



PROGRAM

2021 12th CAA Symposium on Fault Detection, Supervision, and Safety for Technical Processes (CAA SAFEPROCESS 2021)

Organized by

Technical Committee on Fault Detection, Supervision, and Safety
for Technical Processes, Chinese Association of Automation

Locally Organized by

University of Electronic Science and Technology of China

Co-Sponsored by

Sichuan Society of Automation & Instrument



Chengdu, China
December 17-18 | 2021

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Organizing Committee

Sponsor	Professional Committee on Fault Diagnosis and Safety for Technical Processes, Chinese Association of Automation
Organizer	University of Electronic Science and Technology of China
Technical Co-Sponsors	Sichuan Society of Automation & Instrument
General Chair	Donghua Zhou, Shandong University of Science and Technology, China
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Publication Chair	Mengqi Zhou, IEEE Beijing Section, China

Publication Co-Chairs	Youqing Wang, Shandong University of Science and Technology, China Huiyu Jin, Xiamen University, China Lulu Tian, University of Electronic Science and Technology of China, China Jinliang Shao, University of Electronic Science and Technology of China, China Hanmin Sheng, University of Electronic Science and Technology of China, China Jinhua Mi, University of Electronic Science and Technology of China, China
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Secretariat	Xiaosheng Si, Rocket Force University of Engineering, China
Members	Zhiqiang Ge, Xiao He, Changhua Hu, Bin Jiang, Yaguo Lei, Tao Peng, Xiaosheng Si, Youqing Wang, Zhengxin Weng, Ying Yang, Hao Ye, Shen Yin, Chunjie Zhou

Welcome Message from General Chair



Donghua Zhou
General Chair of 2021

Dear Friends and Colleagues,

The 12th CAA Symposium on Fault Detection, Supervision, and Safety for Technical Processes (CAA SAFEPROCESS 2021) will be held during Friday through Sunday, December 17-18, 2021, in Chengdu, a beautiful city of southwestern China.

CAA Symposium on Fault Detection, Supervision and Safety for Technical Processes (SAFEPROCESS) is a biennial forum of excellence, which was organized by the Technical Committee on SAFEPROCESS, Chinese Association of Automation (CAA). This year, it is organized by University of Electronic Science and Technology of China. It aims to bring together the international researchers of this field to discuss the latest findings and advances. It will feature plenary lectures, contributed and invited sessions, and poster sessions. The English paper of the symposium might be included in the IEEE Xplore library.

The conference provides an up-to-date and comprehensive picture of safety methods and techniques, with a wide coverage of application fields. This year, three world-class scholars will give plenary presentations for audiences.

Together with the Organizing Committee, we are trying our best to ensure a diverse and brilliant program. We wish to have the pleasure to meet you at Chengdu in August.

A handwritten signature in black ink, consisting of stylized Chinese characters '周东华' (Zhou Donghua).

Donghua Zhou
General Chair of CAA SAFEPROCESS 2021

Message from Technical Program Chair



Yuhua Cheng
Program Committee Chair

Dear Friends and Colleagues,

On behalf of the Technical Program Committee, it is our great honor to welcome you to the 2021 CAA Symposium on Fault Detection, Supervision and Safety for Technical Processes (CAA SAFEPROCESS 2021) in Chengdu, China.

SAFEPROCESS is a biennial symposium which has proven to be one of the excellent forums for scientists, researchers, engineers, and industrial practitioners to present and discuss the latest technological advancements as well as future directions and trends in Fault Detection, Supervision and Safety for Technical Processes. CAA SAFEPROCESS 2021 has received enthusiastic responses with a total of 206 submissions. After a rigorous peer-review process, 191 papers were accepted and included in the conference proceedings, which are divided into 102 oral sessions and 2 poster sessions for presentation.

On behalf of the Technical Program Committee, we would like to thank all reviewers for giving time and expertise to provide comments, which are important to the Committee in making a fair decision. We sincerely thank the invited session organizers and all the members of the Technical Program Committee for their dedicated work and thorough effort. We also convey our heartfelt thanks to the authors, plenary speakers, the session chairs, and the volunteers, without whose participation and contribution the CAA SAFEPROCESS 2021 program is impossible.

We do hope you enjoy the Symposium as well as Chengdu.

A handwritten signature in black ink, consisting of stylized Chinese characters.

Yuhua Cheng
Program Committee Chair of CAA SAFEPROCESS 2021

Keynote Address

Saturday, December 18, 2021

Keynote Address 1



Prof. Sizhao Qin
City University of Hong Kong

Address Title: Dynamic Feature Analysis for Production Performance Troubleshooting

Bio: Sizhao Qin obtained his B.S. and M.S. degrees in Automatic Control from Tsinghua University in Beijing, China, in 1984 and 1987, respectively, and his Ph.D. degree in Chemical Engineering from University of Maryland at College Park in 1992. He began his professional career in 1992 as a principal engineer at Emerson Process Management, a subsidiary of Emerson Electric, to work on advanced process control. After having developed two advanced control products, he joined the University of Texas at Austin as an assistant professor in 1995. He was promoted to associate professor and professor in 2000 and 2003, respectively, and was the holder of the Paul D. and Betty Robertson Meek and American Petrofina Foundation Centennial Professorship in Chemical Engineering until 2007. From 2007 to 2019 he was the Fluor Professor at the Viterbi School of Engineering of the University of Southern California. He was co-director the Texas-Wisconsin-California Control Consortium (TWCCC) where he was Co-PI for 24 years to conduct research on industry-sponsored projects. His research has directly impacted around 50 corporations who have been members of the Consortium. He is currently Chair Professor of Data Science at the City University of Hong Kong.

Dr. Qin's research interests include data analytics, machine learning, latent variable methods; high-dimensional time series latent variable modeling, process monitoring and fault diagnosis, model predictive control, system identification, semiconductor manufacturing control, and data-driven control and optimization. He has over 400 publications in international journals, book chapters, conference papers, and conference presentations with peer-reviewed abstracts. He delivered over 50 invited plenary or keynote speeches and over 120 invited technical seminars worldwide.

He is a recipient of the National Science Foundation CAREER Award, the 2011 Northrop Grumman Best Teaching award at Viterbi School of Engineering, the DuPont Young Professor Award, Halliburton/Brown & Root Young Faculty Excellence Award, NSF-China Outstanding Young Investigator Award, and recipient of the IFAC Best Paper Prize for a model predictive control survey paper published in Control Engineering Practice. He served as Senior Editor of Journal of Process Control, Editor of Control Engineering Practice, Member of the Editorial Board for Journal of Chemometrics, and Associate Editor for several other journals.

Keynote Address 2



Prof. Donghua Zhou
Shandong University of Science and Technology

Address Title: Real-time Fault Diagnosis Method for Brake System of High-Speed Train

Bio: Donghua Zhou was born in Jiangyin, Jiangsu Province. He used to be the director of the Automation Department of Tsinghua University. Member of the Standing Committee of the Party Committee and Vice President of Shandong University of Science and Technology in June 2015.

His main research interests include fault diagnosis, fault tolerant control and operation safety evaluation theory of dynamic systems. CAA/IET/IEEE Fellow, Changjiang Scholar Distinguished Professor of the Ministry of Education, National "Ten Thousand Talents Program" Leading Talents, National Outstanding Youth Fund Winning Talents, Shandong Taishan Scholar Leading Talents in Advantage and Characteristic Disciplines, Leader of Outstanding Innovation Group of National Natural Science Foundation, Professor of Tsinghua University (Double Recruited); Member of IFAC Technical Process Fault Diagnosis and Safety Technical Committee, member of the Seventh "Control Science and Engineering" Discipline Evaluation Group of the State Council; He is also the vice chairman of the Chinese Association of Automation and the director of the Technical Process Fault Diagnosis and Safety Committee.

Keynote Address 3



Prof. Yongduan Song
Chongqing University

Address Title: Fault Tolerant Control for Dynamic Systems: Advances and Prospects

Bio: Yongduan Song received his Ph.D. degree in electrical and computer engineering from Tennessee Technological University, Cookeville, TN, USA, in 1992. He held a tenured full professor position with North Carolina Agricultural and Technical State University, Greensboro, NC, USA, from 1996 to 2008, and a Langley Distinguished Professor position with the National Institute of Aerospace, Hampton, VA, USA, from 2005 to 2008. He was one of the six Langley Distinguished Professors with the National Institute of Aerospace (NIA), and the Founding Director of the Center for Cooperative Systems with NIA. He is currently the Dean of the School of Automation, Chongqing University, Chongqing, China, and the Founding Director of the Institute of Smart Engineering, Chongqing University.

Dr. Song is a leading researcher in neural networks (NN) based adaptive control, significantly contributing to both NN theory methods and engineering applications. He is very active as associate editors for top IEEE journals, including IEEE Trans. on Neural Networks, IEEE Trans. on Automatic Control, IEEE Trans. Systems, Man, and Cybernetics, IEEE Trans. on Intelligent Transportation Systems, IEEE Trans. on Cognitive and Developmental Systems. As a scientific leader in the field of systems and control, he has been serving on various national and international technical committees.

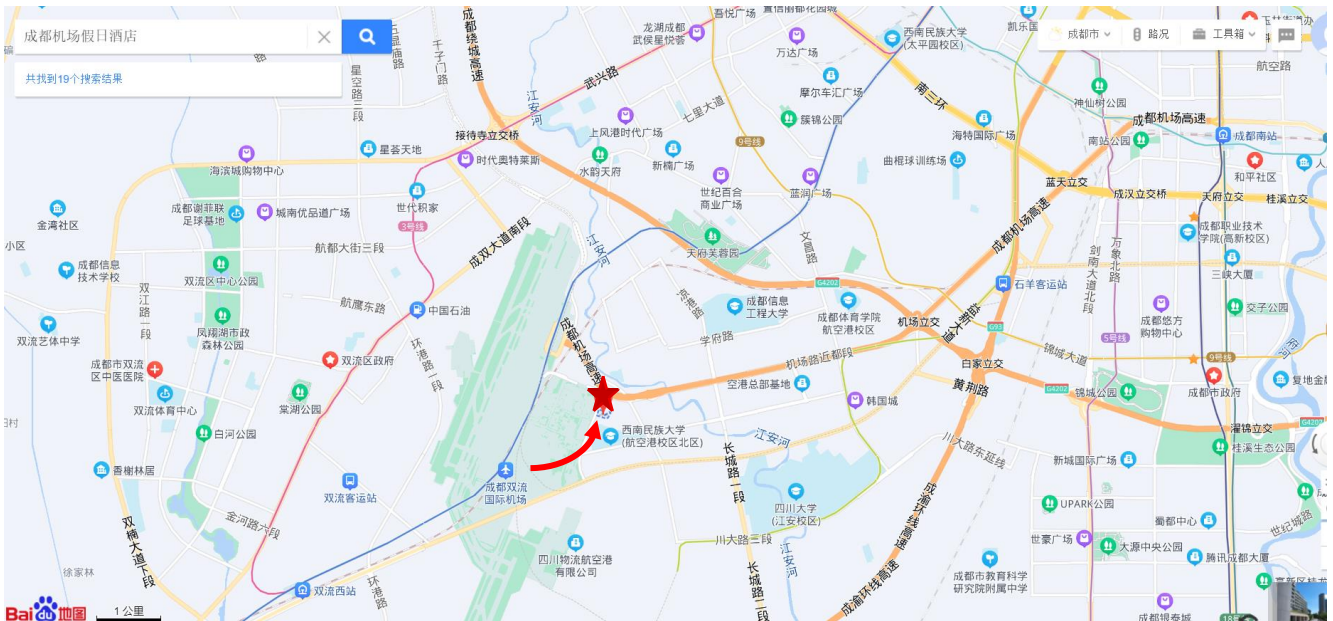
Prof. Song has made original contributions in neural network adaptive control of nonlinear systems with real world applications, which can be assessed by his publications (over 200 papers) in prestigious international journals, including IEEE T-NNLS, IEEE T-FS, IEEE T-SMC, IEEE T-Cybernetics, IEEE T-AC, IEEE T-IE and Automatica. He authored/co-authored 11 books in the field of control and artificial intelligence. He also held over 50 patents, and has given numerous keynote speeches and invited talks, chaired several conferences.

