



The Efficiency
& Performance
Engineering
NETWORK

TEPEN International Workshop on Fault Diagnostic and Prognostic (TEPEN2024-IWFDP) Handbook

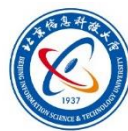


Qingdao, China

8th – 11th May 2024



University of
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1 General Information

1.1 About the Conference

TEPEN International Workshop on Fault Diagnostic and Prognostic (**TEPEN2024-IWFDP**) has a theme of *Intelligent Health Monitoring and Diagnostics for Enhancing Efficiency, Reliability and Sustainability of Engineering Assets*, which will be organised by **Qingdao University of Technology** supporting by **TEPEN** executive committee to be held on **8th – 11th May 2024** in Hilton Hotel Golden Beach, Qingdao, P. R. China.

The workshop aims to provide an effective knowledge-sharing and exchange platform for field practitioners, specialists, academics and research students in machine and structural health monitoring, non-destructive testing, and fault detection, diagnostic and prognostic for both operational equipment and manufacturing processes. The workshop is featured with keynote speeches by renowned scholars and researchers, a panel discussion on the new trends, opportunities, and challenges in the era of Industry 4.0 by well-established industry leaders and researchers, as well as parallel technical sessions. The workshop will also provide a sociable and professional environment for participants to encourage networking, forge new collaboration relationships and consolidate on the existing one.

1.2 Date and Attendance

Conference Venue: Hilton Hotel Golden Beach, Qingdao, China

Date and Time: 8th May – 11th May 2024

Conference Web: <https://tepen.net/tepen-iwfdp2024/>

Contact Us:

- **WeChat:** ytt199406197175
- **Email:** tepen2024@163.com
- **Phone:** +86 184 5327 6561

1.3 Honourable Chairs



Prof. Fulei Chu

Professor in the Department of Mechanical Engineering,
Tsinghua University, China.

Vice President of the Chinese Society for Vibration Engineering
(CSVE).



Prof. Andrew D. Ball

Pro-Vice-Chancellor (Research, Innovation & Knowledge Exchange),
Dean of the School of Computing and Engineering,
Director of Central Research, Innovation & Knowledge Exchange,
Professor of Diagnostic Engineering,
University of Huddersfield, UK.

1.4 General Chairs



Prof. Tian Ran Lin

Director, Centre for Structure Acoustics and Machine Fault
Diagnosis, Qingdao Key Rail Transportation Lab for NVC & AFD,
Qingdao University of Technology, P. R. China.



Prof. Fengshou Gu

Chair of TEPEN executive committee,
Emeritus Professor, University of Huddersfield, UK.
Professor, Beijing Institute of Technology, Zhuhai, China.

2 Online Attendance via Zoom

The delegates are expected to attend in person; in the rare event when in-person attendance is impossible, delegates can get access to the conference via the following **Zoom** link.

2.1 Meeting Link

Zoom Link: <https://hudac.zoom.us/j/68172165856>

Meeting ID: **681 7216 5856** Passcode: **778720**

Zoom usage guidance:

<https://tepen.net/wp-content/uploads/2024/04/Zoom-usage-guidance-for-TEPEN2024-IWFDP.pdf>

2.2 Technical Support

Session	Location	Name	Contact
Main Session	Fushan Bay 6&7	Rongfeng Deng	WeChat: wx-109014646
			Mobile: 13631281237
Parallel Session: 1, 6, 11, 16	Fushan Bay #5	Rongfeng Deng	WeChat: wx-109014646
			Mobile: 13631281237
Parallel Session: 2, 7, 12, 17	Fushan Bay #6	Yubin Lin	WeChat: wxid_e8brdo47d76g21
			Mobile: 15019941965
Parallel Session: 3, 8, 13, 18	Fushan Bay #7	Zhexiang Zou	WeChat: tessazzx
			Mobile: 18507565100
Parallel Session: 4, 9, 14, 19	Fushan Bay #15	Chun Li	WeChat: Springli0821
			Mobile: 15992659749
Parallel Session: 5, 10, 15, 20	Fushan Bay #16	Zewen Zhou	WeChat: zhouzw_
			Mobile: 18435168369

3 Programme

Date	Time (BJT)	Agenda Item	Chair	Location
08 th May	14:00-20:00	Registration Open	Dr. Jingjing Wang	Entrance Hall
08 th May	18:30-20:30	Buffet Dinner	Ms. Tengteng Yuan	Buffet Restaurant
09 th May	07:00-17:00	Registration Open	Dr. Jingjing Wang	Entrance Hall
	08:00-08:30	Opening Ceremony & Photo Session	Prof. Tian Ran Lin Welcome by Fulei Chu and Fengshou Gu	Fushan Bay 6&7
	08:30-09:00	Keynote Speech: Prof. Qian Ding Title: Data-driven structural parameter optimization for ABH structures	Prof. Andy Tan	Fushan Bay 6&7
	09:00-09:30	Keynote Speech: Prof. Huajiang Ouyang Title: Health monitoring of a train bogie and its components		
	09:30-10:00	Keynote Speech: Prof. Shixi Yang Title: Performance monitoring and fault diagnosis of industrial gas turbines	Prof. Niaoqing Hu	
	10:00-10:20	Morning Refreshments and Exhibition		
	10:20-10:50	Keynote Speech: Prof. Youqing Wang Title: State monitoring of industrial systems based on multivariate statistics and deep learning	Prof. Shunming Li	Fushan Bay 6&7
	10:50-11:20	Keynote Speech: Prof. Baoping Cai Title: Intelligent operation and maintenance of subsea equipment for offshore oil		
	11:20-11:50	Keynote Speech: Prof. Dong Zhen Title: Acoustic array methods for rotating machinery fault diagnosis	Prof. Zhipeng Feng	
	11:50-12:20	Keynote Speech: Prof. Wade Smith (Online) Title: A new look for bearing signal modes		
	12:20-14:00	Lunch Break		Buffet Restaurant
	14:00-15:00	Panel Discussion: Prof. Mingjian Zuo, Prof. Fulei Chu, Prof. Han Huang, Prof. Hongjun Wang, Prof. Wenxian Yang, Prof. Dong Wang Topic: Recent Trends in Fault Diagnostic and Prognostic, Opportunities and Challenges	Prof. Mingjian Zuo	Fushan Bay 6&7
	15:00-15:30	Keynote Speech: Prof. Gang Niu Title: Time-frequency feature extraction and health monitoring of rail short-pitch damage	Prof. Hongrui Cao	
	15:30-16:00	Keynote Speech: Prof. Chuang Sun Title: Wavelet neural network for machine fault diagnosis		
		16:00-16:20	Afternoon Refreshments and Exhibition	

	16:20-16:50	Keynote Speech: Prof. Qingbo He Title: Computational sensing with mechanical metamaterials for vibration and acoustics identification	Prof. Jing Rao	Fushan Bay 6&7	
	16:50-17:20	Keynote Speech: Prof. Gang Yu Title: Fast Cmspogram: an effective new tool for periodic pulse detection			
	17:20-17:50	Keynote Speech: Prof. Yuchun Xu (Online) Title: Digitalisation for life cycle cost optimization of engineering asset			
		18:30-20:30	Conference dinner (Welcome by Prof. Andrew Ball, Presentations by Houde Company, JDMD journal and Other Sponsors, Announcing of the next TEPEN by Prof. Fengshou Gu and welcome presentation by Prof. Kexiang Wei & Prof. Yiping Shen)		Fushan Bay 6&7
10 th May	08:00-10:06	Parallel Session 1	Dr. Ming Luo Prof. Rongfeng Deng	Fushan Bay #5	
		Parallel Session 2	Prof. Yun Kong Prof. Zhenxiang Zuo	Fushan Bay #6	
		Parallel Session 3	Prof. Kun Yu Dr. Peng Chen	Fushan Bay #7	
		Parallel Session 4	Prof. Xiaochuan Li Dr. Chun Li	Fushan Bay #15	
		Parallel Session 5	Prof. Chao Zhang Prof. Kaibo Lv	Fushan Bay #16	
	10:06-10:30	Morning Refreshments and Exhibition			
	10:30-12:22	Parallel Session 6	Prof. Yuandong Xu Prof. Tongtong Liu	Fushan Bay #5	
		Parallel Session 7	Prof. Lingli Jiang Prof. Jiaojiao Ma	Fushan Bay #6	
		Parallel Session 8	Prof. Shilong Sun Dr. Xiaoxia Liang	Fushan Bay #7	
		Parallel Session 9	Prof. Chao Zhang Prof. Kaibo Lv	Fushan Bay #15	
		Parallel Session 10	Prof. Kun Yu Dr. Jinzhen Kong	Fushan Bay #16	
	12:22-13:30	Lunch Break			
	13:30-15:36	Parallel Session 11	Prof. Wei Wang Prof. Lei Hu	Fushan Bay #5	
		Parallel Session 12	Prof. Jun Wang Prof. Minmin Xu	Fushan Bay #6	
		Parallel Session 13	Prof. Guoxing Li Prof. Peiming Shi	Fushan Bay #7	
		Parallel Session 14	Prof. Yunpeng Cao Prof. Ruicheng Wang	Fushan Bay #15	
		Parallel Session 15	Prof. Yuandong Xu Prof. Tongtong Liu	Fushan Bay #16	
	15:36-16:00	Afternoon Refreshments and Exhibition			
	16:00-18:06	Parallel Session 16	Prof. Tianyang Wang Prof. Hongjun Wang	Fushan Bay #5	
		Parallel Session 17	Prof. Guojin Feng Prof. Hao Zhang	Fushan Bay #6	

