online) Fujio Abe <i>National Institute for Materials Science, Japan</i>
17:05—17:20	Extra long-term creep behaviors of heat resistant austenitic stainless steels (Invited) Guocai Chai <i>Linköping University, Sweden</i>
17:20—17:35	Concentration and temperature dependencies of alloy properties from DFT calculations via quasiharmonic models (Invited, Online) Pavel A. Korzhavyi <i>KTH Royal Institute of Technology, Sweden</i>
17:35—17:50	On the modelling long term creep deformation, creep damage and rupture (Invited, Online) Qiang Xu* , Joan Lu <i>University of Huddersfield, UK</i>
17:50—18:05	Creep fracture and damage evaluation based on the distribution of cavities on grain boundaries (Invited, Online) Naoya Tada <i>Okayama University, Japan</i>
18:05—18:20	Importance of acquiring and accumulating basic data for reliable prediction of long-term creep strength (Invited, Online) Koichi Yagi, Meiling Wang, Peng Shi, Yonghao Lu <i>University of Science and Technology Beijing, China</i>

Parallel session 41: Risk informed structural integrity assessment II

//Conference Room 9 (9号会议室)

Session chair: Kai Lu (Fuzhou University, China)

15:45—16:10	Keynote lecture Correlation of damage with strength and plasticity of 316H stainless steel welds with defects Ming-Liang Zhu <i>East China University of Science and Technology, China</i>
16:10—16:25	Evaluation method of probabilistic fracture mechanics for nuclear pressure-retaining components Jun Pan* , Shiwei Li, Chao Huang, Xihui Su, Kai Zhang, Chang Liu <i>China Productivity Center for Machinery Co., Ltd, China</i>
16:25—16:40	Analysis of probabilistic fracture mechanics for PTS of reactor pressure vessel Zhicheng Lu* , Dasheng Wang <i>China Nuclear Power Design Company LTD, Shenzhen of Guangdong Prov. China., China</i>
16:40—16:55	Development of probabilistic fracture mechanics analysis code for Chinese reactor pressure vessel: PET-CR Kai Lu* , Wangling Fu, Liang Wang, Wei Chen, Yinsheng Li <i>Fuzhou University, China</i>
16:55—17:10	Reliability-based creep-fatigue assessment of nuclear pressure vessel with probabilistic linear matching method framework Xiaoxiao Wang* , Haofeng Chen <i>East China University of Science and Technology, China</i>

Parallel session 42: International workshop on battery safety and reliability IV

//Jinhua Conference Room A (锦华厅A)

Session chair: Ying Chen (East China University of Science and Technology, China)

15:45—16:10	Keynote lecture Poly(Ionic Liquid)s-based Composite Solid State Electrolytes for Lithium Metal Batteries Jiajia Li, Xiaoyan Ji <i>Luleå University of Technology, Sweden</i>
16:10—16:35	Keynote lecture Battery safety in mining operations Erik Dahlquist, Madeleine Martinsen <i>Malardalen University, Sweden</i>
16:35—16:50	Fast prediction of low earth orbit battery life based on multi-source transfer learning Chenmin Xu, Zixian Zhuang, Weiling Luan* <i>East China University of Science and Technology, China</i>
16:50—17:05	Enhanced deicing property of AI lines with superhydrophobic surface in power grid Tao Jiang*, Bo Li, Hao Mu, Ying Zhang <i>Electric Power Research Institute of Guizhou Power Grid Co., Ltd., China</i>
17:05—17:20	Mechanisms of mechanical damage to silicon-carbon particles affecting battery lifespan Zhaochen Gao, Xiaoxiao Wang, Haofeng Chen* <i>East China University of Science and Technology, China</i>
17:20—17:35	Fatigue damage assessment of cathode active particles in lithium-ion batteries under electrochemical-mechanical loading Ruonan Xiong, Haofeng Chen*, Xiaoxiao Wang <i>East China University of Science and Technology, China</i>

Poster Q&A session// Conference Hall Corridor (酒店一楼会场走廊), 16:00-18:20

Please refer to the list of posters.