General Information

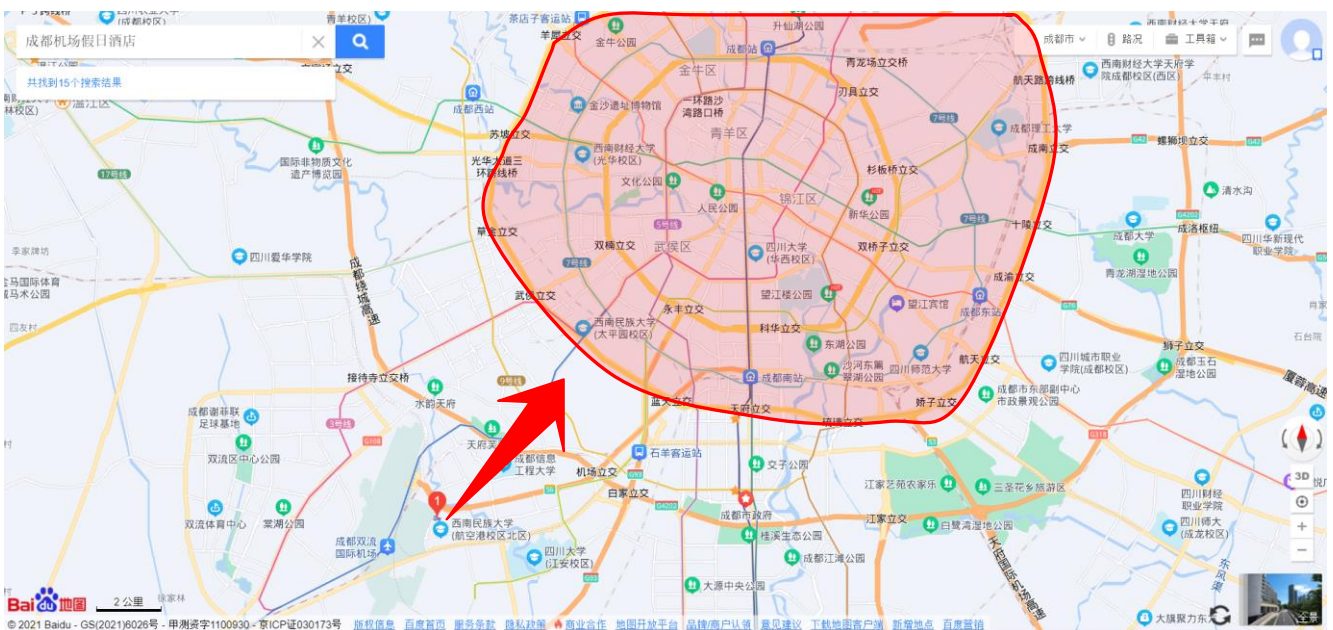
The Holiday Inn Hotel Chengdu Airport (成都机场假日酒店) is located in the No.62, Airport South fourth Road, Shuangliu District. The hotel provides a 24-hour shuttle bus to and from the airport, saving you valuable time and energy.

Transportation Information

The hotel located in Airport South fourth Road, Shuangliu District, where near the Shuangliu airport, Subway Line 10, Subway Line 3.



You will soon be able to travel to the central of Chengdu City from the Hotel.



Surrounding Information

As the capital of Sichuan Province, Chengdu is renowned for its fertile land and agricultural wealth in history, making it holding many titles like “Land of Abundance”, “City of Brocade” and “City of Hibiscus”. In modern days, Chengdu has developed into a metropolis in West China with a population of 16 million, which live in its 5 urban districts, 7 sub-urban districts and 8 counties. Chengdu now serves as the economic center, the science and technology harbor, the international exchange center, the cultural innovation city and the transportation hub of western China. The economic growth pace of Chengdu is higher than national average by 1.4 percentage points, making it the "fourth pole" of economic development in mainland China.



Here are some places worth visiting in Chengdu:

Chengdu Research Base of Giant Panda Breeding (成都大熊猫繁育研究基地)

Chengdu Research Base of Giant Panda Breeding is located at 1375 Waibei panda Avenue, Chenghua District, Chengdu City, Sichuan Province, China. It is 10 kilometers away from the city center and more than 30 kilometers away from Chengdu Shuangliu International Airport. It is a world-famous base for ex situ conservation, scientific research and breeding, public education and education tourism of giant pandas. The base covers an area of 1500 mu. As an "ecological demonstration project for ex situ conservation of giant panda", it is famous for the protection and breeding of giant panda, red panda and other endangered wildlife in China. The mountains here are full of beauty, the clear water is like a mirror, the forest waves are in bursts, and a hundred birds are singing harmoniously. It is known as "the natural paradise of national treasure, our paradise".

Transportation: You can take the rail transit line 7 (get on at the East Chengdu Railway station, get off at the Simaqiao station), then take the rail transit line 3 (get off at the Panda Avenue station). Take bus d025 / 198 / 198a from Metro entrance A to panda base station.



Kuai Zhai Zane (宽窄巷子)

Kuanzhai Zane is located near Changshun street, Qingyang District, Chengdu City, Sichuan Province. It is composed of Kuan alley, Zhai alley and Jing alley in parallel. All of them are antique quadrangles with indigo tiles. It is also a relatively large-scale ancient street of the Qing Dynasty left over from Chengdu. Together with Daci Temple and Wenshu courtyard, it is also known as the protection block of Chengdu's three famous historical and cultural cities. At the same time, the stalls and shops in the alleys sell all kinds of snacks, handicrafts and books with Sichuan characteristics for tourists to buy.

There are also cultural, catering and leisure shops such as Starbucks and Longtang Inn in Kuanzhai Zane.

Transportation: you can take the rail transit line 2(get on at the East Chengdu Railway station, get off at the Tonghuimen station)



Wuhou Shrine(武侯祠)

Wuhou Shrine, located in the south of Chengdu, covers an area of about 150,000 square meters. It is the only place in China which was built in honor of both an emperor and his minister in one temple. It is not only the most famous memorial hall commemorating Zhuge Liang, Liu Bei and other heroes of the Kingdom Shu, but also the world's most influential museum about the ancient relics of the Three Kingdoms. It has always been reputed as 'the sacred land of the Three Kingdoms'. In 1961 Wuhou Temple was designated as one of the first batch of the national key cultural relics under the state protection by the State Council, and in 2008 the museum was rated as a national first-class museum. Wuhou Shrine comprises three sections, namely the Relics Section, the Garden Section, and the Ancient Jinli Street.

Transportation: You can take the rail transit line 2(get on at the East Chengdu Railway station, get off at the Chunxi Road station), then take the rail transit line3 (get off at the Gaoshengqiao station).



Dufu Thatched Cottage(杜甫草堂)

Du Fu Thatched Cottage is the former Chengdu residence of the famous Tang Dynasty poet Du Fu. Du Fu lived here for nearly four years. During his stay, he created hundreds of poems. This place is thus regarded as the “holy land” of Chinese literature. Today's Du Fu Thatched Cottage has survived multiple dynasties and been restored many times. The most important architecture of the place is his former residence, the thatched house. This former residence was built with the architectural characteristics of the western Sichuan civilian residences.

Transportation: You can take the rail transit line 2(get on at the East Chengdu Railway station, get off at the Chengdu University of TCM & Sichuan Provincial People Hospital station), then take the rail transit line 4 (get off at the Caotang Road North station).



Conference Registration

A conference registration desk will be set up and opened at The Holiday Inn Hotel Chengdu Airport (成都机场假日酒店), Chengdu from December 17(13:00) as followings: December 17-18, 2021: 13:00-20:00 Registration Area, first floor, The Holiday Inn Hotel Chengdu Airport, Chengdu.

Registration Type \ Special Time	Advance (Though July 16)	Regular (After July 16)
IEEE Members & Students	2300 Yuan	2600 Yuan
Non-Members	2600 Yuan	2800 Yuan
NO Paper Members	2000 Yuan	2200 Yuan
Second Paper for The Same Author	1600 Yuan	1600 Yuan
Extra Page Fee (>6 Pages)	200 Yuan /Page	200 Yuan /Page

Notes:

- (1) IEEE Members & Students should provide the certificate and can use it for only once.
- (2) The second paper registration fee for non-student authors is 1600 Yuan. The second paper of the student author and the third paper of the non-student author should pay the registration fee as the ordinary author paper.
- (3) Papers of more than 6 pages will be charged 200 Yuan/Page for extra pages. The papers should less than 8 pages.

Program at a Glance(英文版)

	December 17 (Friday)							
11:00~23:00	Registration (Location: Holiday Inn Hotel Chengdu Airport (成都机场假日酒店))							
15:30~17:30	Committee Meeting of Technical Process Fault Diagnosis and Safety Professional Committee of Chinese Association of Automation (三楼主会场 (大会报告厅))							
18:00~20:00	Dinner							
	December 18 (Saturday) 8:30~12:00, General Assembly Lecture Room							
8:50~9:00	Opening Ceremony, Speech by Leader of Organizer (University of Electronic Science and Technology of China)						Host: Yuhua Cheng	
9:00~9:10	Opening Ceremony, Speech by Professor Hu Changhua (including the explanation of Fang Chongzhi Excellent Paper Award)							
9:10~9:55	Keynote Address 1: Professor Sizhao Qin, IEEE Fellow, 《Dynamic Feature Analysis for Production Performance Troubleshooting》							
9:55~10:25	Group photo and tea break							
10:25~11:10	Keynote Address 2: Professor Donghua Zhou, 《Real-time Fault Diagnosis Method for Brake System of High-Speed Train》						Host: Chunhua Yang	
11:10~11:55	Keynote Address 3: Professor Yongduan Song, 《Fault Tolerant Control for Dynamic Systems: Advances and Prospects》							
12:00~13:00	Lunch							
	December 18 (Saturday) 13:50~18:30, Branch Venue							
	Room 1	Room 2	Room 3	Room4	Room 5	Room 6		Post Area in Floor 3
13:30~15:00	Group 1A	Group 2A	Group 3A	Group 4A	Group 5A	Group 6A	13:30~15:20	Post papers, Q&A
15:00~15:20	Tea Break							
15:20~16:50	Group 1B	Group 2B	Group 3B	Group 4B	Group 5B	15:20~17:05(7 papers) Fang Chongzhi Best Paper Award Session	15:20~16:50	Post papers, Q&A
16:50~18:20	Group 1C	Group 2C	Group 3C	Group 4C	Group 5C			
	December 18 (Saturday) 18:30~20:30							
18:30~18:40	Award for Fang Chongzhi Excellent Papers Awards						Host of the closing ceremony: Bin Jiang	
18:40~18:50	Leader speech							
18:50~18:55	Speech by the Organizer							
18:55~19:00	Speech by the Organizing of the 13th Academic Conference							
19:00~20:30	Dinner							

Program at a Glance(中文版)

	12月17日（周五）							
11:00~23:00	注册（地点：成都机场假日酒店）							
15:30~17:30	中国自动化学会技术过程的故障诊断与安全性专业委员会全体委员会议(三楼主会场（大会报告厅）)							
18:00~20:00	晚餐（地点：成都机场假日酒店）							
	12月18日（周六）上午8:30~12:00，大会报告厅							
8:50~9:00	开幕式，承办单位领导致辞（电子科技大学）							主持人：程玉华
9:00~9:10	开幕式，专委会胡昌华教授致辞（含方崇智优秀论文奖说明）							
9:10~9:55	大会报告1：秦泗钊教授/IEEE Fellow，《产品性能检修中的动态特征分析》							
9:55~10:25	合影及茶歇							
10:25~11:10	大会报告2：周东华教授/副校长，《高速列车制动系统实时故障诊断方法》							主持人：阳春华
11:10~11:55	大会报告3：宋永端教授/IEEE Fellow，《动态系统容错控制：进展与展望》							
12:00~13:00	午餐（地点：成都机场假日酒店）							
	12月18日（周六）下午13:50~18:30 分会场							
	Room 1	Room 2	Room 3	Room 4	Room5	Room 6		张贴区（三楼）
13:30~15:00	小组报告1A	小组报告2A	小组报告3A	小组报告4A	小组报告5A	6人组6A	13:30~15:20	张贴区：张贴论文展示答疑
15:00~15:20	茶歇							
15:20~16:50	小组报告1B	小组报告2B	小组报告3B	小组报告4B	小组报告5B	15:20~17:05 (7人组) 方崇智最佳论文评奖会	15:20~16:50	张贴区：张贴论文展示答疑
16:50~18:20	小组报告1C	小组报告2C	小组报告3C	小组报告4C	小组报告5C			
	12月18日（周六）晚上18:30~20:30							
18:30~18:40	优秀论文颁奖							闭幕式主持人：姜斌
18:40~18:50	领导讲话							
18:50~18:55	本届承办单位发言							
18:55~19:00	第13届学术会议承办单位发言							
19:00~20:30	晚宴（桌餐），晚宴后原则上即可自由安排							