		Parallel Session 18	Prof. Dezun Zhao Prof. Chuanjiang Li	Fushan Bay #7
		Parallel Session 19	Prof. Wenxian Yang Prof. Chao Fu	Fushan Bay #15
		Parallel Session 20	Prof. Minmin Xu Prof. Tongtong Liu	Fushan Bay #16
	18:06-18:20	Close Remarks And Announcing the Best Paper Awards	Prof. Tian Ran Lin, Prized by Prof. Niaoqing Hu Prof. Hongjun Wang, Prof. Chao Zhang, Prof. Hao Zhang Prof. Wenxian Yang	Fushan Bay #6
	18:20-20:30	Buffet Dinner		Buffet Restaurant
11 th May	09:00-12:00	Group activities: Knowledge sharing and exchange of the opportunities and challenges in condition monitoring, fault diagnostic and prognostic in the era of Industry 4.0	Dr. Hui Xi Ms. Yajun Shang	

4 Local Committee

4.1 Executive Committee

General affairs: keynote organisation, academic co-sponsors, workshops, lab visiting, handbook editing, conference prices, printings (badge, posters), dissemination leaflet, social networks, lecture room, virtual meeting background and registration desks.

Chair: **Prof. Feng Guo**

Members: **Prof. Tian Ran Lin, Prof. Fengshou Gu, Dr. Zuolu Wang, Dr. Xiaoxia Liang, Dr. Bingyan Chen, Dr. Kai Zhang, Dr. Guoqing Mu, Dr. Tao Lu**

4.2 Program Committee

Paper handling including template, review, similarity checking and acceptance.

Chair: **Dr. Xiaoxia Liang**

Members: **Prof. Wenxian Yang, Dr. Jinzhen Kong, Prof. Yuandong Xu, Prof. Kexiang Wei, Dr. Kai Zhang, Dr. Yuan Xie, Prof. Hongjun Wang, Dr. Tongtong Liu, Mr. Shiqing Huang, Dr. Zuolu Wang, Prof. Rongfeng Deng, Mr. Zewen Zhou, Mr. Zhifeng Hu, Miss. Yang Chen**

4.3 Publication Committee

Proceeding publication affairs: publisher, cost, formatting, copyright and timelines.

Chair: **Dr. Bingyan Chen**

Members: **Dr. Bingyan Chen, Prof. Tian Ran Lin, Dr. Xiaoxia Liang, Dr. Zuolu Wang, Dr. Kai Zhang, Dr. Ke Feng, Dr. Yuandong Xu, Prof. Wenxian Yang, Prof. Fulei Chu, Prof. Andrew Ball**

4.4 Publicity Committee

Refreshment, banquet, social activities, gift preparation, health & safety, emergency support.

Chair: **Dr. Jingjing Wang**

Members: **Dr. Kai Zhang, Dr. Guoqing Mu, Dr. Yakui Liu, Dr. Hui Xi, Dr. Yu Jiang, Ms. Yajun Shang**

4.5 Finance Committee

Invitation and registration.

Chair: **Prof. Tian Ran Lin**

Members: **Ms. Tengteng Yuan**

4.6 IT Committee

Conference venue arrangement, IT facilities and website updating.

Chair: **Dr. Zuolu Wang/ Prof. Rongfeng Deng**

Members: **Mr. Dawei Shi, Mr. Chiheng Huang, Mr. Samuel Ayankoso, Mr. Ali Amirizani, Mr. Yinghang He, Mr. Yubin Lin, Dr. Chun Li, Prof. Zhexiang Zou, Mr. Zewen Zou**

4.7 Exhibition and Sponsorship Committee

Exhibition stands, posters and so on.

Chair: **Dr. Yaqiang Jin**





Members: **Dr. Jingjing Wang, Dr. Kai Zhang, Ms. Xiaoyu Zhao, Prof. Zhexiang Zou, Dr. Chun Li**





5 International Committee

Prof. David Baglee, University of Sunderland, UK	Prof. David Mba, University of the Arts London, UK
Prof. Surjya K Pal, Indian Institute of Technology Kharagpur, India	Prof. Hao Zhang, Hebei University of Technology, China
Prof. Mohamed Ben-Daya, American University of Sharjah, UAE	Dr. Kassandra Papadopoulou, The University of Manchester, UK
Prof. Yuandong Xu, Hunan University of Science and Technology, China	Dr. Guojin Feng, Hebei University of Technology, China
Dr. Gopinath Chattopadhyay, Federation University Australia, Australia	Dr. Xiaoxia Liang, Hebei University of Technology, China
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Prof. Filipe Didelet, IPS (Polytechnic Institute of Setubal), Portugal	Dr. Shan Lou, University of Huddersfield, UK
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Prof. Luís Andrade Ferreira, University of Porto, Portugal	Prof. Ruiliang Zhang, Taiyuan University of Technology, China
Dr. Guoxing Li, Taiyuan University of Technology, UK	Prof. Qingbo He, Shanghai Jiao Tong University, China
Dr. Wolfgang Hahn, Babcock International Group, UK	Prof. Rahizar Ramli, University of Malaya, Malaysia
Dr. Xiang Tian, Jiangsu University, China	Dr. Dong Wang, Shanghai Jiao Tong University, China
Prof. Benoit Lung, Cran University, France	Prof. Baoshan Huang, Beijing Institute of Technology, Zhuhai, China
Dr. Xiaoli Tang, Hunan University of Science and Technology, China	Prof. R. Zimroz, Wroclaw University of Technology, Poland
Dr. Akilu Kaltungo, The University of Manchester, UK	Prof. Guoji Shen, National University of Defense Technology, China
Dr. Kaibo Lu, Taiyuan University of Technology, UK	Prof. Stephan Heyns, University of Pretoria, South Africa
Prof. Mirka Kans, Linnaeus University, Sweden	Prof. Xiaojun Xu, National University of Defense Technology, China
Prof. Pavlos Lazaridis, University of Huddersfield, UK	Prof. Niaoqing Hu, National University of Defense Technology, China
Dr. Moray Kidd, The University of Manchester, UK	Prof. Guangbin Wang, Lingnan Normal University, China
Prof. Khaldoun F. Brethee, University of Anbar, Iraq	Prof. Yanlong Cao, Zhejiang University, China
Prof. Uday Kumar, Lulea University of Technology, Sweden	Prof. Jigang Wu, Hunan University of Science and Technology, China
Prof. Pingyu Zhu, Guangzhou University, UK	Dr. Wenbo Duan, University of Hertfordshire, UK
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Prof. Isa Yesilyurt, University of Usak, Turkey	Prof. Keith Worden, The University of Sheffield, UK
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Prof. Oscar García Peyrano, National University of Cuyo, Argentina	Dr. Ling Yu, Jinan University, China
Prof. Lingli Cui, Beijing University of Technology, China	Prof. Andreas Kyprianou, University of Cyprus, Nicosia
Prof. Hongjun Wang, Beijing Information Science & Technology University, China	Prof. Vadim V. Silberschmidt, Loughborough University, UK
Prof. Chao Zhang, Inner Mongolia University of Science & Technology, China	Prof. Nuno MM Maia, University of Lisbon, Portugal
Dr. Ming Luo, University of Bristol, UK	Prof. Zhipeng Feng, University of Science and Technology Beijing, China
Prof. Weihua Li, South China University of Technology, China	Prof. J Barton, University of Bristol, UK
Prof. Al-Hussein Albarbar, Manchester Metropolitan University, UK	Prof. M Lucas, University of Glasgow, UK
Prof. Konstantinos Gryllias, KU Leuven, Belgium	Prof. D Inman, Virginia Tech, USA
Prof. Mohammad A Al-Shudeifat, Khalifa, Khalifa University, United Arab Emirates	Prof. C Surace, Politecnico di Torino, Italy
Dr. Cristinel Mares, Brunel University London, UK	Prof. J E Mottershead, University of Liverpool, UK
Prof. Magd Abdel Wahab, Ghent University, Belgium	Prof. E Cross, University of Sheffield, UK
Dr. Laurent Mevel, Inria, center Rennes – Bretagne Atlantique, France	Prof. Basim Al-Najjar, Linnaeus University, Sweden
Prof. Maosen Cao, Hohai University, China	Prof. Aditya Parida, Lulea University of Technology, Sweden
Prof. Wiesław Ostachowicz, Polish Academy of Sciences, Poland	Prof. Per Schjølberg, Norwegian University of Science and Technology, Norway
Prof. Tommy HT Chan, Queensland University of Technology, Australia	Prof. Harekrishna Mishra, Rural Institute of Management, India
Prof. Luděk Pešek, Czech Academy of Sciences, Czechia	Prof. Vikas Arora, University of Southern Denmark, Denmark
Prof. Geert Degrande, KU Leuven, Belgium	Dr. Long Zhang, The University of Manchester, UK
Prof. Jean-Jacques Sinou, Ecole Centrale de Lyon, France	Prof. C. Nataraj, Villanova University, USA
Prof. Alessandro Fasana, Polytechnic of Turin, Italy	Prof. Lin Jing, Beihang University, Beijing, China
Prof. Wiesław Staszewski, AGH University of Science and Technology, Poland	Prof. Raghuvir Pai, Manipal Academy of Higher Education, India
Prof. Spiliotis D Fassois, University of Patras, Greece	Prof. Maneesh Singh, Western Norway University of Applied Sciences, Norway
Prof. Zhongqing Su, Hong Kong Polytechnic University, China	Prof. Rakesh Mishra, University of Huddersfield, UK
Prof. C P Fritzen, University of Siegen, Germany	Prof. Karsten Schmidt, Frankfurt University of Applied Sciences, Germany
Dr. Branislav Titurus, University of Bristol, UK	Dr. Quan Bing Eric Li, Teesside University, UK
Prof. Michael I Friswell, Swansea University, UK	Dr. Fang Duan, University of Bath, UK
Prof. Tadeusz Uhl, AGH University of Science and Technology, Poland	Dr. Zuolu Wang, Huddersfield University, UK