Day 4: Detailed Program

Series session 5: Plenary lectures //International Conference Hall (国际宴会厅)

Session chair: Jianming Gong (Nanjing Tech University, China)

08:30-09:05	Structural integrity and life of materials and components made by additive manufacturing Aleksandar Sedmak <i>University of Belgrade, Serbia</i>
09:05-09:40	Unified tensile fracture criterion Zhe-Feng Zhang <i>Institute of Metal Research, Chinese Academy of Science, China</i>
09:40-10:15	Research on the processes, material properties and residual stresses in additive manufacturing Shu-Yan Zhang <i>Centre of Excellence for Advanced Materials, China</i>
10:15-10:40	Coffee break

Closing ceremony //International Conference Hall (国际宴会厅)

Session chair: Jian-Feng Wen (East China University of Science and Technology, China)

10:40-11:00	Best paper/poster award ceremony Jian-Feng Wen <i>East China University of Science and Technology, China</i>
11:00-11:30	Introduction to the next symposium Aleksandar Sedmak <i>University of Belgrade, Serbia</i>
11:30-12:00	Conference summary Shan-Tung Tu <i>East China University of Science and Technology, China</i>
12:00-13:40	Lunch & Break (Conference end)

Technical visiting

14:00-14:40	Technical Visiting – CEAM, Dongguan (some participants)
15:10-15:50	Technical Visiting – SSLab or CSNS (some participants)
16:00	Technical visiting end

List of posters

- 1) (Nanjing Tech University) Yanqiang Wei, Jinzhu Tan. Numerical investigation of proton exchange membrane fuel cell with symmetrical serpentine channels equipped with baffles.
- 2) (Zhengzhou University) Jiaqi Yang, Qin Zhang, Ke Wang. Enhancement of redox cycling stability of Ni-based anodes for intermediate temperature solid oxide fuel cells through Ge-Ce Co-doped ceramic phase.
- 3) (Nanjing Tech university) Hongtai Li, Jingzhu Tan. Effect of the shape of nano- Al_2O_3 particles on the tribological properties of nitrile butadiene rubber (NBR) under different friction conditions.
- 4) (Nanjing Tech university) Tao Dai, Jianping Zhao. A safety assessment method for extended service hydrogenation reactors based on neural networks.
- 5) (East China University of Science and Technology) Fei Pan, Ning Wang, Xianhao Zhu, Qiuyu Wu, Tiwen Lu, Xiancheng Zhang. Study on the effect of laser impact, shot peening and its composite peening on fatigue limit and residual stress relaxation of TC4.
- 6) (Zhejiang University of Technology) Junming Ma, Yincheng Wang, Chenze Wang, Shiyi Bao, Lijia Luo. Aging damage detection and evaluation of 316H stainless steel based on frequency-mixing nonlinear electromagnetic ultrasonic.
- 7) (Zhejiang University of Technology) Chong Zhen, Chenwei Zhang, Junsen Lin, Lijia Luo, Shiyi Bao. Study on creep-fatigue properties of 316H austenitic stainless steel after thermal aging.
- 8) (Ningbo Special Equipment Inspection and Research Institute) Zhengxiang Shen, Hu Chen. Primary creep degradation assessment of 12Cr1MoVG steel by flat indentation and electron backscattered diffraction methods.
- 9) (East China University of Science and Technology) Ning Wang, Xianhao Zhu, Shulei Yao, Fei Pan, Qiuyu Wu, Hao Yu, Xiancheng Zhang, Shandong Tu. Influence of abrasive waterjet peening on low cycle fatigue performance of Inconel 690 alloy.
- 10) (Jimei University) Wanli Tu, Shuncong Zhong, Qiukun Zhang, Yi Huang, Manting Luo. Research on multiple damage identification of epoxy coating structures based on terahertz imaging technology and machine learning.
- 11) (University of Shanghai for Science and Technology) Hongyan Feng, Jun Shen, Jialong Gao. Comparative analysis and engineering applications of buckling analysis methods between the 2023 version and old versions of ASME VIII-2.
- 12) (Zhengzhou University) Tianxu Wu, Ke Wang. The impact of corrugation angle on a high-

temperature plate heat exchanger and heat transfer analysis.

- 13) (Tongji University) Zhuo Zhang, Mingchun Wu, Kai Zhang, Bailin Zheng*. Effect of 0°-Layers ratio on the dynamic fracture toughness of longitudinal compression failure of CFRP laminates.
- 14) (East China University of Science and Technology, China) Jingyang Chen, Weitong Xiao, Lyudmila Turyanska, Yiting Wu, Weiling Luan*. Effect of strain on the morphology and luminescence properties of NaYbF₄ with different lanthanide matrix inert shell layers.
- 15) (East China University of Science and Technology, China) Yiting Wu, Weitong Xiao, Jingyang Chen, Weiling Luan*. Multifunctional nano-system based on up-conversion nanocrystals and BODIPY for magnetic resonance imaging-guided photodynamic therapy of deep tumors.
- 16) (East China University of Science and Technology, China) Zibo Gao, Zixian Zhuang, Weiling Luan*. Remaining useful life prediction of large capacity lithium-ion batteries based on time series prediction and transfer learning.
- 17) (Shanghai University, China) Runlong Peng, Bin Zheng, Nan Li, Zhonghua Miao, Jin Zhou*. Neural network-based fixed-time attitude synchronization control for uncertain networked spacecraft systems.