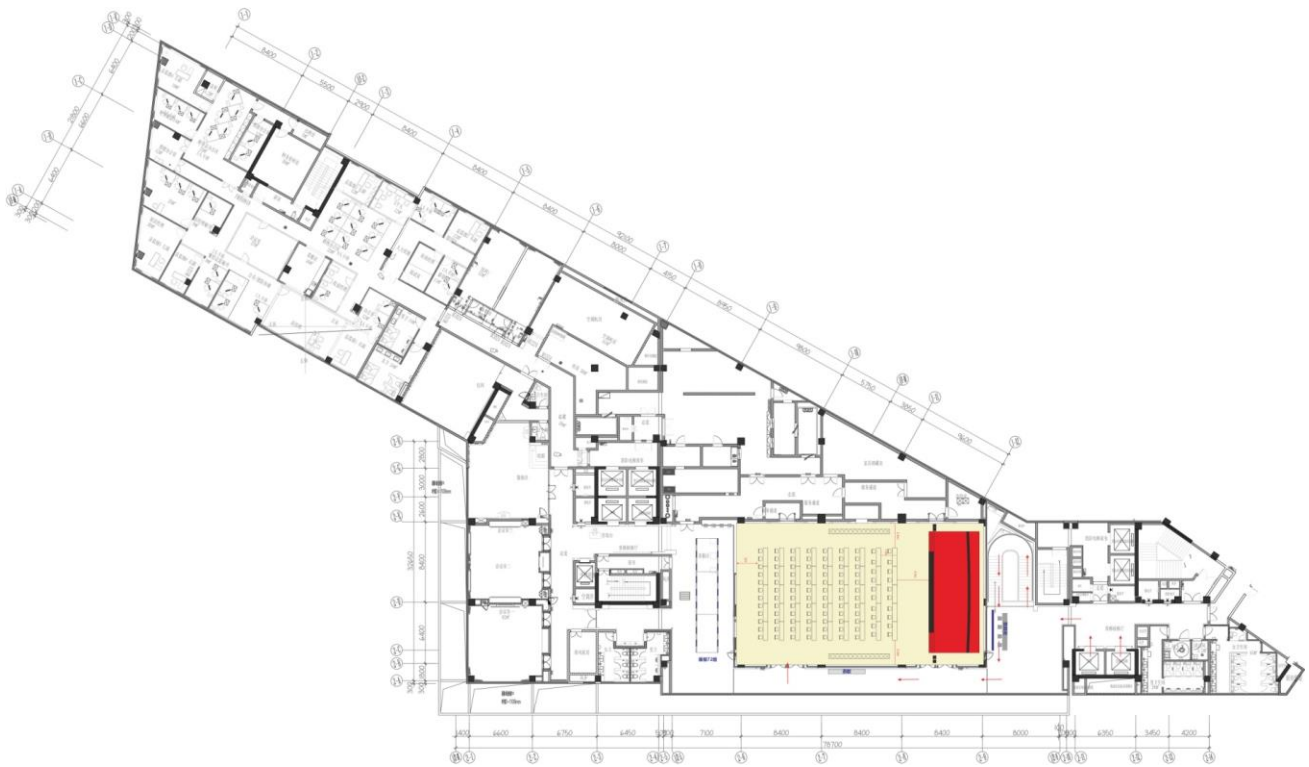
“腾讯会议”线上会议对应房间 ID 号（12 月 17 日—18 日）

时间	内容	现场地点	线上会议室 ID 号及密码
——12 月 17 日（星期五）——			
15:30~17:30	中国自动化学会技术过程的故障诊断与安全性专业委员会全体委员会议	大会报告厅（三楼）	腾讯会议 ID: 647 233 152; 密码: 123456
——12 月 18 日（星期六）——			
8:50~9:00	开幕式, 承办单位领导致辞（电子科技大学）	大会报告厅（三楼）	腾讯会议 ID: 712 187 252; 密码: 123456
9:00~9:10	开幕式, 专委会胡昌华教授致辞（含方崇智优秀论文奖说明）		
9:10~9:55	大会报告 1: 秦泗钊教授/IEEE Fellow, 《产品性能检修中的动态特征分析》		
10:25~11:10	大会报告 2: 周东华教授/副校长, 《高速列车制动系统实时故障诊断方法》		
11:10~11:55	大会报告 3: 宋永端教授/IEEE Fellow, 《动态系统容错控制: 进展与展望》		
13:30~15:00	小组报告 1A	Room1	腾讯会议 ID: 774 344 893; 密码: 123456
	小组报告 2A	Room2	腾讯会议 ID: 335 980 041; 密码: 123456
	小组报告 3A	Room3	腾讯会议 ID: 853 127 608; 密码: 123456
	小组报告 4A	Room4	腾讯会议 ID: 341 581 637; 密码: 123456
	小组报告 5A	Room5	腾讯会议 ID: 833 721 995; 密码: 123456
	小组报告 6A	Room6	腾讯会议 ID: 512 382 114; 密码: 123456
15:20~16:50	小组报告 1B	Room1	腾讯会议 ID: 120 478 399; 密码: 123456
	小组报告 2B	Room2	腾讯会议 ID: 179 972 556; 密码: 123456
	小组报告 3B	Room3	腾讯会议 ID: 589 469 243; 密码: 123456
	小组报告 4B	Room4	腾讯会议 ID: 138 125 860; 密码: 123456
	小组报告 5B	Room5	腾讯会议 ID: 491 315 196; 密码: 123456
16:50~18:20	小组报告 1C	Room1	腾讯会议 ID: 354 329 160; 密码: 123456
	小组报告 2C	Room2	腾讯会议 ID: 895 474 131; 密码: 123456
	小组报告 3C	Room3	腾讯会议 ID: 715 408 656; 密码: 123456
	小组报告 4C	Room4	腾讯会议 ID: 538 294 292; 密码: 123456
	小组报告 5C	Room5	腾讯会议 ID: 206 876 630; 密码: 123456
15:20~17:05 (7 人组)	方崇智最佳论文评奖会小组报告	Room6	腾讯会议 ID: 225 138 150; 密码: 123456
18:30~20:30	优秀论文颁奖 领导讲话 本届承办单位发言 第 13 届学术会议承办单位发言	大宴会厅（三楼）	腾讯会议 ID: 975 310 136; 密码: 123456

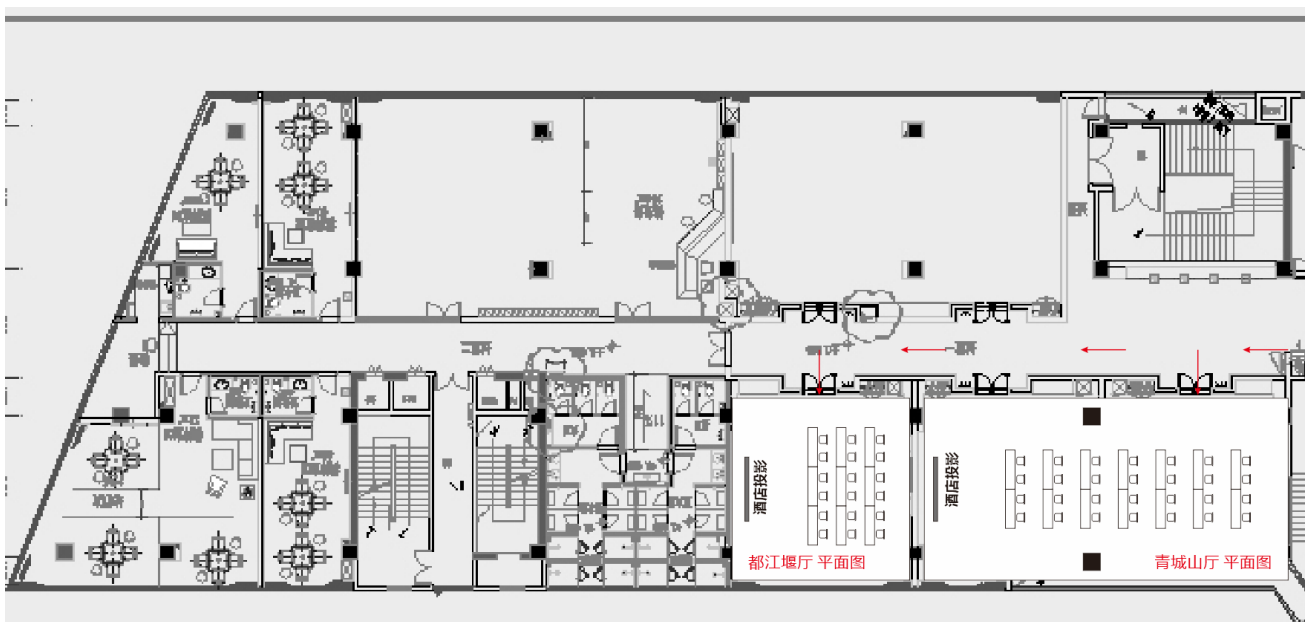
Technical Programmes

The venue layout of the conference

(Third floor)



(second floor)



Poster template

(Size: 90cm × 150cm)

>The style is for reference only<



Oral Presentations

Saturday, December 18, 2021

---大会报告厅---

Keynote Address 1 (9:10-9:55)

Dynamic Feature Analysis for Production Performance Troubleshooting

Sizhao Qin

City University of Hong Kong

Keynote Address 2 (10:25-11:10)

Real-time Fault Diagnosis Method for Brake System of High-Speed Train

Donghua Zhou

Shandong University of Science and Technology

Keynote Address 3 (11:10-11:55)

Fault Tolerant Control for Dynamic Systems: Advances and Prospects

Yongduan Song

Chongqing University

—Room 1—

T01: Model based diagnosis (13:30-15:00) (1A)

Candidate Chairs:	<i>Maiying Zhong (Shandong University of Science and Technology) Li Sheng (China University of Petroleum (East China))</i>	Note
1.	<u>Sensor Fault Estimation of Complex Networks Under Event-Triggered Communication</u> Yanhua Dong (Shandong University of Science and Technology), Yang Liu (Shandong University of Science and Technology), Maiying Zhong (Shandong University of Science and Technology), Ting Xue (Shandong University of Science and Technology)	
2.	<u>Robust Fault Detection Approach for Switched Time-Delay Systems by Using Sliding Mode Observer</u> Shafqat Ali (Harbin Institute of Technology, Harbin, China), Yuchen Jiang (Harbin Institute of Technology), Faisal Shah (Harbin Institute of Technology), Hao Luo (Harbin Institute of Technology), Xianling Li (Wuhan Second Ship Des. & Res. Ins.), Shen Yin (Norwegian University of Science and Technology, 7033 Trondheim, Norway)	
3.	<u>A Diagnosis Method for IGBT and Current Sensor Faults of Two-level Inverter Used in Traction Systems</u> Hongwei Tao (Central South University), Tao Peng (Central South University), Chao Yang (Central South University), Shicai Yin (Central South University), Zhiwen Chen (Central South University), Xinyu Fan (Central South University)	
4.	<u>A New Fault Diagnosis Model of Flywheel System based on Belief Rule Base and Fuzzy Fault Tree Analysis</u> Shanshan Liu (Harbin Normal University), Wei He (Harbin Normal University), Hailong Zhu (Harbin Normal University), You Cao (Rocket Force University of Engineering), Xiaoxia Han (Rocket Force University of Engineering)	
5.	<u>Detection of Intermittent Fault for Stochastic Multi-Agent Systems With Time-Delay</u> Sen Zhang (China University of Petroleum (East China)), Yichun Niu (China University of Petroleum (East China)), Ming Gao (China University of Petroleum (East China)), Li Sheng (China University of Petroleum (East China))	
6.	<u>Sensor Fault Detection based on Fractional-Order Chaotic System Under Strong Noise and Disturbance</u> Fei Qi (Chongqing University), Huang Pengfei (Chongqing University), Yi Chai (Chongqing University), Xinyi Li (Chongqing University), Yunling Liu (Chongqing University), Zheren Zhu (Zhejiang University)	