6 Keynote Speeches

	<p>Prof. Qian Ding</p> <p>Prof. Qian Ding received a BS degree in Engineering Mechanics from Xi'an Jiao Tong University in 1983, a MS and a PhD in Dynamics and Control from Tianjin University in 1994 and 1997. In 1997, he joined the Department of Mechanics at Tianjin University, was promoted to Associate Professor in 1998 and to Professor in 2004 and served as the head of the Department of Mechanics from 2012 to 2018. Besides many other editorial experiences, he is the deputy editor-in-chief of the journal "Progress in Mechanics". He is also the executive director of the Chinese Society of Theoretical and Applied Mechanics. His research interests include nonlinear vibration, data-driven multi-objective optimization, mechanical fault diagnosis and functional structural dynamics design.</p> <p>Keynotes Title: Data-driven structural parameter optimization for ABH structures</p>
	<p>Prof. Huajiang Ouyang</p> <p>Prof. Huajiang Ouyang received BEng and MEng in Engineering Mechanics in 1982 and 1985, respectively, and PhD in Structural Engineering in 1989, at Dalian University of Technology, China. He was a full Professor at the School of Engineering in the University of Liverpool and the Head of the Dynamics and Control Group, until June 2023, and retains an honorary professorship there. He is now a professor in the School of Mechanical Engineering, Southwest Jiao Tong University, China. Dr Ouyang is a Fellow of Institute of Physics and a Fellow of Higher Education Academy.</p> <p>Keynotes Title: Health monitoring of a train bogie and its components</p>
	<p>Prof. Shixi Yang</p> <p>Prof. Shixi Yang is a Professor at School of Mechanical Engineering, Zhejiang University, China. He has been engaged in teaching and research on condition monitoring and fault diagnosis, non-destructive testing and signal processing. He pursues both basic and applied research and has led many national projects. He carried out projects leading to solutions for various industrial problems related to the condition monitoring and fault diagnosis of the steam turbine, gas turbine, wind turbine and other turbomachinery. He has published over 200 journal papers and authorized more than 50 patents. His research outcomes have been honored the Science and Technology Progress Award of Zhejiang Province.</p> <p>Keynotes Title: Performance monitoring and fault diagnosis of industrial gas turbines</p>
	<p>Prof. Youqing Wang</p> <p>Prof. Youqing Wang (IET Fellow) received the B.S. degree from Shandong University, Jinan, Shandong, China, in 2003, and Ph.D. degree in Control Science and Engineering from Tsinghua University, Beijing, China, in 2008. From 2006 to 2007, he was a Research Assistant at Hong Kong University of Science and Technology, Hong Kong. From 2008 to 2010, he was a Senior Investigator at University of California, Santa Barbara, CA, USA. In 2015, he worked at University of Alberta in Edmonton, AB, Canada, as a Visiting Professor. He is currently the dean and professor at the College of Information Science and Technology, Beijing University of Chemical Technology. He considers learning control, state monitoring, and artificial intelligence as the key techniques to improve the safety and reliability of complex systems.</p> <p>Keynotes Title: State monitoring of industrial systems based on multivariate statistics and deep learning</p>

	<p>Prof. Baoping Cai</p> <p>Prof. Baoping Cai, Ph.D. Supervisor and Dean of the College of Mechanical and Electrical Engineering at China University of Petroleum (East China), the recipient of the National Science Fund for Distinguished Young Scholars, Distinguished Young Scholar of Shandong Province, Taishan Scholar of Shandong Province, and Hong Kong Scholar. He has been selected into the top 2% of scientists in the world for 4 consecutive years. In recent years, he has led 4 projects funded by the National Natural Science Foundation of China, including 1 for Distinguished Young Scholars, 2 general projects, and 1 for young researchers. Additionally, he has led 1 project and 3 special topics of National Key Research and Development Program, 1 sub-project of the National 863 Program, 2 special projects of the Ministry of Industry and Information Technology for high-tech ship research, and over 10 provincial and ministerial-level projects.</p> <p>Keynotes Title: Intelligent Operation and Maintenance of Subsea Equipment for Offshore Oil</p>
	<p>Prof. Dong Zhen</p> <p>Prof. Dong Zhen received his PhD degree in School of Computing and Engineering, from University of Huddersfield, United Kingdom, in 2012. He is currently a Professor with Hebei University of Technology. His research interests include mechanical system fault diagnosis and condition monitoring, vibration and noise signal processing, mechanical fault feature extraction and pattern recognition, wind turbine fault diagnosis and condition monitoring technology. He has published more than 100 papers, most of which have been indexed by SCI, EI or ISTP. He has hosted 3 national-level projects, 5 provincial-level projects, and more than 10 industrial projects.</p> <p>Keynotes Title: Acoustic Array Based Methods for Rotating Machinery Fault Diagnosis</p>
	<p>Dr. Wade Smith</p> <p>Dr. Wade Smith is a Senior Lecturer at UNSW Sydney. He studied for his Bachelor (2005) and PhD (2009) degrees in Mechanical Engineering at the University of Technology, Sydney, and in late 2011 he joined Professor Bob Randall's machine condition monitoring group at UNSW as a post-doctoral fellow. Since then, his research has focused mainly on vibration-based machine diagnostics and prognostics, in particular of gears and bearings. His current research interests include aircraft engine bearing diagnostics – a project with French aerospace company Safran – and gear diagnostics using vibration and transmission error.</p> <p>Keynotes Title: A New Look at Bearing Signal Models</p>
	<p>Prof. Gang Niu</p> <p>Prof. Gang Niu is a professor at the Institute of Rail Transit at Tongji University. He has been engaged in research on the fault evolution dynamics of transportation equipment, intelligent perception and information extraction, fault diagnosis, prognostics, and health management. He has published two academic monographs in English as the sole author and has published more than 150 academic papers as the first author and corresponding author. He has applied for and authorized more than 20 patents. He currently serves as the deputy editor of the Journal of Mechanical Engineering Science (Proc. IMechE, Part C), the editor member of the AMCS journal, and the Chinese Journal of Scientific Instrument, a standing director of the Dynamic Signal Analysis Committee of the Chinese Society of Vibration Engineering, a committee member of the SAFEPROCESS Committee of the China Automation Society, he is also the senior member of IEEE/CAA/CSVE, and the STP member of the IEEE1431.1 and UL4600 international standard.</p> <p>Keynotes Title: Time-frequency Feature Extraction and Health Monitoring of Rail Short-pitch Damage</p>