Publication information

The official language of the conference is English. Papers corresponding to selected presentations will be recommended for publication in special issues of *Fatigue & Fracture of Engineering Materials & Structures* and *Materials at High Temperatures* after the symposium, following peer review.

Travelling information

The travelling from airport/railway station to the conference venue can be found below.

◆ 深圳宝安国际机场至东莞帝豪花园酒店

(空港快线24小时服务热线：0755-88895000)

(1) 网约车/出租车：全程约50公里，费用约160元（高速费不含在内），约60分钟。

(2) 机场专线大巴：微信“旅易快线”小程序购票，终点“松山湖候机楼”，费用55元。

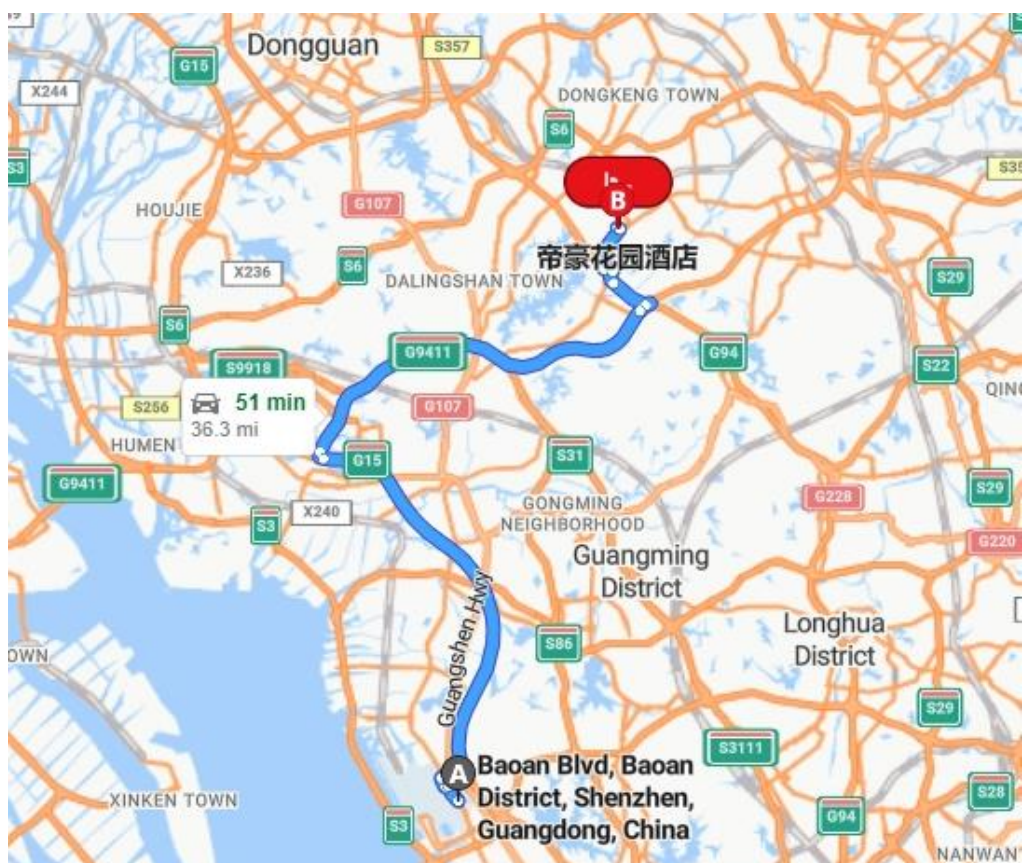
全程约60分钟，终点落地打车20分钟左右到酒店（请注意发车时间，提前购票）。

◆ Shenzhen Bao'an International Airport to Royal Garden Hotel Dongguan

(Airport Express 24-hour service hotline : 0755-88895000)

(1) Online ride hailing/taxi: The entire journey is about 50 kilometers and the cost is about 160 RMB (excluding the toll fees). It takes about 60 minutes from Shenzhen Bao'an International Airport to Royal Garden Hotel Dongguan;

(2) Airport shuttle bus: Purchase tickets through the WeChat app "Travel Easy Express". The final destination is "Songshan Lake Terminal", with a cost of 55 RMB. The whole bus journey takes about 60 minutes. After arriving at "Songshan Lake Terminal", it takes about 20 minutes to take a taxi to the hotel (please note the departure time and purchase tickets in advance).