T01&T02: Model based diagnosis & Data-driven diagnosis methods (15:20-16:50) (1B)

Candidate Chairs:	<i>Cong Wang (South China University of Technology) Ying Yang (Peking University)</i>	Note
1.	<u>State Estimation of MEMS Electromagnetic Micromirror Systems by Unscented Kalman Filter</u> Guangyu Zhao (Donghua university), Ruili Dong (Donghua University), Yonghong Tan (Shanghai Normal University)	

2.	<u>Convergence Analysis for A Cooperative Distributed Model Predictive Control Algorithm based on Fixed Point Iteration</u>	
	Jia Wang (College of Engineering, Peking University), Ying Yang (Peking University)	
3.	<u>Sensor Fault Diagnosis Observer Design based on Deterministic Learning</u>	
	Tianrui Chen (Guangdong University of Technology), Zejian Zhu (South China University of Technology), Cong Wang (South China University of Technology)	
4.	<u>Moving Window DKPCA Monitoring Method Using Adaptive Window Adjustment</u>	
	Qi Zhang (Yunnan University), Peng Li (Yunnan University), Xun Lang (Yunnan University), Aimin Miao (Zhongkai University of Agriculture and Engineering)	
5.	<u>Fault Diagnosis for The Planetary Gearbox based on An Improved LightGBM</u>	
	Siyuan Zhang (Shandong University of Science and Technology), Yang Liu (Shandong University of Science and Technology)	
6.	<u>A Fault Reconstruction Strategy for Fault Diagnosis of State-Related Multiplicative Faults</u>	
	Kai Wang (Central South University), Zhiying Guo (Central South University), Yalin Wang (Central South University)	

T02: Data-driven diagnosis methods (16:50-18:20) (1C)

Candidate Chairs:	<i>Peiliang Wang (Huzhou University)</i> <i>Tianzhen Wang (Shanghai Maritime University)</i>	Note
1.	<u>Fault Root Cause Diagnosis Method based on Recurrent Neural Network and Granger Causality</u>	
	Gang Shen (Huzhou University), Peiliang Wang (Huzhou University), Kailiang Hu (Huzhou University), Qiuyang Ye (Huzhou University)	
2.	<u>Impact Fault Detection for Marine Current Turbine Blade via Hilbert Envelope Spectrum and PCA</u>	
	Tao Xie (Shanghai Maritime University), Tianzhen Wang (Shanghai Maritime University)	
3.	<u>Transfer Learning with Unsupervised Domain Adaptation Method for Bearing Fault Diagnosis</u>	
	Xiaohan Chen (Xian Jiaotong-Liverpool University), Rui Yang (Xi'an Jiaotong-Liverpool University), Huiqing Wen (Xi'an Jiaotong-Liverpool University), Steven Guan (Xi'an Jiaotong-Liverpool University)	
4.	<u>A Data Driven RUL Prediction and Predictive Maintenance for Stochastic Degrading Systems</u>	
	Yuhan Zhang (Peking University), Ying Yang (Peking University)	
5.	<u>A Data Decorrelation Strategy based Method for Rolling Bearing Incipient Complex Fault Diagnosis</u>	
	Yang Jing (Tianshui Normal University), Guo Xie (Xi'an University of Technology), Yanxi Yang (Xi'an University of Technology)	
6.	<u>A Fault Detection Method based on Oriental Hyper-bounding Box</u>	
	Jianxue Sang (Tsinghua University), Guangguo Lou (Xichang Satellite Launch Center), Yang Li (Xichang Satellite Launch Center), Tong Zhao (Xichang University)	

—Room 2—

T02&T16: Data-driven diagnosis methods & Risk estimation of control systems (13:30-15:00) (2A)

Candidate Chairs:	<i>Jing Wang (North China University of Technology) Kuangrong Hao (Donghua University)</i>	Note
1.	<u>Solder Joint Defect Detection based on Depth Image CNN for 3D Shape Classification</u> Zifan Shao (Donghua University), Kuangrong Hao (Donghua University), Bing Wei (Donghua University), Xue-song Tang (Donghua University)	
2.	<u>An Optimized Fault Diagnosis Method for Nonlinear Processes with Effective Suppression of the Fault Smearing Effect</u> Yiping Xu (North China Electric Power University), Guang Wang (North China Electric Power University)	
3.	<u>Performance Degradation Analysis of Railway Vehicle Door System based on Density Peak Clustering</u> Xiaoxiao Ma (Nanjing University of Aeronautics & Astronautics), Zhixing Xu (Nanjing Kangni Mechanical & Electrical Co., Ltd), Ningyun Lu (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.)	
4.	<u>An Optimized Weak Target Recognition Method based on Transform Domain with Strong Background Noise</u> Shuyue Guan (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Zhenyuan Zhang (Chongqing Jiaotong University)	
5.	<u>A Support Vector Machine based Classification Method for Hyper/Hypocalcemia Diagnosis</u> Sen Wang (Beijing University of Chemical Technology), Qibing Jin (Beijing University of Chemical Technology), Jing Wang (North China University of Technology)	
6.	<u>Quantitative Evaluation on Hazard Causation of High-speed Railway Signal System</u> Jiuhong Li (Beijing Jiaotong University), Jintao Liu (Beijing Jiaotong University)	

T02: Data-driven diagnosis methods (15:20-16:50) (2B)

Candidate Chairs:	<i>Xiuqing Wang (Hebei Normal University) Feng Lv (Hebei Normal University)</i>	Note
1.	<u>Subspace Identification and Fault Detection of Interconnected Systems</u> Xiaolu Chen (Beijing University of Chemical Technology), Jing Wang (North China University of Technology), Zhou Meng (North China University of Technology)	
2.	<u>Fault Diagnosis for Rolling Bearing based on RF-LSTM</u> Qiuting Li (Hebei Normal University), Xiuqing Wang (Hebei Normal University), Yunpeng Yang (Hebei Normal University), Ruiyi Wang (Hebei Normal University), Feng Lv (Hebei Normal University)	

3.	<u>RNN-based Multi-Step Prediction of Key Effluent Indicator in Wastewater Treatment Process</u>	
	Lu Zhang (Shandong University of Science and Technology), Maiying Zhong (Shandong University of Science and Technology)	
4.	<u>An Intelligent Fault Diagnosis Method for Planetary Gearbox based on the MPSO Optimizing the Bi-LSTM Parameter Combination</u>	
	Shenyang Cao (Chongqing University), Ke Zhang (Chongqing University), Yiyao An (Chongqing University), Lu Wang (Chongqing University)	
5.	<u>Sparse DiPCA for Dynamic Process Monitoring</u>	
	Jingxin Zhang (Tsinghua University), Donghua Zhou (Tsinghua University), Maoyin Chen (Tsinghua University)	
6.	<u>Fault Detection and Isolation for Nonstationary Industrial Processes Using Sparse Stationary Subspace Analysis</u>	
	Dehao Wu (Tsinghua University), Donghua Zhou (Tsinghua University), Maoyin Chen (Tsinghua University), Hongquan Ji (Tsinghua University), Yanwen Wang (Tsinghua University), Xiaopeng Xi (Shandong University of Science and Technology)	

<i>T02: Data-driven diagnosis methods (16:50-18:20) (2C)</i>		
Candidate Chairs:	Maoyin Chen (Tsinghua University) Liping Yan (Beijing Institute of Technology)	Note
1.	<u>Anomaly Monitoring of Mixture Variables: When Continuous Variables are Mixed Gaussian</u>	
	Min Wang (Tsinghua University), Maoyin Chen (Tsinghua University), Donghua Zhou (Tsinghua University)	
2.	<u>Compound Fault Separation and Diagnosis Method based on FSA-CNN and DAN</u>	
	Jiechao Dong (Beijing Institute of Technology), Liping Yan (Beijing Institute of Technology), Yuanqing Xia (Beijing Institute of Technology)	
3.	<u>A Bearing Remaining Useful Life Prediction Method based on Inception-Resnet Module and Attention Mechanism</u>	
	Renpeng Mo (Rocket Force University of Engineering), Tianmei Li (Xi'an Institute Of High-tech.), Xu Zhu (Rocket Force University of Engineering), Xiaosheng Si (Xi'an Institute of Hi-Tech), Hanxiao Mu (Rocket Force University of Engineering), Baokui Yang (Rocket Force University of Engineering)	
4.	<u>A Novel Fault Diagnosis Method via Data Dynamic Property Inspired Density-based-Clustering</u>	
	Lu Wang (Chongqing University), Le Ma (Chongqing University), Ke Zhang (Chongqing University), Shenyang Cao (Chongqing University)	
5.	<u>Correntropy-based Aligned Predictor for Degradation Prognosis</u>	
	Wenjuan Mei (Department of Instrument Science and Technology, University of Electronic Science and Technology of China), Yuanzhang Su (Department of Instrument Science and Technology, University of Electronic Science and Technology of China), Zhen Liu (University of Electronic Science and Technology of China)	
6.	<u>A Novel Fault Diagnosis Method based on Topological Data Analysis</u>	
	Yuqing Wang (Shandong University), Yibin Li (Shandong University), Yan Song (Shandong University), Danya Xu (Shandong University), Weihong Zheng (Shandong University)	

—Room 3—

T02&T03: Data-driven diagnosis methods & Process supervision (13:30-15:00) (3A)

Candidate Chairs:	<i>Zehui Mao (Nanjing University of Aeronautics and Astronautics) Zhiqiang Ge (Zhejiang University)</i>	Note
1.	<u>On The Security of Data-Driven Industrial Fault Diagnosis Systems</u> Yue Zhuo (Zhejiang University), Zhiqiang Ge (Zhejiang University)	
2.	<u>Life Prediction of Rolling Bearing Using Temporal Convolution Network and Attention Mechanism</u> Gengwei Zhang (Nanjing University of Aeronautics and Astronautics), Yuxing Gu (Nanjing University of Aeronautics and Astronautics), Zehui Mao (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics), Chengrui Liu (Science and Technology on Space Intelligent Control Laboratory)	
3.	<u>A Remaining Life Prediction Method based on Semi-Random Filter Considering Model Uncertainty</u> Xu Zhu (Rocket Force University of Engineering), Xiaosheng Si (Xi'an Institute of Hi-Tech), Rempeng Mo (Rocket Force University of Engineering), Changhua Hu (The Second Artillery Engineering University), Tianmei Li (Xi'an Institute of High-Tech.)	
4.	<u>Novel SVM Based SMOTE Integrated LPP Dimensionality Reduction Method for Imbalanced Samples Fault Diagnosis</u> Yiguang Zhang (Qilu University of Technology (Shandong Academy of Sciences)), Zhongqing Jia (Qilu University of Technology (Shandong Academy of Sciences)), Hailong Ge (Qilu University of Technology (Shandong Academy of Sciences)), Jun Wang (Qilu University of Technology (Shandong Academy of Sciences))	
5.	<u>A Fault Diagnosis Method based on Multi-Feature Fusion and Broad Learning System</u> Yan Wang (China University of Geosciences), Wenkai Hu (China University of Geosciences), Weihua Cao (China University of Geosciences), Min Wu (China University of Geosciences)	
6.	<u>Quality Anomaly Monitoring and Comprehensive Diagnosis Framework for Plant-wide Process Industries with Spatio-Temporal Coordination</u> Hongjun Zhang (Ansteel Group Chaoyang Iron & Steel Company Limited), Chuanfang Zhang (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing), Jie Dong (University of Science and Technology Beijing, China), Liang Ma (University of Science and Technology Beijing), Xueyi Zhang (University of Science and Technology Beijing)	

T03&T04&T05: Process supervision & Active fault diagnosis methods & Condition monitoring and fault prediction (15:20-16:50) (3B)