	<p>Prof. Chuang Sun</p> <p>Prof. Chuang Sun received the Ph.D. degree in mechanical engineering from Xi'an Jiaotong University, Xi'an, China, in 2014. From Mar. 2015 to Mar. 2016, he was a postdoc at Case Western Reserve University, USA. He is now a Professor in School of Mechanical Engineering at Xi'an Jiaotong University. His research is focused on manifold learning, deep learning, sparse representation, mechanical fault diagnosis and prognosis, remaining useful life prediction.</p> <p>Keynotes Title: Wavelet neural network for machine fault diagnosis</p>
	<p>Prof. Qingbo He</p> <p>Prof. Qingbo He is Professor with the School of Mechanical Engineering, Shanghai Jiao Tong University, China. His research interests include a combination of vibration analysis, signal processing, and smart structures for intelligent sensing, diagnosis, and maintenance of complex machines. He has published more than 130 peer-reviewed journal papers, including Nature Communications, Matter, and IEEE Transactions. He has been selected in the list of Chinese Most Cited Researchers by Elsevier since 2020. He is a recipient of multiple honors and awards, including National Young Professionals in China, Shanghai Outstanding Academic Leaders, the Best Paper Award from several international conferences.</p> <p>Keynotes Title: Computational sensing with mechanical metamaterials for vibration and acoustics identification</p>
	<p>Prof. Gang Yu</p> <p>Prof. Gang Yu, an Associate Professor at the School of Automation and Electrical Engineering, Jinan University, specializes in data processing and nonlinear signal analysis. He has developed multiple data processing algorithms for applications, such as 'Synchroextracting Transform' and 'Multisynchrosqueezing Transform'. These research outcomes have found direct applications in more than twenty research areas and directions, including mechanical fault diagnosis, radar technology, biomedical sciences, energy systems, automatic control, and manufacturing.</p> <p>Keynotes Title: Fast Cmspogram: An Effective New Tool for Periodic Pulse Detection</p>
	<p>Prof. Yuchun Xu</p> <p>Prof. Yuchun Xu is the Chair in Manufacturing, Director of Smart and Sustainable Manufacturing Research Centre (SMRC) at Aston University, Birmingham, UK. His research lies in the areas of Smart Manufacturing, Remanufacturing, Life Cycle Engineering and Circular Economy. Prof. Xu's research is sponsored by EPSRC, Innovate UK and Horizon EU/2000, and EU FP7 Programmes etc. His research is primarily focused on developing digital solutions to address sustainability challenges and facilitating the digital and green transition of industry and society. His research spans full product life cycle, including design, development, manufacturing, maintenance, remanufacturing/life extension, and recycle/disposal.</p> <p>Keynotes Title: Digitalisation for Life Cycle Cost Optimisation of Engineering Asset</p>
	<p>Prof. Jyoti Sinha</p> <p>Prof. Sinha is an internationally well-known expert in Vibration-based Condition Monitoring and Maintenance of Machines and Structures. He is involved in and solved a number of industrial vibration problems of machines, piping and structures by in-situ vibration measurements and analysis in many plants in the last 34 years. Prof. Sinha is listed in the Subject-wise ranking of top 2% scientist in 2020, 2021, 2022 and 2023 (4 times in row) compiled based on an independent study done by Stanford University.</p> <p>Keynotes Title: In-situ Vibration Measurements and Analysis to Solve Industrial Machine Vibration Problems</p>

7 Parallel Sessions

Session 1-5 in 8:00-10:30 on 10th May

Time (BJT)	Session 1 Machine Condition Monitoring Fushan Bay #5 <i>Dr. Ming Luo</i> <i>Prof. Rongfeng Deng</i>	Session 2 Fault Modelling, Detection and Diagnostics Fushan Bay #6 <i>Prof. Yun Kong</i> <i>Prof. Zhexiang Zou</i>	Session 3 Artificial Intelligent and Machine Learning Fushan Bay #7 <i>Prof. Kun Yu</i> <i>Dr. Peng Chen</i>	Session 4 Prognostics and Reliability Fushan Bay #15 <i>Prof. Xiaochuan Li</i> <i>Dr. Chun Li</i>	Session 5 Prognostics and Reliability Fushan Bay #16 <i>Prof. Chao Zhang</i> <i>Prof. Kaibo Lv</i>
08:00 - 08:14 10 th May	Topic: In-situ Vibration Measurements and Analysis to Solve Industrial Machine Vibration Problems (<i>Invited</i>) Prof. Jyoti Sinha University of Manchester	ID 20. A new method for calculating meshing stiffness of spur gears considering misalignment with multiple degrees of freedom Yachao Sun, Jianghai Shi, Yang Yang, Minggang Du and Hongrui Cao	ID 7. Multiple source domain transfer fault diagnosis method in rolling bearing under variable working conditions Xuepeng Zhang, Jinrui Wang, Zongzhen Zhang, Baokun Han, Huaqian Bao and Chenxu Wang	ID 15. Reliability Modeling and Analysis of Elevator Brake Based on KDF Model Optimization Dawei Wang, Yaqiang Jin, Jinrui Wang, Baokun Han, Pingxing Guo, Xuhao Man and Lingtan Kong	ID 30. Reliability study of critical components of urban rail vehicle based on improved SCSO algorithm (<i>Online</i>) Haimeng Sun, Deqiang He and Zhenpeng Lao
08:14 - 08:28		ID 32. Relationship between the eddy current probe size and the flaw size for flaw detection: a numerical study Liping Zhang, Xiwen Gu and Shixi Yang	ID 33. Fault diagnosis of train bogie bearing based on the AP-Tensor clustering under multichannel data Zexian Wei, Deqiang He, Zhenzhen Jin and Haimeng Sun	ID 39. Aircraft Engine Remaining Useful Life Prediction Using Attention-based Convolutional Neural Network - Gated Recurrent Unit Shilong Sun, Hao Ding and Haodong Huang	ID 35. Adaptive multi-domain feature fusion remaining useful life prediction of rolling bearings using temporal convolution long short-term memory network (<i>Online</i>) Jinxin Wu, Deqiang He, Zhenzhen Jin and Haimeng Sun
08:28 - 08:42	ID 57. A Bearing Feature Extraction Method based on Variational Mode Decomposition Feature Energy Entropy Xiang Li, Yunpeng Cao and Shuying Li	ID 67. Effects of Cage Flexibility and Crack Propagation on Roller-Cage Pocket Interaction Forces and Dynamics in Cylindrical Roller Bearings Zhifeng Shi, Lan Luo, Gang Zhang, Changfeng Yan and Jing Liu	ID 34. Fault diagnosis of switch machine based on hierarchical dispersion entropy and SSA-SVM Zhenzhen Jin, Deqiang He, Weichang Xu and Haimeng Sun	ID 54. Link Prediction in Knowledge Graph with Feature Enhancement Yefei Liang, Yuhong Zhao and Yue Yao	ID 46. Analysis of Factors Influencing the Bottom Impact Safety Performance of Power Battery Systems (<i>Online</i>) Pengfei Yan, Tianyi Ma, Fang Wang and Yan Gao
08:42 - 08:56	ID 82. Dual-channel Sensor Fault Detection and Isolation Based on Nonlinear Kalman Filter Ying Wang, Yunpeng Cao, Shuying Li, Linhai Zhu and Kun Yao	ID 85. Friction Torque of Four-point Contact Ball Bearings Based on Dynamic Model Hui Xi, Tao Lin, Tian Ran Lin, Yu Jiang and Yajun Shang	ID 43. Dynamic Data Reconciliation of Gas Turbine Based on PCA-LSTM Dezhi Ren, Yunpeng Cao and Shuying Li	ID 164. RUL prediction of split torque transmission system using particle filtering and degenerate model Weixin Yang, Zhi Wang, Xin Tang, Lei Hu and Yuandong Xu	ID 49. Evaluation Method for Utilizability of Decommissioned Power Battery Trapezoidal Utilization (<i>Online</i>) Cao Junyi, Wang Hong, Li Zhiying and Wang Zhijie