◆ 广州白云国际机场至东莞帝豪花园酒店

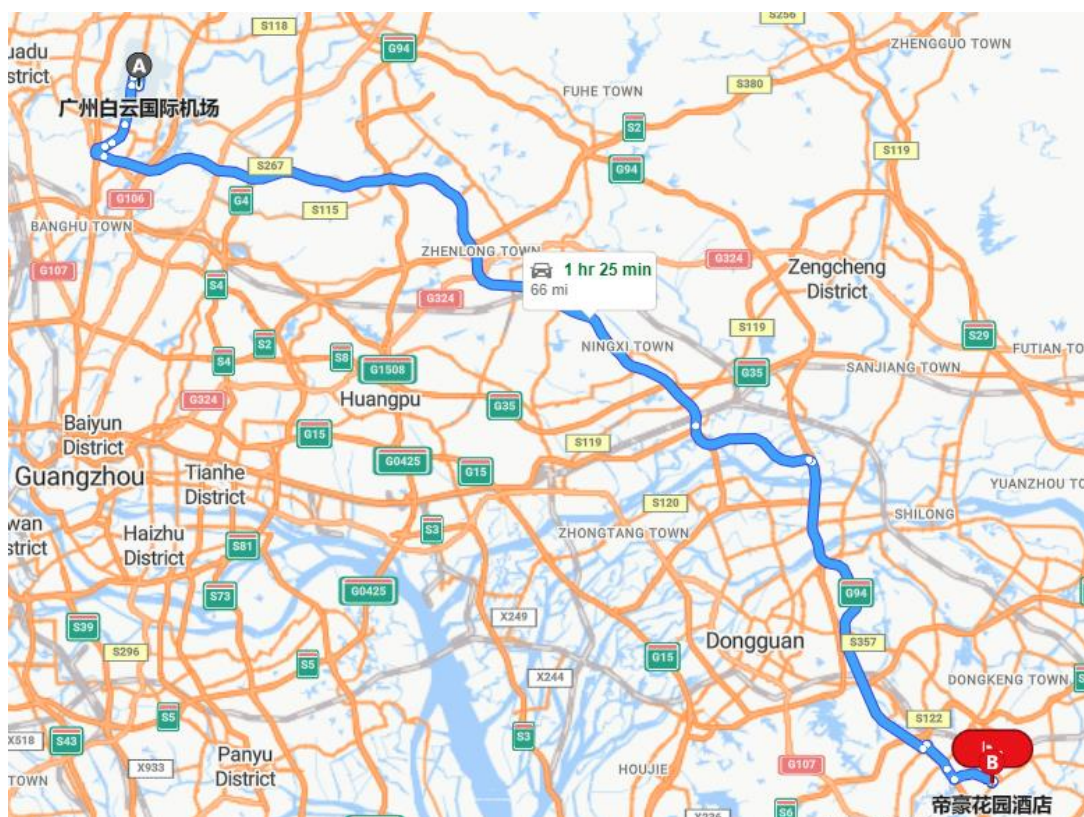
(空港快线24小时服务热线: 020-36063156)

- (1) 网约车/出租车: 全程约110公里, 费用约200元 (高速费不含在内), 约90分钟。
- (2) 机场专线大巴: 微信“白云机场空港快线”小程序购票, 终点“松山湖候机楼”, 费用80元。
全程约90分钟, 终点落地打车20分钟左右到酒店 (请注意发车时间, 提前购票)。

◆ Guangzhou Baiyun International Airport to Royal Garden Hotel Dongguan

(Airport Express 24-hour service hotline: 020-36063156)

- (1) Online ride hailing/taxi: The total distance is about 110 kilometers from Guangzhou Baiyun International Airport to the hotel. The cost is about 200 RMB (excluding the toll fees). It takes about 90 minutes from the airport to the hotel.
- (2) Airport shuttle bus: Purchase tickets through the WeChat app "Baiyun Airport Express", and the final destination is "Songshan Lake Terminal", with a cost of 80 RMB. The whole bus journey takes about 90 minutes. After arriving at "Songshan Lake Terminal", it takes about 20 minutes to take a taxi to the hotel (please note the departure time and purchase tickets in advance).