Candidate Chairs:	<i>Kaixiang Peng (University of Science and Technology Beijing) Lei Xie (Zhejiang University)</i>	Note
1.	<u>Detecting Multiple Plant-wide Oscillations in Process Control Systems based on Multivariate Intrinsic Chirp Component Decomposition</u> Qiming Chen (Zhejiang University), Xun Lang (Yunnan University), Yi Pan (Zhejiang University), Yao Shi (Zhejiang University), Lei Xie (Zhejiang University), Hongye Su (Zhejiang University, China)	
2.	<u>A Novel Fault Assessment Method Integrating Global and Local Information for Industrial Processes</u> Yingxin Guo (University of Science and Technology Beijing), Xueyi Zhang (University of Science and Technology Beijing), Liang Ma (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing)	
3.	<u>Vibration Analysis for Marine Radar Frequency Synthesis Module</u> Tianhong Li (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Zhenyuan Zhang (Chongqing Jiaotong University)	
4.	<u>Auxiliary Input Design for Active Fault Detection via Deep Reinforcement Learning</u> Fanlin Jia (Tsinghua university), Xiao He (Tsinghua University)	
5.	<u>Multimode Processes Monitoring based on Slow Feature Analysis with Personalized Modeling</u> Xin Ma (Beijing University of Chemical Technology), Shao Xu Gao (Beijing University of Chemical Technology), Rongmin Chai (Beijing University of Chemical Technology), Qiankun Li (Beijing University of Chemical Technology), Haixin Ma (Beijing University of Chemical Technology), Youqing Wang (Beijing University of Chemical Technology)	
6.	<u>Fault Identification and Remaining Useful Life Prediction for Complex Equipments Under Multiple Fault Modes</u> Jiapeng Cui (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing), Pengxue Lang (University of Science and Technology Beijing), Shuai Lu (University of Science and Technology Beijing)	

T05: Condition monitoring and fault prediction (16:50-18:20) (3C)

Candidate Chairs:	<i>Xu Yang (University of Science & Technology Beijing) Zhenxing Liu (Wuhan University of Science and Technology)</i>	Note
1.	<u>Data Augmentation for Fault Prediction of Aircraft Engine With Generative Adversarial Networks</u> Pengxue Lang (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing), Jiapeng Cui (University of Science and Technology Beijing), Jie Yang (University of Science and Technology Beijing), Yingxin Guo (University of Science and Technology Beijing)	

2.	<u>Remaining Useful Life Prediction of Tool With Bigru-Attention and Improved Particle Filter</u>	
	Yi Li (Wuhan University of Science and Technology), Yong Zhang (Wuhan University of Science and Technology), Yang Chang (University of Electronic Science and Technology of China), Zhang Liu (High Speed Wire Rod Plant of Hunan Hualing Xiangtan Iron and Steel Group Co., Ltd), Zhenxing Liu (Wuhan University of Science and Technology)	
3.	<u>Multi-scale Robust Anomaly Detection of Rolling Bearings based on Data Enhancement</u>	
	Jiaxian Chen (Henan Normal University), Keying Liu (Henan Normal University), Wentao Mao (Henan Normal University), Zhang Di (Henan Normal University)	
4.	<u>Analysis on Fault Diagnosis of Gear Case based on Nonlinear Inertia Weight With Dynamical Adaption PSO</u>	
	Fengcai Cao (North University of China)	
5.	<u>Adaptive Weighting Strategy Based Multi-sensor Data Fusion Method for Condition Monitoring of Reciprocating Pump</u>	
	Yinghao Zhao (University of Science and Technology Beijing), Xu Yang (University of Science & Technology Beijing), Xia Wu (University of Science and Technology Beijing), Jian Huang (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing)	
6.	<u>Modified Integration Method of Empirical Mode Decomposition and Multifractal Detrended Fluctuation Analysis for Fault Diagnosis of Bearing</u>	
	Guangyi Chen (Lanzhou University of Technology), Changfeng Yan (Lanzhou University of Technology), Jiadong Meng (Lanzhou University of Technology), Huibin Wang (Lanzhou University of Technology)	

—Room 4—

<i>T05 & T06 & T16: Condition monitoring and fault prediction & Safety and security of cyber-physical systems & Risk estimation of control systems (13:30-15:00) (4A)</i>		
Candidate Chairs:	<i>Hao Luo (Harbin Institute of Technology) Shen Yin (Norwegian University of Science and Technology)</i>	Note
1.	<u>Joint Decision for Spare Part Ordering and Equipment Replacement based on Prognostic Information</u>	
	Hanxiao Mu (Rocket Force University of Engineering), Jian-Fei Zheng (High-Tech Institute of Xi'an), DangBo Du (Rocket Force University of Engineering), Hong Pei (Rocket Force University of Engineering), Qing Dong (Rocket Force University of Engineering), Bowei Zhang (Rocket Force University of Engineering)	
2.	<u>Privacy-preserving Machine Learning based on Homomorphic Conjugate Search Problem</u>	
	Jinfu Zhou (Chongqing Jiaotong University), Bo Mi (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Yang Liu (Institute of Information Science and Engineering), Li Yang (Chongqing Jiaotong University), Weng Yuan (Chongqing Jiaotong University)	
3.	<u>Privacy-Preserving Neural Network based on Multi-key</u>	

	<u>NTRU Cryptosystem</u>	
	Weng Yuan (Chongqing Jiaotong University), Bo Mi (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Yang Liu (Institute of Information Science and Engineering), Zhang Zhenyuan (Chongqing Jiaotong University), Jinfu Zhou (Chongqing Jiaotong University)	
4.	<u>Deep Learning-Based Defense and Detection Scheme Against Eavesdropping and Typical Cyber-Physical Attacks</u>	
	Shimeng Wu (Harbin Institute of Technology), Yuchen Jiang (Harbin Institute of Technology), Hao Luo (Harbin Institute of Technology), Xianling Li (Wuhan Second Ship Des. & Res. Ins.), Shen Yin (Norwegian University of Science and Technology, 7033 Trondheim, Norway)	
5.	<u>Sneak Circuit Analysis Considering Component Performance Degradation Under Digital Twin Model</u>	
	Yuzhe Ma (College of Missile Engineering), Tianmei Li (Xi'an Institute Of High-tech.), Xiaosheng Si (Xi'an Institute of Hi-Tech), Changhua Hu (The Second Artillery Engineering University), Shengfei Zhang (Rocket Force University of Engineering), Hao Zhang (Rocket Force University of Engineering)	
6.	<u>A Hazard Causation Analysis Method for Battery Electric Vehicles based on STPA and Complex Network</u>	
	Xiao Li (Research Institute of Highway Ministry of Transport), Jintao Liu (Beijing Jiaotong University), Jiahong Li (Beijing Jiaotong University)	

T07: Fault-tolerant control methods (15:20-16:50) (4B)

Candidate Chairs:	<i>Bin Jiang (Nanjing University of Aeronautics and Astronautics) Zhanshan Wang (Northeastern University)</i>	Note
1.	<u>Command-filter-based Adaptive Fault-Tolerant Tracking Control for Nonlinear Systems with Mismatched Disturbances</u>	
	Jiali Ma (Southeast University), Shumin Fei (Southeast University), Jiaqi Wang (Jinling Institute of Technology)	
2.	<u>Time-Varying Formation Control for Heterogeneous Multi-Agent Systems with Actuator Faults</u>	
	Juan Wang (Nanjing University of Aeronautics and Astronautics), Yajie Ma (Nanjing University of Aeronautics and Astronautics.), Bin Jiang (Nanjing University of Aeronautics and Astronautics.), Hao Ren (Nanjing University of Aeronautics and Astronautics)	
3.	<u>Adaptive Fault-Tolerant Control for Pure Feedback System with State Constraints</u>	
	Lei Ma (Northeastern University), Zhanshan Wang (Northeastern University), Dan Ye (Northeastern University), Yingying Liu (Northeastern University)	
4.	<u>Predictive Fault-tolerant Control for Trajectory Tracking of Unmanned Surface Vehicle</u>	
	Weilun Guo (Shandong University of Science and Technology), Xinshuang Lin (Shandong University of Science and Technology), Youqing Wang (Beijing University of Chemical Technology)	
5.	<u>Fixed-Time Convergence-based Fault-Tolerant Cooperative</u>	

	<u>Control of Fixed-Wing UAVs</u>	
	Honghui Liao (Nanjing University of Aeronautics and Astronautics), Ke Zhang (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.)	

T07: Fault-tolerant control methods (16:50-18:20) (4C)

Candidate Chairs:	<i>Lina Yao (Zhengzhou University) Hao Yang (Nanjing University of Aeronautics and Astronautics)</i>	Note
1.	<u>Cooperative Fault Tolerant Control of Security Games</u>	
	Shi Lu (Nanjing University of Aeronautics and Astronautics), Hao Yang (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.)	
2.	<u>Fault Diagnosis and Fault-Tolerant Control for Leader-Follower Multi-Agent Systems with Time-Delay</u>	
	Bo Cao (Zhengzhou University), Yawei Wu (Zhengzhou University), Lina Yao (Zhengzhou University)	
3.	<u>Novel Active Fault-tolerant Control for Discrete-time Linear Systems: A Switched Linear Parameter Varying Approach</u>	
	Junxing Che (Shandong University of Science & Technology), Yanzheng Zhu (Huaqiao University), Donghua Zhou (Tsinghua Univ.)	
4.	<u>Online Adaptive Fault Compensation Control for Underwater Vehicles with Parameter Perturbation and Intermittent Faults</u>	
	Miao Cai (Tsinghua University), Xiao He (Tsinghua University), Donghua Zhou (Tsinghua Univ.)	
5.	<u>Partial State Feedback Based Adaptive Control for Lateral Vehicle Motion with Sensor Failures</u>	
	Jianwen Liu (Nanjing University of Aeronautics and Astronautics), Liyan Wen (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.), Min Dong (Nanjing University of Aeronautics and Astronautics)	
6.	<u>Passive Fault-Tolerant Control for a Class Of Discrete-Time Switched Affine Systems</u>	
	Liao Fang (Shandong University of Science and Technology), Yanzheng Zhu (Huaqiao University), Rongni Yang (Shandong University)	

—Room 5—

T07&T10&T12: Fault-tolerant control methods & Statistical methods for fault diagnosis & Safety-critical systems (13:30-15:00) (5A)

Candidate Chairs:	<i>Jiandong Wang (Shandong University of Science and Technology) Limin Wang (Liaoning Shihua University)</i>	Note
1.	<u>Robust Fuzzy RBF Neural Network PID Controller for Quadrotor based on Extended State Observer Under External Perturbation</u> Xiaoyu Shi (University of Electronic Science and Technology of China), Rui li (Shanghai Space Propulsion Technology Research Institute Shanghai), Kai Chen (University of Electronic Science and Technology of China), Gen Qiu (University of Electronic Science and Technology of China), Libing Bai (University of Electronic Science and Technology of China), Yuhua Cheng (University of Electronic Science and Technology of China)	
2.	<u>Compound Output Feedback Fault Tolerant Control for Uncertain Systems with Sensor Faults</u> Xianghua Wang (Shandong University of Science and Technology), Jiandong Wang (Shandong University of Science and Technology)	
3.	<u>Fuzzy Iterative Learning Fault Tolerant Control for Batch Processes with Different Types of Actuator Faults</u> Limin Wang (Liaoning Shihua University), Wangxi Zhang (Hainan Normal University), Xueyu Li (Hainan Normal University)	
4.	<u>Weighted Wasserstein Distance-based Improved Serial Principal Component Analysis for Incipient Fault Detection of Complex Industrial Process</u> Jiabing Dai (China University of Petroleum), Xiaogang Deng (China University of Petroleum (East China))	
5.	<u>A Quality-related Fault Detection Method for Nonlinear Industrial Processes based on Mixed Kernel Partial Least Squares</u> Liang Ma (University of Science and Technology Beijing), Xueyi Zhang (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing), Jie Dong (University of Science and Technology Beijing, China)	
6.	<u>Decentralized Adaptive Tracking Control for Interconnected Nonlinear Time-Delay Systems with Input Saturation</u> Zhifeng Gao (Nanjing University of Posts and Telecommunications), Zhongyang Zhang (Nanjing University of Posts and Telecommunications), Shipeng Hu (Nanjing University of Posts and Telecommunications), Donghao Liu (Nanjing University of Posts and Telecommunications)	