08:56 - 09:10 10 th May	ID 119. Feature density model-based abnormal vibration detection and severity assessment for rotating equipment Yaqiang Jin, Peng Chen, Meng Rao, Tian Ran Lin and Ming J. Zuo	ID 40. Research on the Mechanism of Rolling Bearing Dynamic System Considering Lubricant Changes (Online) Chengshi Zhang, Tongtong Liu, Jiaqing Lu and Chao Zhang	ID 112. A Review of Spiking Neural Network Research in the Field of Bearing Fault Diagnosis Yusen Wang, Hongjun Wang, Long Xie, Henglin Ge, Mingyang Zhou, Tao Chen and Yuxing Shi	ID 29. A Rolling Bearing Remaining Life Prediction Method Based on Wiener Process Data-Model Integration in the Context of Mechanical Fault Diagnosis (Online) Hongliang He, Tongtong Liu, Chao Zhang, Wenxian Yang, Fengshou Gu and Andrew Ball	ID 74. Short-term Charging Load Prediction of Electric Vehicles based on K-means Clustering WOA-BP (Online) Qifan Chen, Yunfei Ding, Kun Tian and Qiancheng Sun
09:10 - 09:24	ID 133. A Real-time Reduced Order Modeling Technique for Mistuned Bladed Disks at Variable Speeds Weifeng Long, Yugang Chen, Yue Liu and Minghui Ding	ID 90. Fluid-solid coupling vibration analysis of the wing of an underwater vehicle Haytam Mintaki and Jing Liu (Online)	ID 53. A Gas Turbine Gas Path Fault Feature Extraction Method Based on Association Network Xiaoyu Han, Yunpeng Cao and Weixing Feng	ID 41. Remaining life prediction method for rolling bearings based on RLMD-SCINet (Online) Jing Zhang, Chao Zhang, Shuai Xu, Le Wu and Hongbo Fei	ID 83. Long-term Load Forecasting Based on GSABO-ELM (Online) Jiahui Han, Fang Wang and Wei Guang Gu
09:24 - 09:38	ID 94. Bearing fault diagnosis based on an improved morphological filter (Online) Xueping Ren, Liangjian Guo, Tongtong Liu and Fuqiang Qiu	ID 100. Dynamic Modeling and Analysis of a Planetary Gear System with a Tooth Chip Fault Jingping Sui, Yi Yang, Niaoqing Hu and Zhe Cheng	ID 86. Fault diagnosis method for rolling bearings based on CVAE-GAN under limited data Wei Hao, Chao Chen, Fengfei Huang, Longqing Fan and Kai Zhang	ID 42. Similarity Remaining Life Prediction Method Based on Multiscale Feature Fusion (Online) Shuai Xu, Chao Zhang, Jing Zhang, Hongbo Fei and Le Wu	ID 123. Research on remaining useful life prediction method of rotating machinery based on the fusion of GRU and Transformer (Online) Zehua Fan, Changbo He, Yali Zhi, Yawei Hu and Yongbin Liu
09:38 - 09:52	ID 95. Fault Diagnosis of Rolling Bearing in Broad Learning System Based on Multi-Domain Feature Selection (Online) Bing Ouyang, Chao Zhang, Le Wu, Guiyi Liu, Yangbiao Wu and Shuai Xu	ID 26. Digital twin-based service system platform Zeyu Ma, Hongjun Wang and Mingliang Zhang	ID 98. Research on Fault Diagnosis Method for Rolling Bearings Based on Improved ConvNext V2 (Online) Feifan Qin, Chao Zhang, Jianguo Wang, Le Wu, Yangbiao Wu, Bing Ouyang and Guiyi Liu	ID 66. Residual life prediction of rolling bearings based on Transformer-BiGRU-Attention model with improved sparrow optimization algorithm (Online) Xunmeng An, Chao Zhang, Caiye Liu, Guiyi Liu and Jinzhang Hao	ID 146. Analysis of Battery Capacity Decay and Capacity Prediction (Online) Yan Gao, Xiaolei Shi, Fang Wang, Shiqiang Liu, Tianyi Ma, Pengfei Yan and Ce Han
09:52 - 10:06	ID 59. A physically-informed data-driven homogenization of unidirectional composites Qiang Chen, Xuefeng Chen, Xingwu Zhang, Hongrui Cao, Weifeng He	ID 1. Ultrasonic Detection of Defects in High-Density Polyethylene Pipes with FIR Filtering and Block-Wise Singular Value Decomposition Jing Rao	ID 3. A real-time fall detection system based on MoveNet and LSTM (Online) Shuxin Liu and Chengcheng Shi	ID 24. SOC estimation of lithium battery based on fractional order AUKF algorithm (Online) Junzheng Jie, Yu Gao, Yang Zhao and Ao Gao	ID 155. Research on Battery State Estimation and Prediction Model Construction (Online) Yan Gao, Xiaolei Shi, Fang Wang, Shiqiang Liu, Tianyi Ma, Pengfei Yan and Ce Han
10:06-10:30	Morning Tea Break				

Session 6-10 in 10:30-12:30 on 10th May

Time (BJT)	Session 6 Machine Condition Monitoring Fushan Bay #5 <i>Prof. Yuandong Xu</i> <i>Prof. Tongtong Liu</i>	Session 7 Fault Modelling, Detection and Diagnostics Fushan Bay #6 <i>Prof. Lingli Jiang</i> <i>Prof. Jiaojiao Ma</i>	Session 8 Artificial Intelligent and Machine Learning Fushan Bay #7 <i>Prof. Shilong Sun</i> <i>Dr. Xiaoxia Liang</i>	Session 9 Fault Modelling, Detection and Diagnostics II Fushan Bay #15 <i>Prof. Chao Zhang</i> <i>Prof. Kaibo Lv</i>	Session 10 Artificial Intelligent and Machine Learning Fushan Bay #16 <i>Prof. Kun Yu</i> <i>Dr. Jinzhen Kong</i>
10:30 - 10:44 10 th May	ID 45. Gearbox Fault Diagnosis Based on Fast Iterative Filtering Decomposition and Modified Permutation Entropy Tao Han, Peiping Gong, Qingsen Hu, Jiancheng Gong and Wuqiang Liu	ID 124. A Microscopic Damage Analysis Model for the Matrix of 8Cr4Mo4V Alloy Tianyu Ma, Gu Gong, Hongrui Cao, Jianghai Shi, Xunkai Wei and Lijun Zhang	ID 65. An Improved Residual Network for Bearing Fault Diagnosis in Strong Noise Background Jie Tao, Zhilei Zhao, Dalian Yang, Heyuan Jiang, Zhihui Cao and Piao Yang	ID 76. Fault diagnosis method of planetary gearbox based on digital twin of virtual and real data consistency Xinbin Sun, Xinyue Jia, Yanling Sun and Meiqi Dong	ID 61. MS-YOLO: An Improved Lightweight Transmission Line Insulator Defect Detection Algorithm Based on YOLOv8 (Online) Haichen Huang and Fang Wang
10:44 - 10:58	ID 48. Dynamic Response Analysis of Faulty Slewing Bearing with Three-Dimensional Localized Defects under Offset Load Conditions (Online) Xueping Ren, Fuqiang Qiu and Tongtong Liu	ID 130. Research on the Modeling Method and Parameter Identification of Bolted Cylindrical Shell Structure Based on Thin-layer Element Method Minghui Ding, Yugang Chen, Weifeng Long and Yue Liu	ID 111. A long-term prediction method of gas concentration signal with noise in fully mechanized coal mining face using CEEMDAN combined with GRU Huihan Yang, Deyi Gu, Shaokang Fu, Qibiao Lu and Jinxin Wang	ID 84. Based on ball head milling tool milling area of the tool wear value of prediction Jiacheng Liu, Hongjun Wang, Wenxian Yang, Zheng Wang, Yanyan Cui and Mingzhu Fu	ID 62. Grapevine Leaves Recognition Based on IP-ShuffleNet (Online) Linke Zhang, Yuxuan Sun and Yongsheng Yu
10:58 - 11:12	ID 60. Fault Diagnosis of Rolling Bearings Under Variable Speed Conditions Based on Order Analysis (Online) Guiyi Liu, Chao Zhang, Le Wu, Tongtong Liu and Bing Ouyang	ID 136. An Order Demodulation Analysis Method for Planetary Gearboxes Jiwei Chen, Ruitong Xie, Songsong Zhu, Mengxiong Zhao, Zhiyuan Wang and Mian Zhang	ID 116. Few-Shot Graph Neural Networks Framework incorporating DGAT for Planetary Gearbox Diagnosis Jia Gao, Peng Chen, Yaqiang Jin and Chaojun Xu	ID 127. A Digital Twin Method for Marine Engines Based on PSO Algorithm Xiaomin Zhang, Shuying Li and Yunpeng Cao	ID 68. A Review of Short-term Wind Power Forecasting Based on Artificial Intelligence Methods (Online) Yangtian Zhang, Yunfei Ding, Youren Zhang and Fudi Ge
11:12 - 11:26	ID 128. A fuzzy variable weight hierarchical condition assessment method for marine gas turbine Pan Hu, Hui Wang, Zhiwen Zheng, Yongzhi Feng and Yunpeng Cao	ID 140. Effect of Double Cracks in Thin Plates on the Second Harmonic of Nonlinear Lamb Waves Haoda Meng, Zhengjun Yang, Yunhe Zhang, Xiaoyue Guo, Wenbo Zhang and Bo Zhang	ID 118. Multi-channel Parallel Computing Capsule Network and Its Application in Mechanical Fault Diagnosis Haiwen Qiu, Jie Tao, Zhao Xiao and Wenxian Yang	ID 131. Identification of Fatigue Cracks in a Stiffness-Mistuned Blisk Based on Nonlinear Vibration Features Yue Liu, Yugang Chen, Weifeng Long and Minghui Ding	ID 70. Transmission Line Detection Method based on Improved Res2Net-YOLACT Model (Online) Qiancheng Sun, Yunfei Ding, Qifan Cheng and Kun Tian
11:26 - 11:40	ID 77. Research on the Effect of Aero-engine Connection Interface on Acoustic Emission Signals Tong Liu, Chao Liu and Dongxiang Jiang	ID 148. Differentiating Sun Gear Fault Locations by integrating On-Rotor Sensing with Tidal Cycle Xinda Du, Guojin Feng, Dawei Shi, Dong Zhen, Haiyang Li and Fengshou Gu	ID 142. Semi-supervised proxy contrastive generalization network for bearing fault diagnosis Qiuyu Song, Xingxing Jiang, Qian Wang, Jun Wang, Weiguo Huang and Zhongkui Zhu	ID 159. A Survey on Optimal Frequency Band Selection for Resonant Modulation based Planetary Gear Fault Diagnosis Mu Wang, Yuandong Xu, Lei Hu, Guangfu Bin, Xiaoli Tang and Anhua Chen	ID 44. Small sample fault diagnosis for UAV based on Siamese network with multiple similarity loss (Online) Pengwei Xiong, Zhinong Li, Fengtao Wang and Wenxian Yang