◆ 深圳北站至东莞帝豪花园酒店

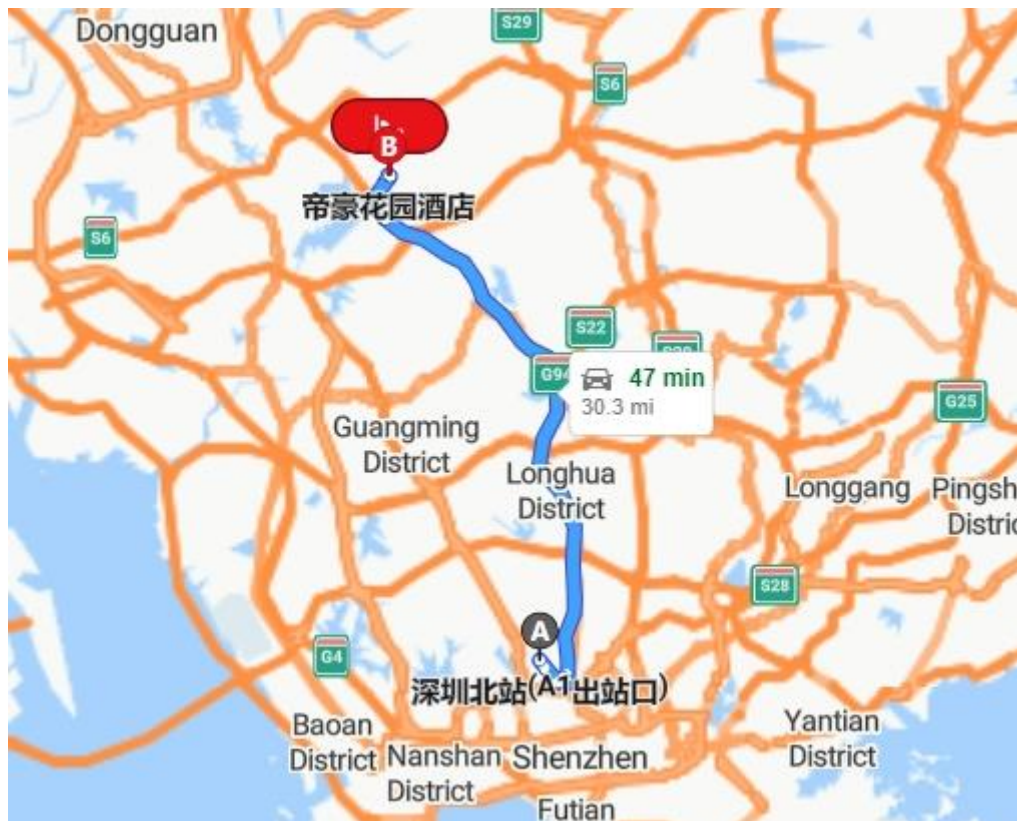
(1) 网约车/出租车：全程约50公里，费用约100元（高速费不含在内），约60分钟。

(2) 高铁出行：12306购票前往东莞虎门高铁站，约17分钟。前往高铁站大巴快线215，大巴直达酒店，约8元，90分钟/虎门高铁站网约车前往酒店，60分钟。

◆ Shenzhen North Station to Royal Garden Hotel Dongguan

(1) Online ride hailing/taxi: The entire journey is about 50 kilometers, and the cost is about 100 RMB (excluding the toll fees). It takes about 60 minutes from Shenzhen North Station to Royal Garden Hotel.

(2) High speed train travel: Purchase ticket through app "12306" from Shenzhen North Station to Dongguan Humen Train Station. It takes about 17 minutes. After arriving at Humen Train Station, get the Bus express line 215 and go directly to the hotel. The bus ticket is about 8 RMB. It takes about 90 minutes from Humen high-speed railway station to the hotel. If you get a taxi from Humen Station to the hotel, it takes about 60 minutes.



◆ 虎门高铁站至东莞帝豪花园酒店

- (1) 网约车/出租车：虎门高铁站网约车前往酒店，约40公里，60分钟。
- (2) 公交快线：高铁站公交快线215，直达酒店，约8元，90分钟。

◆ Humen Railway Station to Royal Garden Hotel Dongguan

- (1) Online ride hailing/taxi: The entire journey is about 40 kilometers, and the cost is about 70 RMB (excluding the toll fees). It takes about 60 minutes from Humen Station to the conference hotel.
- (2) Bus Express: Get the Bus express line 215 and go directly to the hotel. The bus ticket is about 8 RMB. It takes about 90 minutes from Humen high-speed railway station to the hotel.