<i>T12&T14&T15: Safety-critical systems & Systems identification and states estimation & Safety of instruments and control systems (15:20-16:50) (5B)</i>		
Candidate Chairs:	<i>Shaolin Hu (Xi'an University of Technology) Zetao Li (Guizhou University)</i>	Note
1.	<u>Anonymous Voting System Against Byzantine Attacks</u> Guomei Xiao (Chongqing Jiaotong University), Bo Mi (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Yang Liu (Institute of Information Science and Engineering), Li Yang (Chongqing Jiaotong University), Weng Yuan (Chongqing Jiaotong University)	
2.	<u>Dynamic and Efficient Access Control based on Function Encryption</u> Yongxing Zou (Chongqing Jiaotong University), Bo Mi (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Yang Liu (Institute of Information Science and Engineering), Li Yang (Chongqing Jiaotong University), Weng Yuan (Chongqing Jiaotong University)	
3.	<u>Adaptive Dynamic Surface Control for Interconnected Nonlinear Time Delay Systems with Unmodeled Dynamics and Full State Constraints</u> Zhifeng Gao (Nanjing University of Posts and Telecommunications), Yabin Liu (Nanjing University of Posts and Telecommunications), Donghao Liu (Nanjing University of Posts and Telecommunications), Shipeng Hu (Nanjing University of Posts and Telecommunications)	
4.	<u>Observer-based Local Unknown Input Reconstruction Using Global Information for Interconnected System</u> Mei Zhang (Guizhou University, China, University Paul Sbatier, France), Zetao Li (Guizhou University), Dahhou Boutaieb (CNRS)	
5.	<u>Multi-Object Recognition based on Improved YOLOv4</u> Xiaomin Huang (Xi'an University of Technology), Shaolin Hu (Xi'an University of Technology), Qiliang Guo (Xi'an University of Technology)	
6	<u>A Settlement Safety Assessment Method of Liquefied Natural Gas Tank based on Belief Rule Base</u> Yuan Chen (Rocket Force University of Engineering), Zhijie Zhou (Rocket Force University of Engineering), Guan-Yu Hu (Guilin University of Electronic Technology), You Cao (Rocket Force University of Engineering), Li Gailing (Army Military Transportation University), Zhichao Ming (Rocket Force University of Engineering)	

<i>A01 & A02 & A03: Aeronautics and aerospace systems & Automotive applications & Electrical, mechanical and mechatronic systems (16:50-18:20) (5C)</i>		
Candidate Chairs:	<i>Ningyun Lu (Nanjing Univ. of Aeronautics and Astronautics) Cong Chen (University of Electronic Science and Technology of China)</i>	Note
1.	<u>Multiphase Homing Track Planing for Parafoil-Booster Using Improved PSO Algorithm</u> Mengping Chen (Northwestern Polytechnical University), Xiaojun Xing (Northwestern Polytechnical University), Yichen Han (Northwestern Polytechnical University), Yiming Guo (Northwestern Polytechnical University), Fenghao Li (Northwestern Polytechnical University), Guozheng Fan (Northwestern Polytechnical University)	

2.	<u>Remaining Useful Life Prediction of Turbofan Engine based on Probabilistic Principal Components Analysis and Gated Recurrent Unit</u>	
	Hanghang Sun (Henan University), Ya Li (Henan University), Yan-dong Hou (Henan University)	
3.	<u>Life Prediction Model of Fiber Optic Gyroscopes Considering Competitive Failure</u>	
	Xiaoqian Zhang (Nanjing University of Aeronautics and Astronautics), Yuehua Cheng (Nanjing University of Aeronautics and Astronautics), Ningyun Lu (Nanjing Univ. of Aeronautics and Astronautics), Yanhui Pan (State Key Laboratory of Astronautic Dynamics), Qi Xue (Nanjing University of Aeronautics and Astronautics)	
4.	<u>Electrical Fault Analysis of Hydrogen Fuel Cell Engine</u>	
	Zhen Wang (712 Research Institute of China Shipbuilding Corporation), Mengyuan Zhang (712 Research Institute of China Shipbuilding Corporation), Jianxin Pan (WIMEP, CSSC)	
5.	<u>A Hybrid GNSS Fault Detection Method for Safe Train Positioning Using Inertial Sensors</u>	
	Jiang Liu (Beijing Jiaotong University), Bai-gen Cai (Beijing Jiaotong University), Jian Wang (Beijing Jiaotong University), Debiao Lu (Beijing Jiaotong University)	
6.	<u>A Diagnosis Method for Open-circuit Faults in NPC Three-Level Inverters based on Novel Sliding Mode Observer</u>	
	Wenzhan Huang (Hefei University of Technology), Shuiqing Xu (Chongqing University), Juxing Wang (Hefei University of Technology), Haosong Dai (Hefei University of Technology), Li Feng (Chongqing Jiaotong University), Yi Chai (Chongqing University)	

—Room 6—

<i>A03&A05&A06:Electrical, mechanical and mechatronic systems & Networked systems & Process engineering applications (13:30-15:00) (6A)</i>		
Candidate Chairs:	<i>Darong Huang (Chongqing Jiao-tong University)</i> <i>Lulu Tian (University of Electronic Science and Technology of China)</i>	Note
1.	<u>A fuzzy PID Method for Suppressing Drilling Stick-Slip Vibration by Introducing a Smith Predictor</u>	
	Guangwu Chen (Lanzhou Jiaotong University), Dejun Ba (Lanzhou Jiaotong University), Zhou Xin (Lanzhou Jiaotong University), Peng Li (Lanzhou Jiaotong University)	
2.	<u>Fault Diagnosis of Three-Level Active Power Filter based on Current Integration</u>	
	Ningfan Zhong (Shandong University of Science and Technology)	
3.	<u>Construction of Offline Predictive Controller for Wind Farm based on CNN-GRNN</u>	
	Yu Wang (Chongqing University), Shanbi Wei (Chongqing University), Wei Yang (CSIC Haizhuang Wind Power Co.,Ltd), Yi Chai (Chongqing University)	

4.	<u>Temperature Control-based FCS-MPC of Traction Converters</u>	
	Tao Peng (Central South University), Xiaolin Huang (Central South University), Chao Yang (Central South University), Zhiwen Chen (Central South University), Xinyu Fan (Central South University), Qiang Liu (Northeastern University)	
5.	<u>Reliability Distribution of Planetary Transmission Mechanism based on Interval Analysis Theory</u>	
	Chuanpu Zhang (Chongqing Jiaotong University), Darong Huang (Chongqing Jiaotong University), Haoyu Ma (Chongqing Jiaotong University)	
6.	<u>A Novel Image Classification Method based on Multi-layer Dictionary Learning</u>	
	Dandan Zhao (Chongqing University), Minhan Yi (Chongqing University), Jiaxin Guo (Chongqing University), Hongpeng Yin (Chongqing University)	

Special session: Fang Chongzhi Best Paper Award Session (15:20-17:05)

Candidate Chairs:	<i>To be determined</i>	Note
1.	<u>Expert-augmented Data-driven Safety Level Assessment Scheme with Incremental Learning</u>	
	Chang Liu (Tsinghua University), Yi Zhang (National Deep Sea Center), Xiao He (Tsinghua University)	
2.	<u>A New Safety Criterion for Dynamics Systems by Barrier Function based on Forward Invariant Set</u>	
	Zheren Zhu (Zhejiang university), Yi Chai (Chongqing University), Zhihuan Song (Zhejiang University), Huang Pengfei (Chongqing University)	
3.	<u>Lithium-ion Battery State-Of-Charge Estimation Using a Real-Time Moving Horizon Estimation Algorithm</u>	
	Jiayu Yan (Huazhong University of Science and Technology), Song Li (The 29th Research Institute of China Electronics Technology Group Corporation), Yiming Wan (Huazhong University of Science and Technology)	
4.	<u>Data-driven SOC Estimation with Moving Window Adaptive Residual Generator for Li-ion Battery</u>	
	Xiaoyi Xu (Harbin Institute of Technology), Hao Luo (Harbin Institute of Technology), Hao Wang (Zhengzhou University), Mo-Yuen Chow (North Carolina State University), Cong-Sheng Huang (North Carolina State University)	
5.	<u>Fault-Tolerant Control for Linear Parameter Varying Systems with Time-Delay and Integral Measurements</u>	
	Dong Qiao (Shandong University of Science and Technology), Youqing Wang (Beijing University of Chemical Technology)	

6.	<p><u>A New Missing Data Generation Method based on an Improved DCGAN with Application to RUL Prediction</u></p> <p>Shengfei Zhang (Rocket Force University of Engineering), Tianmei Li (Xi'an Institute of High-tech.), Xiaosheng Si (Xi'an Institute of Hi-Tech), Changhua Hu (The Second Artillery Engineering University), Hao Zhang (Rocket Force University of Engineering), Yuzhe Ma (College of Missile Engineering)</p>	
7	<p><u>GCN-CAM: A New Graph Convolutional Network-Based Fault Diagnosis Method with Its Interpretability Analysis</u></p> <p>Zhiwen Chen (Central South University), Jiamin Xu (Central South University), Tao Peng (Central South University), Xinyu Fan (Central South University), Chunhua Yang (Central South University), Weihua Gui (Central South University)</p>	

Post Presentations

Saturday, December 18, 2021

13:30~15:20 （三楼展厅）

展位 编号	TITLE	AUTHORS
1	Review on Fault Diagnosis Techniques for Distributed Parameter Systems	Qiang Wang (University of Science and Technology Beijing), Kaixiang Peng (University of Science and Technology Beijing), Xuerui Cao (University of Science and Technology Beijing)
2	Optimal Test Vector Generation Algorithm and Fault Diagnosis Scheme Design based on Dependency Model	Yue Sun (China North Vehicle Research Institute), Zhen Wang (China North Vehicle Research Institute), Yang Lei (China North Vehicle Research Institute), Na Zhang (China North Vehicle Research Institute), Shuai Ma (China North Vehicle Research Institute)
3	Cubature Kalman Filtering for Dynamic Pointing Rotary Steerable System based on Dynamic Event-Triggering Mechanism	Jinyi Tian (China University of Petroleum (East China)), Li Sheng (China University of Petroleum (East China))
4	Method of Turnout Fault Diagnosis based on DBN-BiLSTM Model	Guangwu Chen (Lanzhou Jiaotong University), Rong Lu (Lanzhou Jiaotong University)
5	Dynamic Event-Triggered Fault Detection for A Kind of Nonlinear Time-Varying Systems with Channel Fading	Xiaoqiang Zhu (Shandong University of Science and Technology), Ting Xue (Shandong University of Science and Technology), Lu Zhang (Shandong University of Science and Technology), Maiying Zhong (Shandong University of Science and Technology)
6	Rolling Bearing Fault Diagnosis Method based on Wavelet Packet Signal Reconstruction and Belief Rule Base	Bang-cheng Zhang (Changchun University of Technology), Zheng Zhong (Changchun University of Technology), Guan-Yu Hu (Guilin University of Electronic Technology), Shiyuan Lv (Changchun University of Technology)
7	Fault Diagnosis Method of the Power Amplifier based on the GMM-HMM	Leilei Fu (Xidian University), Han Du (Xidian University), Lu Sun (Xidian university)
8	Inverter Fault Detection Method based on Park Transformation and K-means Clustering Algorithm	Chaobo Chen (Xi'an Technological University), Yu Chen (Xi'an Technological University), Xueqin Yang (Xi'an University of Posts & Telecommunications), Song Gao (Xi'an Technology University), Binbin Zhang (Xi'an Technological University)
9	Innovation Neural Component Analysis for Monitoring Nonlinear and Dynamic Processes	Zeyi Yuan (Beijing University of Chemical Technology), Qing Chen (Beijing University of Chemical Technology), Yihao Qin (Beijing University of Chemical Technology), Youqing Wang (Beijing University of Chemical Technology)
10	An Online Detection Algorithm of Train Coupler Impact based on Stacked Auto-Encoders	Tao Wu (Tsinghua University), Shouchao Zhai (Tsinghua University), Wei Dong (Tsinghua University), Jing Liu (CRSC Research & Design Institute Group Co.,Ltd), Xinya Sun (TsingHua University)
11	Application of Sparse Representation in SCADA: Wind Turbine Fault Diagnosis based on K-SVD	Huanying Han (Northeastern University), Dongsheng Yang (Northeastern University), Xueqing Ni (Northeastern University)
12	Fault Diagnosis based on Multi-scale LSTM-FCNs for Industrial Process	Shaojie Yang (Chinese Academy of Sciences), Peng Li (Shenyang Institute of Automation (SIA)), Shuai Li (Shenyang Institute of Automation, Chinese Academy of Sciences), Xiaofeng Zhou (Shenyang Institute of Automation), Jiang ShanHong (Ansteel Mining Limited Company)