11:40 - 11:54 10 th May	ID 182. Digital twin system for condition monitoring and control of unmanned autonomous vehicle powertrain Haibo Hong ,Xin Chen ,Shisong Wei,Guoji Shen and Xinhao Shu	ID 151. Analysis of Contact Characteristics of the Planetary Cylindrical Roller Bearing Jianyu Liu, Xinbin Li, Yajun Xu, Jing Liu and Chuijian Kong	ID 147. Intelligent Fault Diagnosis of Rolling Bearing Based on DGAC-SNN Shilong Zhu, Yiqing Yang, Ronghai Wei, Weiguo Huang and Jun Wan	ID 170. Dynamic Characterization and Fault Identification of Planetary Gear Systems under Transient Loads Long Chen, Dong Zhen, Zhanbo Cui, Guojin Feng, Hao Zhang, Fengshou Gu	ID 88. DTST-MFN: Enhancing Anomalous Sound Detection with Deep Temporal Features and Efficient Attention (Online) Linke Zhang, Zhuoran Cai, Yongsheng Yu, Na Wei and Shiqi Zhang
11:54 - 12:08	ID 103. Enhancing Muscle Signal Analysis: Insights from High-Order Synchrosqueezing Wavelet Transform on Electromyography Signals (Online) Shuo Li and Gang Yu	ID 58. Active disturbance rejection pitch control of floating fan based on improved sparrow algorithm (Online) Dan Jiang, Yuan Xie, Fangyuan Lv and Wenxian Yang	ID 10. Mechanical fault diagnosis of high voltage circuit breaker based on autoencoder and metric learning (Online) Fengchao Wang, Kunquan Chen, Hongyun Li and Yakui Liu	ID 12. Sensorless control of PMSM based on sliding mode observer (Online) Yang Zhao, Binbin Li, Ao Gao and Wenhui Liu	ID 89. Speech Enhancement Method Based on Fusion Attention with Local Recurrence (Online) Linke Zhang, Yingming Wang, Zhuoran Cai and Yongsheng Yu
12:08 - 12:22	ID 120. Fault diagnosis of mechanical equipment using a distribution guided adversarial transfer network (Online) Shaowei Liu, Lianjie Shen, Zeyu Xu, Junmin Zhao, Sijie Wu and Yuyang Huang	ID 117. Research on power control outer loop based on phase locking in grid-connected inverter (Online) Jinpeng Zhou and Guochu Chen	ID 143. Enhanced Few-Shot-Sample Fault Prediction Method for Electric Drive Systems based on Transfer Learning (Online) Shichen Zhang, Zizhen Qiu, Lingxiao Zhao, Xin Huang, Fang Wang and Yang Kang	ID 107. Electromagnetic Design and Analysis of DC Solenoid Valve (Online) Shuai Xu, Yinhang Ning and Benqing Lv	ID 2. Nonlinear Process Fault Detection Based on Crayfish Optimization Algorithm with MKPCA (Online) Pengfei Li and Yang Wang
12:22 - 13:30	Lunch Break				

Session 11-15 in 13:30-16:00 on 10th May

Time (BJT)	Session 11 Structural Health Monitoring and Non-Destructive Testing Fushan Bay #5 Prof. Wei Wang Prof. Lei Hu	Session 12 Fault Modelling, Detection and Diagnostics Fushan Bay #6 Prof. Jun Wang Prof. Minmin Xu	Session 13 Artificial Intelligent and Machine Learning Fushan Bay #7 Prof. Guoxing Li Prof. Peiming Shi	Session 14 Signal and Image Processing Fushan Bay #15 Prof. Yunpeng Cao Prof. Ruicheng Wang	Session 15 Artificial Intelligent and Machine Learning Fushan Bay #16 Prof. Yuandong Xu Prof. Tongtong Liu
13:30 - 13:44 10 th May	ID 106. Structural Damage Detection of Cracked Beams Based on Nonlinear Output Frequency Response Functions and Support Vector Machine Wenbo Zhang, Xiaoyue Guo, Yunhe Zhang, Yunpeng Zhu, Bo Zhang and Zhike Peng	ID 69. Digital Twin System Based on NoSQL Database Feiyang Weng, Hongjun Wang, Fan Jiang, Zeyu Ma, Mingzhu Fu and Yanyan Cui	ID 141. A Review of Application of Spiking neural networks in equipment fault diagnosis Hanyang Wang, Ming Luo and Fengshou Gu	ID 1. Ultrasonic Detection of Defects in High-Density Polyethylene Pipes with FIR Filtering and Block-Wise Singular Value Decomposition Jing Rao	ID 79. A Review of Deep Learning Based Target Detection Algorithms (Online) Fudi Ge, Yunfei Ding, Youren Zhang and Yangtian Zhang
13:44 - 13:58	ID 114. Multi-stage damage identification of elastically restrained plates based on singular value decomposition and Faster-RCNN Hu Jiang, Jingtao Du and Yang Liu	ID 51. Enhanced Diagnosis of Wind Turbine Main Bearing Faults through Fusion of Multi-Source Signals with a Hybrid MTF-CNN-NSGAII Approach Peipei Zhou and Longyan Wang	ID 152. Gas turbine rotor fault diagnosis based on Domain Adversarial Adaptation Transfer Learning for small samples Shucong Liu and Hongjun Wang	ID 14. Research on Visual Algorithm for Fire Detection of Firefighting UAVs Based on Infrared Imaging Yunyu Ma, Kexiang Wei and Fangfang Liu	ID 80. A Review of Machine Learning-Based Icing Prediction Methods for Wind Turbine Blades (Online) Youren Zhang, Yunfei Ding, Fudi Ge and Yangtian Zhang
13:58 - 14:12	ID 139. Experimental Study on Structural Damage Detection of Cracked Beams Based on Nonlinear Output Frequency Response Functions Yunhe Zhang, Wenbo Zhang, Xiaoyue Guo, Jingya Xu, Bo Zhang and Zhike Peng	ID 78. Digital Twin-based Simulation and Virtual-Real Mapping of Inspection Cell Robots Xiulin Shi, Hongjun Wang, Fan Jang, Zeyu Ma, Mingzhu Fu and Yanyan Cui	ID 149. Cross-domain fault diagnosis of rolling bearing using adversarial transfer network Shaoning Tian, Dong Zhen, Guojin Feng, Xiaoxia Liang, Jinzhen Kong and Fengshou Gu	ID 16. Comparison of the impact of symbol aggregation approximation encoding and multiscale encoding on Lempel-Ziv complexity results Jiancheng Yin, Wentao Sui, Xuye Zhuang, Yunlong Sheng, Jianjun Wang and Rujun Song	ID 81. Acoustic Fault Identification in Maritime Vessels with limited Data using WGAN-based Approach (Online) Na Wei, Xian Zhang, Xiangyu Li, Zhuoran Cai and Yongsheng Yu
14:12 - 14:26	ID 173. Lubrication state monitoring of journal bearings based on vibration features Mengdi Li, Peiming Shi, Dongying Han, Zhifeng Hu, Yang Chen, Fengshou Gu and Andrew D. Ball	ID 145. Research on Modulation Mechanism of Planetary Gear Set Considering Time-Varying Transmission Paths with Manufacturing Error Hongxiang Jing, Guojin Feng, Long Chen, Hao Zhang, Dong Zhen and Fengshou Gu	ID 134. Transfer fault diagnostics of planetary gearbox from steady to variable operating conditions Guoyu Huang, Yun Kong, Cuiying Lin, Jie Zhang and Fulei Chu	ID 17. Marker-assisted 3D Vibration Visual Measurement with a Single Camera Ping Wang, Rongfeng Deng and Baoshan Huang	ID 28. Condition monitoring of railway vehicle suspension systems based on PCA-SVM method (Online) Fulong Liu, Honglin Guo, Xiaotao Zhang, Wei Chen and Fengshou Gu
14:26 - 14:40	ID 175. Investigation of Tower Structure Foundation Stiff-ness Variation Monitoring based on Machine Vision (Online) Yanling Cao, Rongfeng Deng, Dongqin Li, Baoshan Huang and Fengshou Gu	ID 174. Lubrication Effects on Rolling Bearing Dynamics: Modelling and Analysis Zewen Zhou, Xue Gong, Kunzuo Zhong, Bingyan Chen, Guojin Feng, Zhifeng Hu, Fengshou Gu and Andrew D. Ball	ID 99. Domain adaptive coding transfer diagnosis method and its application in fault diagnosis Jiantao Lu, Zhilin Xiao and Shunming Li	ID 37. Use Anchor-free Based Object Detectors To Detect Surface Defects (Online) Jiaxue Liu, Chao Zhang and Jianjun Li	ID 31. Small sample fault diagnosis method of point machine based on improved relation network (Online) Zhenpeng Lao, Deqiang He and Haimeng Sun

14:40 - 14:54 10 th May	ID 177. Laser Spot-assisted Long-distance Visual Measurement of Structural Vibration Guanhua Yi, Rongfeng Deng and Yanling Cao	ID 108. Bearing Fault Detection Based on Parameters-Optimized Stochastic Resonance Zuanbo Zhou, Peng Shen, Niaoqing Hu and Yi Yang	ID 109. A Fault Early Warning Method for Coal Mills Based on Causality and LSTM Model Chenlong Feng, Xin Zou, Chao Liu and Dongxiang Jiang	ID 63. Workshop Worker Pose Estimation Method Based on Spatio-Temporal Cross-Attention Yanyan Cui, Hongjun Wang, Fan Jiang, Zeyu Ma and Mingzhu Fu	ID 38. Bearing fault diagnosis method based on multi-scale dilated convolution under various noise conditions (Online) Haihang Luo, Chunqiu Tang and Yongsheng Yu
14:54 - 15:08	ID 150. A novel contrastive pre-training-based domain adaptation method for fault diagnosis of rotating machines Zhe Yang	ID 64. Welding Quality Target Detection Based on YOLOv9 Lightweight Model Mingzhu Fu, Hongjun Wang, Wenxian Yang, Fan Jiang, Zeyu Ma and Yanyan Cui	ID 104. A bearing fault diagnosis technique based on an optimized MCKD and Multi-scale DSCNN Hongjiao Luo, Yajun Shang, Kailin Jiang, Yiming Chen and Tian Ran Lin	ID 71. Industrial Gearbox Fault Diagnosis Based on Vision Transformer and Infrared Thermal Imaging Yan Li, Xunqi Cao, Haoyu Wang, Kun Yu and Yongchao Zhang	ID 72. Optimized Fault Diagnosis Method for Wind Turbine Gearbox Using PSO-based Neutrosophic K-Nearest Neighbor Algorithm (Online) Kun Tian, Yunfei Ding, Qifan Chen and Qiancheng Sun
15:08 - 15:22	ID 165. Health assessment of split torque transmission system using improved generative adversarial networks (Online) Zhi Wang, Niaoqing Hu, Fujian Xu, Yi Yang and Lei Hu	ID 110. The slippage model of outer ring faults in deep groove ball bearings induced by impact forces under load (Online) Yangbiao Wu, Chao Zhang, Guiyi Liu, Le Wu, Bing Ouyang and Feifan Qin	ID 122. Research on rolling bearing fault diagnosis method of fuzzy broad learning system based on genetic algorithm optimization (Online) Le Wu, Chao Zhang, Hongbo Fei, Feifan Qin, Guiyi Liu, Shuai Xu, Bing Ouyang, Yangbiao Wu and Jing Zhang	ID 73. Variational mode decomposition guided by time-frequency domain difference information (Online) Hongbo Fei, Chao Zhang, Shuai Xu, Jing Zhang and Le Wu	ID 92. Blind Source Separation Based on Neurally plausible alternating Optimization-based Online Dictionary Learning (NOODL) (Online) Linke Zhang, Shiqi Zhang, Yongsheng Yu, Bangling Li and Zhuoran Cai
15:22 - 15:36	ID 50. Optimized operation of multiple microgrids based on carbon ecological monitoring mechanism (Online) Ao Jiao, Hong Wang, Zhijie Wang and Han Lin	ID 121. Initial phase determination method for vibration separation technology of planetary gear train (Online) Yitao Jin, Zhi Wang, Fujian Xu, Hongtai Zhang and Yun Liao	ID 8. Short-term wind power prediction based on OLHS-DBO-BP neural network (Online) Weiguang Gu and Fang Wang	ID 47. Defect detection of transmission lines based on fusion of thermal imaging information (Online) Zhaorui Chai and Pei Niu	ID 126. Compound Faults Weak Feature Extraction of Rolling Bearing Based on Parameters Optimized CYCBD (Online) Xiang Chen, Changbo He, Yali Zhi, Jiayu Ou, Rui Yang and Zheng Cao
15:36-16:00	Afternoon Tea Break				