13	Comparison of Data-based Methods for Selecting Treatment Therapy in Hepatocellular Carcinoma	Yijie Zhao (Tsinghua University), Bin Zheng (University of Alberta), Hao Ye (Tsinghua univ.), Jing Zhong (Wise Healthcare Technology (Shanghai) Co. Ltd), Haiwei Wang (WiseHealthcare Technology (Shanghai) Co. Ltd,)
14	Structured Dictionary Learning for Fault Detection and Isolation	Liu Yi (Hangzhou Normal University), Jiusun Zeng (China Jiliang University), Jiang Bingbing (Hangzhou Normal University), Xun Lang (Yunnan University), Lei Xie (Zhejiang University)
15	Fault Diagnosis based on Domain Adaptive Multi-task Learning Convolutional Neural Network	Yihan Cao (Nanjing University of Aeronautics and Astronautics), Jianan Bian (Nanjing University of Aeronautics and Astronautics), Zehui Mao (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.), Wenjing Liu (Beijing Institute of Control Engineering)
16	Fault Diagnosis of Vibration Data Acquisition System	Yujie Wu (University of Electronic Science and Technology of China), Yuhua Yin (University of Electronic Science and Technology of China), Zetong Zhou (University of Electronic Science and Technology of China), Zhiliang Liu (University of Electronic Science and Technology of China)
17	Multi-scale Convolutional Neural Network for Fault-locating of High-speed Train Bogie	Bi Wu (Southwest Jiaotong University), Na Qin (Southwest Jiaotong University), Longguan Zhang (China Railway Engineering Services Co., Ltd), Kaifu Li (China Railway Engineering Services Co., Ltd), Suimei Liu (China Railway Engineering Services Co., Ltd), Deqing Huang (Southwest Jiaotong University)
18	Fault Feature Enhancement and Diagnosis of Rolling Bearing based on Complex Network	Nini Wang (Xinjiang University), Ping Ma (College of Electrical Engineering), Hongli Zhang (Xinjiang University), Cong Wang (Xinjiang University)
19	Deep Transfer Learning Network for Fault Diagnosis Under Variable Working Conditions	Yiyao An (Chongqing University), Ke Zhang (Chongqing University), Qie Liu (Chongqing University), Yi Chai (Chongqing University), Xinghua Huang (Chongqing University)
20	Problems and Countermeasures of Data Construction in Production Enterprises of Rail Transit	Longlong Song (CRRC Qingdao Sifang Co., Ltd), Wu Jili (CRRC Qingdao Sifang Co., Ltd), Jing Zhou (Beijing RelSPACE Sci-Tech Co.,Ltd)
21	Representation Learning for Fault Diagnosis with Contrastive Predictive Coding	Chuan Wan (Tsinghua University), Tongshuai Zhang (Tsinghua University), Zhihua Xiong (Tsinghua University), Hao Ye (Tsinghua univ.)
22	Bearings Fault Diagnosis based on Neural Network with a New Feature Sensitivity Threshold	Han Shi (University of Electronic Science and Technology of China), Kai Chen (University of Electronic Science and Technology of China), Libing Bai (University of Electronic Science and Technology of China), Renjun He (AVIC Chengdu Aircraft Design & Research Institute)
23	A Novel Adaptive Extreme Learning Machine-autoencoder Algorithm for Online Monitoring and Fault Detection	Ruining Tong (Yunnan University), Xiao Li (Yunnan University of Finance and Economics), Peng Li (Yunnan University), Lian Gao (School of information, Yunnan University)
24	An Adjustable Robust Optimization Approach for Multi-stage Unit Commitment Considering N-k Contingencies with Wind and Solar Uncertainty	Qiangyi Sha (Xinjiang University), Weiqing Wang (Xinjiang University), Haiyun Wang (Xinjiang University)
25	Variable Time Delay Estimation Between Time Series based on Significant Change Points	Guohao Li (Shandong University of Science and Technology), Jiandong Wang (Shandong University of Science and Technology), Yan Xiao (Shandong University of Science and Technology), Zhiyuan Zhang (Shandong University of Science and Technology)

26	Research on Transformer Fault Diagnosis Method based on Neighborhood Rough Set and Grey Wolf Algorithm Optimized Support Vector Machine	Shunjie Han (Changchun University of Technology), Zhen wu (Changchun University of Technology), Wenqing ding (Changchun University of Technology)
27	Exhaust Temperature Margin Prediction based on Time Series Reconstruction	Yufeng Long (Naval Aviation University), Xianjun Shi (Naval Aeronautical and Astronautical University), Yu Yang (Naval Aviation University), Yufeng Qin (Naval Aviation University), Jiapeng Lv (Naval Aviation University), Jie Zhang (Naval Aviation University)
28	Failure Prediction and Health Management of Critical Equipment in the CRF and CFI System of Nuclear Power Plant	Fan Gao (ChongQing ChuanYi Automation Co., Ltd)
29	Distributed Adaptive Fault-Tolerant Control for Autonomous Vehicle Platoon Against Fault	Chengwei Pan (University of Electronic Science and Technology of China), Yong Chen (University of Electronic Science and Technology of China), Ikram Ali (University of Electronic Science and Technology of China)
30	A Variable Detection Frequency Event-Triggering Mechanism for Multi-Agent Systems With Disturbances	Xu Kong (Shandong University of Science and Technology), Youqing Wang (Beijing University of Chemical Technology)
31	Predictive Control based on Bayesian Optimization for Station Parking of Trains with Discrete Gears	Hua Chen (Tsinghua University), Shouchao Zhai (Tsinghua University), Jing Liu (CRSC Research & Design Institute Group Co.,Ltd), Xinya Sun (TsingHua University), Yindong Ji (Tsinghua University)
32	Design of Fault Tolerant Algorithm for Hub Motors	Zhen Wang (China North Vehicle Research Institute), Huayuan Liu (NOVERI), Dewen Tian (China North Vehicle Research Institute), Yue Sun (China North Vehicle Research Institute)
33	Fault-Tolerant Control for Launch Vehicle based on Fuzzy Sliding Mode and Adaptive Dynamic Programming	Xue Li (Beihang University), Huahua Liu (Beihang University), Qing Wang (Beihang University), Yu'ang Liu (Beihang University)
34	Fault Isolation and Fault-Tolerant Control for Takagi-sugeno Fuzzy Time-Varying Delay Stochastic Distribution Systems	Yunfeng Kang (Zhengzhou University), Lina Yao (Zhengzhou University)
35	Equipment Condition Assessment Model based On Constructing Health Index	Guihua Zhang (Chongqing Chuanyi Automation Co., Ltd.), Gang Wang (Chongqing Chuanyi Automation Co., Ltd.), Haodong Zhang (Chongqing Chuanyi Automation Co., Ltd.)
36	A New Fault Detection Method for Multi-mode Dynamic Process	Yuan Li (Shen Yang University Of Chemical Technology), Haozhan Zhang (Shenyang Institute of Chemical Technology), Xiaochu Tang (Shenyang Aerospace University)
37	Supervised Dynamic Latent Variable Models for Fault Identification in Dynamic Processes	Qiqi Niu (School of Automation and Electrical Engineering), Chengkai Shen (Zhejiang University of Science and Technology), Yuting Lyu (Zhejiang University of Science and Technology), Yi Liu (Zhejiang University of Technology), Le Zhou (Zhejiang University of Science & Technology)
38	Formal Verification of Special Vehicle Priority Traffic Signal Light Control System based on TPN and Z	Liyuan Huang (Chongqing Jiaotong University), Yang Liu (Institute of Information Science and Engineering), Darong Huang (Chongqing Jiaotong University)

39	Railway Accident Analysis based on Colored Petri Nets	Xieting Li (Beijing Jiaotong University), Daohua Wu (Beijing Jiaotong University)
40	Health Assessment of the Wharf Considering Sensor Disturbance	Chaoli Zhang (High-Tech Institute of Xi'an), Zhijie Zhou (Rocket Force University of Engineeringomation), Shuaiwen Tang (Rocket Force University of Engineering), Lihao Yang (High-Tech Institue of Xi'an), Guan-Yu Hu (Guilin University of Electronic Technology)
41	Distributed Dynamic Event-based Triggering Protocols of Linear Multi-Agent Systems	Shuo Zhang (Northeastern University), Jinhai Liu (University of Northeastern), Zhigang Zhang (Northeastern University)
42	Nonlinearity Model Identification for Main Steam Valves based on Steady-state Data	Zhiyuan Zhang (Shandong University of Science and Technology), Jiandong Wang (Shandong University of Science and Technology), Guohao Li (Shandong University of Science and Technology), Xiaotong Jia (Shandong University of Science and Technology)
43	Multiphase Homing Track Planing for Parafoil-Booster Using Improved PSO Algorithm	Mengping Chen (Northwestern Polytechnical University), Xiaojun Xing (Northwestern Polytechnical University), Yichen Han (Northwestern Polytechnical University), Yiming Guo (Northwestern Polytechnical University), Fenghao Li (Northwestern Polytechnical University), Guozheng Fan (Northwestern Polytechnical University)
44	TDOA Positioning Method based on Mixed Strategy Sparrow Search Algorithm	Man Yang (Lanzhou Jiaotong University), Guangwu Chen (Lanzhou Jiaotong University), Wei Zongshou (Lanzhou Jiaotong University)
45	A Data Fusion Algorithm of the Improved BP Neural Network by Particle Swarm Optimization	Jidong Wang (Changchun University of Technology), Bangcheng Zhang (Changchun University of Technology), Siyang Gao (Changchun University of Technology), Aijun Yu (Beijing Shougang International Engineering Technology Co. Ltd.)
46	Semantical-Info based Virtual Try-on NetWork with Generative Adversarial Nets	Song Yang (Polytechnic Institute of Zhejiang University), Jianming Zhang (College of Control Science and Technology of Zhejiang University), Zhijian Wang (Zhejiang University Robotics Institute)
47	GAN-based Method with Small Training Samples for Defect Detection Using Magneto-optical Image	Yang Yang (University of Electronic Science and Technology of China), Jie Zhang (University of Electronic Science and Technology of China), Yuxiao Li (University of Electronic Science and Technology of China), Lulu Tian (University of Electronic Science and Technology of China), Libing Bai (University of Electronic Science and Technology of China)

15:20~16:50 （三楼展厅）

展位 编号	TITLE	AUTHORS
1	Model-based Analysis for Target Drug Delivery on Internet of Bio-Health Thing in Term of Cardiovascular Disease	AR Junejo (Harbin Institute of Technology), Xiang Li (Harbin Institute of Technology), Minglei Li (Harbin Institute of Technology), Nauman Ullah Gilal (Hamad Bin Khalifa University Doha, Qatar)
2	Modal Analysis of Quadrotor UAV based on Free Disturbed Motion	Limin Zhang (Zhongyuan University of Technology), Xi Li (Tiangong University), Weixun Li (Tianjin University of Technology and Education)
3	Demagnetization Fault Detection based on Position-Frequency Analysis for PMSMs in Nonstationary Conditions	Jinqiu Gao (Central South University), Weihua Gui (Central South University), Chao Yang (Central South University), Hongwei Tao (Central South University), Tao Peng (Central South University)
4	Fault Diagnosis Method of Analog Circuit based on CEEMD-ELM	Yufeng Qin (Naval Aviation University), Xianjun Shi (Naval Aeronautical and Astronautical University), Yufeng Long (Naval Aviation University), Jiapeng Lv (Naval Aviation University)
5	Nonlinear PLS with Neural Component Analysis Structure	Yonghui Wang (Shenzhen Technology University), Zhijiang Lou (Shenzhen Polytechnic)
6	Bearing Fault Diagnosis Using Modified Multi-scale Sample Entropy and One-against-rest Feature Selection	Aisong Qin (Guangdong University of Petrochemical Technology), Hanling Mao (Guangxi University), Mei Liu (Guangdong University of Petrochemical Technology)
7	Defect Detection Method of Railway Fastener based on SPP-improved ResNet	Dengfei Wang (Lanzhou Jiaotong University), Hongsheng Su (Lanzhou Jiaotong University), Guangwu Chen (Lanzhou Jiaotong University), Dejie Xu (Lanzhou Jiaotong University), Lifang Wang (Scientific Research Institute of China Railway Hohhot), Xiaojuan Zhao (Lanzhou Jiaotong University)
8	A Novel Fault Diagnosis Method based on Contrastive Learning with Multi-views of Data	Yu Yao (Northeastern University), Jian Feng (Northeastern University), Keqin Li (Northeastern University)
9	A Data-driven Fault Detection Method for Radar Cooling System	Chaofan Wang (Nanjing University of Aeronautics and Astronautics), Ningyun Lu (Nanjing University of Aeronautics and Astronautics), Yukun Chen (Nanjing University of Aeronautics and Astronautics), Hui Yu (The 38th Research Institute of China Electronics Technology Group Corporation)
10	On the Accuracy of Rotor Demagnetization Fault Detection in PMSM Using Vibration-Based Condition Indicators	Meili Xing (Beijing National Railway Research & Design Institute of Signal & Communication Group Co.,Ltd.)