Session 16-20 in 16:00-18:06 on 10th May

Time (BJT)	Session 16 Maintenance Optimization and Asset Management Fushan Bay #5 <i>Prof. Tianyang Wang</i> <i>Prof. Hongjun Wang</i>	Session 17 Fault Modelling, Detection and Diagnostics Fushan Bay #6 <i>Prof. Guojin Feng</i> <i>Prof. Hao Zhang</i>	Session 18 Sensors and Instrumentation Fushan Bay #7 <i>Prof. Dezun Zhao</i> <i>Prof. Chuanjiang Li</i>	Session 19 Signal and Image Processing Fushan Bay #15 <i>Prof. Wenxian Yang</i> <i>Prof. Chao Fu</i>	Session 20 Fault Modelling, Detection and Diagnostics Fushan Bay #16 <i>Prof. Minmin Xu</i> <i>Prof. Tongtong Liu</i>
16:00 - 16:14 10 th May	ID 19. Importance analysis based on evidence theory and Bayesian Network reasoning Liming Mu and Jiaxin Wang	ID 129. Study on rolling bearing wear experiment with multi-source information monitoring Pan Yi, Yunpeng Cao and Shuying Li	ID 183. Research on intelligent few-shot fault diagnosis methods based on meta-learning Chuanjiang Li	ID 87. A Novel Time-varying Structural Element for Morphological Filtering-based Bearing Fault Diagnosis Shengbo Wang, Xiaomo Jiang, Bingyan Chen, Haibin Yang and Huaiyu Hui	ID 5. Field estimation of dynamic coefficients of journal bearing under transient operations (Online) Yang Kang, Zizhen Qiu, Siqi Han and Fengshou Gu
16:14 - 16:28	ID 36. Optimization of power output ratio for micro-grid system with renewable generation and energy storage Shengyu Gao, Qihui Yu and Wenxian Yang	ID 153. Accuracy of Instantaneous Angular Speed Signals for Fault Diagnosis of Planetary Gears: A Review Longda Yao, Xiaoli Tang, Lei Hu and Yuandong Xu	ID 9. Self-powered multifunctional artificial skin inspired by human skin Lijun He, Zhike Peng and Jie Mao	ID 132. A local synchrosqueezing based TFA post-processing tool and application to bearing fault diagnosis Jingbo Liu, Yabo Wang and Zong Meng	ID 27. Optimization of power grid operation and maintenance based on particle swarm algorithm (Online) Wenhui Liu, Binbin Li, Zhigao Chen, Wenhui Guan and Shijie Xue
16:28 - 16:42	ID 56. Secure Judgment of Line Segments Intersection Under the Malicious Model (Online) Yang-Tao Wang, Xin Liu, Shuo Liu, Ji Wang, Lu Peng, Gang Xu, Xiu-Bo Chen and Xiao-Meng Liu	ID 55. Secure Multi-party Computation of Intersection Potential and Intersection Sum without full set under the Malicious Model (Online) Xin-Yuan Guo, Xin Liu, Dan Luo, Li-Kai Jia, Gang Xu, Xiu-Bo Chen and Xiao-Meng Liu	ID 18. EIS characterization of sodium-ion batteries with different operating states Xiong Shu, Yongjing Li, Boweng Yang, Kexiang Wei and Konlayutt Punyawudho	ID 137. Research on Identification Strategy of Fault-Sensitive Frequency for Planetary Gearboxes Ruitong Xie, Mian Zhang, Jiwei Chen, Songsong Zhu, Zhiyuan Wang, Mengxiong Zhao and Hongbiao Xiang	ID 75. A Sparse Non-stationary Time Series Model with Ensemble Basis for Gearbox Fault Detection under Variable Speed Conditions (Online) Zihan Li and Yuejian Chen
16:42 - 16:56	ID 97. A Fault Early Warning Method for Centrifugal Compressors Based on Multi-Task Gaussian Processes Yongyao Dong, Xiaomo Jiang and Haibin Yang	ID 160. Research on Defect Measurement Method for Nuclear Components Based on Smooth Optimization Algorithm Yong Wang and Jianjun Li	ID 59. A physically-informed data-driven homogenization of unidirectional composites Qiang Chen, Xuefeng Chen, Xingwu Zhang, Hongrui Cao and Weifeng He	ID 156. An Approach for Infrasound Event Classification based on DenseNet-BiLSTM Fusion and Self-Attention Mechanism Zhicong Pang, Guojin Feng, Jirui Zhu, Jinzhen Kong, Dong Zhen and Pengxiao Teng	ID 101. A-weighted Short-time Fourier Transform: Acoustic Signals for Rotating Machinery Faults (Online) Wenkai Wang and Gang Yu
16:56 - 17:10	ID 158. An Investigation of Active Noise Control based on Wave-U-Net Yamin Li, Guojin Feng, Guohua Sun, Dong Zhen, Hao Zhang, Fengshou Gu	ID 168. A Two-stage Intelligent Model for State of Health Estimation of EV Lithium-ion Battery at Variable Temperatures Xiaoyu Zhao, Zuolu Wang, Haiyan Miao, Wenxian Yang, Fengshou Gu and Andrew Ball (Online)	ID 113. Dynamic compensation method for CNC crankshaft grinding machine Peishuo Zhang, Hongjun Wang and Henglin Ge	ID 162. Loosening Bolt Detection of Sling Cars based on Deep Learning and Feature Matching Kaifan Qiao, Guojin Feng, Dong Zhen, Xiaoxia Liang, Zhaozong Meng and Fengshou Gu	ID 125. Multivariate empirical wavelet transform and its application to rolling bearings (Online) Zhi Wang, Yitao Jin, Songtao Zhang, Shijun Cao and Yun Liao

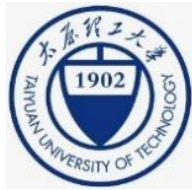
17:10 - 17:24 10 th May	ID 171. A Lightweight Parallel Convolutional Model for Abnormal Detection and Classification of Universal Robots under Varied Load Conditions (Online) Yang Guan, Zong Meng, Samuel Ayankoso, Fengshou Gu and Andrew Ball	ID 172. Power Loss Analysis of Axle Bearings of High-Speed Train Excited by Track Irregularity and Wheel Flat (Online) Yaping Luo, Weihua Zhang, Dongli Song, Fan Zhang, Fengshou Gu, Adam Bevan and Jue Gong	ID 178. Measurement of instantaneous angular parameters of rotating machinery based on visual grating Kuosheng Jiang, Jie Ren, Zhongwen Hu and Mingjun Ju	ID 176. Temperature-Influenced Material Flow Monitoring in Fused Filament Fabrication by Acoustic Emission (Online) Zhen Li, Xinfeng Zou and Baoshan Huang	ID 144. Research on the Calculation Method of Insulation Resistance for Permanent Magnet Synchronous Motor (Online) Zizhen Qiu, Wei Zhang, Penglin He, Zhiguo Kong, Fang Wang and Yang Kang
17:24 - 17:38	ID 180. Graded Metamaterial Beam for Flexural Wave Rainbowing Trapping and Multiband Energy Harvesting (Online) Weiqiang Mo, Dawei Shi and Shiqing Huang	ID 23. Research on CNN-Attention Regression Prediction Method Based on GOA Optimization (Online) Wenhui Guan, Binbin Li, Shijie Xue and Junzheng Jie	ID 161. Development of Long-Range, Low-Powered and Smart IoT Device for Detecting Illegal Logging in Forests (Online) Samuel Ayankoso, Zuolu Wang, Dawei Shi, Wenxian Yang, Allan Vikiru, Henry Muchiri, Fengshou Gu and Andrew Ball	ID 181. Experimental investigation on condition monitoring of journal bearing lubrication status based on on-rotor sensing signal (Online) Zhifeng Hu, Mengdi Li, Yang Chen, Solomon Okhionkpamwonyi, Hao Zhang, Zewen Zhou, Fengshou Gu and Andrew D. Ball	ID 163. A review of dynamic analysis and fault diagnosis for split-torque transmission system (Online) Weixin Yang, Zhi Wang, Mei Yin, Lei Hu and Yuandong Xu
17:38 - 17:52	ID 91. Optimal Dispatch of Microgrid based on Demand Side Response (Online) Hong Wang, Fengren Yang, Ge He and Zhijie Wang	ID 93. Research on Time Difference of Arrival (TDOA) Gas Leakage Source Localization Method Based on Improved Sparrow Algorithm (Online) Shijie Xue, Binbin Li, Junzheng Jie and Yang Zhao	ID 138. Self-adhesive fibre Bragg grating strain-free temperature sensor for temperature measurement in vibration environment (Online) Chenxi Liu, Pingyu Zhu, Tingyu Huang and Dejie Chen	ID 13. Experimental study on fault diagnosis of wind turbine blades based on acoustics (Online) Fangfang Liu, Kexiang Wei, Yan Yin and Yunyu Ma	ID 169. Dynamic Modeling and Analysis of Helicopter Transmission System Considering the Effect of Input Conditions (Online) Lin Yang, Jingping Sui, Xiaolan Hu, Fengqiang Qian and Lei Hu
17:52 - 18:06	ID 135. SRP sound source localization algorithm based on BSO and joint weighting (Online) Linke Zhang, Bangling Li, Yongsheng Yu and Shiqi Zhang	ID 4. Stochastic Faults Model of Integrated Electricity-gas Energy Systems Based on Epidemic Model (Online) Luxin Zhang and Yonghui Liu	ID 11. Research on self-powered sensors based on piezoelectric energy capture (Online) Ao Gao, Binbin Li, Meijie Han, Wenhui Liu and Wenhui Guan	ID 166. Lightweight-based defect detection for small target insulators (Online) Shuxin Liu, Lei Zhang, Chengcheng Shi, Shuhan Qin, Guanjuan Ji and Xiaodi Wang	ID 179. Research On Buck Converter Based On Double Closed-loop ADRC (Online) Wenying Wu, Sanbo Pan and Xin Qiao
18:06 - 18:20	Close remarks and announcing the best paper awards				

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10 Venue/Travel

The venue of the conference is the Hilton Hotel Golden Beach, Qingdao, P. R. China (青岛金沙滩希尔顿酒店). Please go to the hotel by following the below map and instructions.

Map



Conference Venue