11	Multi-attention Parallel CNN-GRU Fault Diagnosis Method For Rolling Bearing	Zhihao Huo (Huazhong University of Science and Technology), Xiaoyu Yang (Huazhong University of Science and Technology), Tao Zhang (Huazhong University of Science and Technology), Yanwei Wang (Wuhan Institute of Technology), Ying Zheng (Huazhong University of Science and Technology)
12	Remaining Useful Life Prediction of Lithium Battery with Enhanced Bi-LSTM Network	Hao Zhang (Rocket Force University of Engineering), DangBo Du (Rocket Force University of Engineering), Changhua Hu (The Second Artillery Engineering University), JianXun Zhang (Rocket Force University of Engineering), Shengfei Zhang (Rocket Force University of Engineering), Yuanxing Xing (Rocket Force University of Engineering)
13	Fault Prediction Using LSTM for Running Gears of High-speed Trains	Xiuyuan Sun (Changchun University of Technology), Chao Cheng (School of Computer Science and Engineering, Changchun University of Technology), Hongtian Hongtian (University of Alberta)
14	Adaptive State-feedback Stabilization for Nonlinear High-order System with Sector Nonlinear Input and Unknown Power	Nanzhu Lu (Yangzhou University), Qikun Shen (Yangzhou University)
15	Neuron Perceptron-driven Image Encryption Incorporating Hyper-Chaotic System	Yuanyuan Hui (Xi'an University of Technology), Han Liu (Xi'an University of Technology), Pengfei Fang (Xi'an University of Technology)
16	Research on Deep Filtering Board for Network Data of Ship Platform System	Chuping Yang (Systems Engineering Research Institute), Chen Long (Systems Engineering Research Institute), Yuan Qu (SERI), Chao Ma (SERI)
17	Fault-tolerant Formation for Multi-UAV via Improved Artificial Potential Field Method	Wenxuan Liu (Nanjing University of Aeronautics and Astronautics), Weixuan Liu (Nanjing University of Aeronautics and Astronautics), Xunhong Lv (Nanjing University of Aeronautics & Astronautics), Zehui Mao (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.)
18	Fault-Tolerant Control for Polynomial Fuzzy Systems based on Sum of Squares	Weixin Han (Northwestern Polytechnical University), Pan Long (Northwestern Polytechnical University)
19	A Composite Fault Diagnosis Method of Gearbox based on an Enhanced Deconvolution Algorithm	Shunyu Jia (Inner Mongolia University of Technology), Yongsheng Qi (Inner Mongolia University of Technology), Yongting Li (Inner Mongolia University of Technology)
20	Architecture Analysis for Avionics Prognostics and Health Management System	Runfeng Chen (China Academy of Space Technology)
21	Phase Unwrapping Method Using PSNR and SI	Qiyang Xiao (Henan University)

22	Suppressing High-Frequency External Disturbance in Active Disturbance Rejection Control	HuiYu Jin (Xiamen University), Weiyao Lan (Xiamen University)
23	Network Traffic Prediction based on Improved GA-Elman Neural Network	Zhilong Zhang (Naval Aviation University), Xianjun Shi (Naval Aeronautical and Astronautical University), Yufeng Long (Naval Aviation University), Yufeng Qin (Naval aviation university), Jiapeng Lv (Naval Aviation University), Zhao Li (Naval Aviation University)
24	The Reliability Assessment for Advanced Persistent Threat Defense based on Correlation Evidence Reasoning Rule	Guozhu Wang (Hainan Normal University), Guan-Yu Hu (Guilin University of Electronic Technology)
25	Health Analysis Method of Batch Smart Electricity Meter based on K-Nearest Neighbor Algorithm	Le Kang (State Grid Ningxia Electric Power Co.,Ltd), Bin Li (State Grid Ningxia Electric Power Co.,Ltd), Jianhua Liu (Nari (Beijing) Jiehong Technology Co.,Ltd), Erchao Wang (Nari (Beijing) Jiehong Technology Co.,Ltd), Xin Fang (Southwest Petroleum University), Darong Huang (Chongqing Jiaotong University)
26	Robust Modeling for Traction Power Supply Systems for Fault Diagnosis and Control	Shaokun Cheng (Southwest Jiaotong University), Lei Ma (Southwest Jiaotong University)
27	Fault Diagnosis with Spacecraft High-Dimensional Data based on Machine Learning	Hanyu Liang (Beijing Institute of Control Engineering), Yun Liu (Beijing Institute of Control Engineering), Chengrui Liu (Science and Technology on Space Intelligent Control Laboratory), Wenjing Liu (Beijing Institute of Control Engineering), Wenbo Li (Beijing Institute of Control Engineering)
28	Fault Detection of Complex Process based on Improved Kernel Entropy Component Analysis	Kailiang Hu (Huzhou University), Peiliang Wang (Huzhou University), Gang Shen (Huzhou University), Qiuyang Ye (Huzhou University)
29	State-of-Health Estimation of Satellite Lithium-Ion Batteries Using Improved Particle Filtering	Dengfeng Zhang (Nanjing University of Science and Technology), Weichen Li (Nanjing University of Science and Technology), Xiaodong Han (Nanjing University of Science and Technology), Cuimei Bo (Nanjing University of Technology), Quanling Zhang (Zhejiang University), Lei Qiao (China Academy of Space Technology)
30	Minimum-Eigenvalue-based Adaptive Fault-Tolerant Containment Control for Heterogeneous Multiagent Systems with Actuator Faults	Jianye Gong (Nanjing University of Aeronautics and Astronautics), Yajie Ma (Nanjing University of Aeronautics and Astronautics.), Bin Jiang (Nanjing University of Aeronautics and Astronautics.)
31	Intelligent Fault Diagnosis of Key Mechanical Components for Elevator	Bin Zheng (Shanghai Mitsubishi Elevator Co., Ltd.)

32	Multiphase Homing Track Planing for Parafoil-Booster Using Improved PSO Algorithm	Mengping Chen (Northwestern Polytechnical University), Xiaojun Xing (Northwestern Polytechnical University), Yichen Han (Northwestern Polytechnical University), Yiming Guo (Northwestern Polytechnical University), Fenghao LI (Northwestern Polytechnical University), Guozheng Fan (Northwestern Polytechnical University)
33	Incipient Sensor Fault Detection of Closed-loop Processes with Discriminant Analysis of Dynamic Latent Structures	Xu Chen (Tsinghua University), Xiao He (Tsinghua University)
34	Event-Triggered Fault Detection Filter Design for Autonomous Underwater Vehicles	Qingchen Zhao (Shandong University of Science and Technology), Ting Xue (Shandong University of Science and Technology), Maiying Zhong (Shandong University of Science and Technology)
35	Subspace-based Domain Adaptation for Few-shot Fault Diagnosis	Ge Yu (Peking University), Xi Zhang (Peking University)
36	A Condition Prediction Method of Blast Furnace based on Image Segmentation	Ting Cao (Peng Cheng Laboratory)
37	Degradation Prediction of EPLA Electro-Pneumatic Changeover Valve	Liuqing Xiong (Tongji University), Jinjun Lu (Tongji University), Mingchen Xue (CRRC), Gang Niu (Tongji University)
38	RUL Prediction based on Sparse Denoising LSTM	Funa Zhou (Shanghai Maritime University), Zhiqiang Zhang (Shanghai Maritime University), Po Hu (Henan University)
39	Fault-tolerant Control of Formation Flying Attitude based on F-16 Fixed-Wing Aircraft	Ying Xin (Nanjing University of Aeronautics and Astronautics), Wenxuan Liu (Nanjing University of Aeronautics and Astronautics), Bin Jiang (Nanjing University of Aeronautics and Astronautics.), Xunhong Lv (Nanjing University of Aeronautics & Astronautics), Hanyu Liang (Beijing Institute of Control Engineering)
40	Fault-Tolerant Control for Spacecraft via Zero-Sum Differential Game Theory	Qingyuan Meng (Nanjing University of Aeronautics and Astronautics), Yajie Ma (Nanjing University of Aeronautics and Astronautics.), Bin Jiang (Nanjing University of Aeronautics and Astronautics.), Zehui Mao (Nanjing University of Aeronautics and Astronautics), Hao Ren (Nanjing University of Aeronautics and Astronautics), Juan Wang (Nanjing University of Aeronautics and Astronautics)
41	Early Forest Fire Segmentation based on Deep Learningz	Mengna Li (Xi'an University of Technology), Youmin Zhang (Concordia University), Jing Xin (Xi'an University of Technology), Lingxia Mu (Xi'an University of Technology), Ziquan Yu (Nanjing University of Aeronautics and Astronautics), Han Liu (Xi'an University of Technology), Guo Xie (Xi'an University of Technology), Shangbin Jiao (Xi'an University of Technology), Yingmin Yi (Xi'an University of Technology)

42	Analytical Model for Single-hop Broadcast in FANET	Yang Zhao (System Engineering Research Institute of CSSC), Guobing Li (SERI), Yucheng Wei (Systems Engineering Research Institute), Yu Fu (System Engineering Research Institute), Junxiang Wang (Beijing Institute of Astronautical Systems Engineering)
43	A Mechanical Impact Fault Detection Method based on PCA for Marine Current Turbine	Milu Zhang (Shanghai Maritime University), Funa Zhou (Shanghai Maritime University), Tianhao Tang (Shanghai Maritime University)
44	Robust Adaptive Asymptotic Tracking Control of Voice Coil Motor Based Direct Drive Valve	Ning Zhou (Nan Jing University of Science and Technology), Wenxiang Deng (Nanjing University of Science and Technology), Xiaowei Yang (Nanjing University of Science and Technology), Jianyong Yao (Nanjing University of Science and Technology), Hao Li (Nanjing University of Science and Technology), Diao Fan (Nanjing University of Science and Technology)
45	A Current Sharing State Detection Method for Parallel Redundant Power System based on the Spectrum of Ripple	Peng He (School of Automation Engineering University of Electronic Science and Technology of China), Huijie Zhang (School of Automation Engineering University of Electronic Science and Technology of China), Quan Zhou (School of Automation Engineering University of Electronic Science and Technology of China), Libing Bai (School of Automation Engineering University of Electronic Science and Technology of China), Songlin Xie (School of Automation Engineering University of Electronic Science and Technology of China), Weijiang Zhang (School of Automation Engineering University of Electronic Science and Technology of China), Qi Li (School of Automation Engineering University of Electronic Science and Technology of China)
46	Temperature data prediction and anomaly detection of Ethylene Cracking Furnace based on SVR	Wenzhuo Chen (Xi'an University of Technology), Shaolin Hu (Xi'an University of Technology), Song He (Xi'an University of Technology)
47	A Thermal-Mechanical Deformation Based Fault Diagnosis Method Utilizing Support Vector Machine Algorithm for IGBT Bonding Wire Crack Detection	Jun Luo (University of Electronic Science and Technology of China), Jiahao Wang (University of Electronic Science and Technology of China), Libing Bai (University of Electronic Science and Technology of China), Cong Chen (University of Electronic Science and Technology of China), Lulu Tian (University of Electronic Science and Technology of China), Jie Zhang (University of Electronic Science and Technology of China), Quan Zhou (University of Electronic Science and Technology of China)



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