Henan Polytechnic University

In 1909, Jiaozuo Railway and Mining College was established, marking the inception of the first mining institute in China and the earliest higher institute in Henan Province. In 2004, it was officially renamed Henan Polytechnic University (HPU). Currently, HPU is a jointly-built university by the People's Government of Henan Province and the Ministry of Emergency Management. It has been selected for the national project of Basic Capacity Strengthening for Higher Education in Central and Western China, the Creation Project of Henan Province's Double First-Class University, and the Construction Project of Characteristic Backbone Universities in Henan Province. It serves as a key hub for talent cultivation, technological innovation and safety education, supporting both the national energy industry and the economic and social development of Henan Province.

HPU is authorized to award doctoral, master's, and bachelor's degrees across three academic levels and holds the privilege of nominating students for master's degree programs. It implements talent cultivation through integrated undergraduate and postgraduate studies, as well as postgraduate and doctoral programs. HPU comprises 24 teaching colleges, along with Chengzheng College, Limerick International College (International Education College), College of Continuing Education, and College of Innovation and Entrepreneurship. It offers 8 doctoral degree programs (7 in first-level disciplines and 1 in the professional category), 51 master's degree programs (29 in first-level disciplines and 22 in professional categories), and 75 undergraduate programs, covering ten major disciplines including engineering, science, management, economics, law, humanities, education, art, medicine, and interdisciplinary studies. Today, the campus hosts more than 42,000 full-time undergraduate students and approximately 7,000 graduate students.

HPU vigorously implements a talent-driven strategy, fostering a robust and capable team of professionals. The institution currently employs a total of 3,272 faculty and staff, including 1,291 individuals with senior professional titles and 1,584 faculty with doctoral degrees. There are 2 academicians of the Chinese Academy of Sciences and/or the Chinese Academy of Engineering (including jointly appointed), 6 international academicians, and 13

national-level distinguished experts. Among the faculty, 23 receive the State Council Special Government Allowance, and over 200 have been honored with titles such as National Teaching Masters, National Model Teachers, National Excellent Teachers, New Century Excellent Talents by the Ministry of Education, Zhongyuan Scholars, Provincial Distinguished Professors, Provincial Excellent Experts, and Provincial Teaching Masters. The institution has established 4 national-level teaching teams and 47 ministerial/provincial-level teaching and research innovation teams.

HPU is dedicated to advancing technological innovation and social services by deepening strategic collaborations with local governments and enterprises, providing both technological and intellectual support for national work safety initiatives, the revitalization of the energy industry, as well as regional economic and social development. It has established 74 national and provincial-level research platforms and humanities and social sciences bases, including the Ministry-Province Co-constructed Collaborative Innovation Center, National-Local Joint Engineering Laboratory, and Nurturing Base for National Key Laboratories.

In the coming years, following the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and his important discourse on education and the work of Henan, HPU strives to accelerate the creation of Double First-Class universities, comprehensively promote the construction of distinctive and high-level first-class universities, and make greater contributions to realizing the characteristics modernization in Henan.

School of Safety Science and Engineering

The School of Safety Science and Engineering (SSSE) was established in May 2005. In the 1960s, SSSE pioneered the research on gas geology nationwide, establishing the discipline of gas geology for the first time. It has developed distinctive features and advantages in theories and applications of gas geology, coal mine gas extraction and hazard prevention, ventilation and fire prevention, chemical and new energy safety, safety system decision-making, and emergency rescue operations. It has been honored with national and ministerial/ provincial-level awards, including the National Advanced Collective in the Education System, the National Exemplary Party Branch in Party Construction, the Advanced Primary-Level Party Organization of Henan Province, and the Advanced Collective in the Education System of Henan Province, among other honors.

SSSE has established over 50 quality engineering projects, including the National First-Class Undergraduate Program in Safety Engineering, the Provincial First-Class Undergraduate Program in Fire Engineering (Henan Province), National Distinctive Program in Safety Engineering, National Comprehensive Reform Pilot Program in Safety Engineering, National Outstanding Engineer Education Training Program in Safety Engineering, National-Level Teaching Team for Safety Engineering, National Experimental Teaching Demonstration Center for Safety Engineering. It has established 12 provincial/ministerial -level research platforms, including the Henan Province-State Ministry Jointly Constructed National Key Laboratory Cultivation Base for Gas Geology and Gas Control, the Coal Safety Production and Clean Efficient Utilization Provincial-Ministerial Collaborative Innovation Center.

The discipline of Safety Science and Engineering is a traditional, distinctive and advanced field of HPU. It was recognized as a Provincial Key Discipline in 1996; granted the first batch of second-level discipline doctoral program authorizations of the School of Safety Technology and Engineering in 2003; approved as one of the nation's first first-level doctoral programs in Safety Science and Engineering in 2011; selected for the A-class construction project of Distinctive and Advanced Discipline Development Initiative in Henan Province in 2015; rated as A- in the 2017 National Disciplinary Assessment; included in Henan's Category

A Distinctive Backbone Discipline Cluster in 2020; designated as a Henan “Double First-Class” Initiative Discipline in 2021; listed as a Priority Development Discipline by the Ministry of Education in 2022; and finally included in Henan's Frontier Discipline Development Plan in 2023.

The Safety Science discipline has gathered a large number of outstanding experts and scholars, boasting a strong faculty. Currently, it includes 14 national and industry-leading talents, and 28 provincial-level talents. Specifically, 1 academician of the Chinese Academy of Engineering, 1 academician of the Canadian Academy of Engineering, 2 recipients of the National Hundred, Thousand, and Ten Thousand Talent Project, 1 recipient of the National Science Fund for Excellent Young Scientists, 2 young talents supported by the National High-Level Talent Special Support Plan, 1 recipient of the China Postdoctoral Innovative Talent Support Program, 36 doctoral supervisors, and 106 master's supervisors. It has 1 National Outstanding Engineer Team; 1 National Teaching Team; 3 Ministry of Education Innovation Teams; 1 National Huang Danian-Style Teacher Team (model faculty team); 2 Provincial Huang Danian-Style Teacher Teams (Henan); and 8 provincial/ministerial-level technological innovation teams. In recent years, SSSE has undertaken over 200 national-level research projects, published more than 2,000 high-level journal papers, and obtained over 300 national invention patents. It has received 4 Second Prizes of the National Scientific and Technological Progress Award, 2 Second Prizes of the National Teaching Achievement Award, and over 120 provincial/ministerial-level awards (Second Prize or higher).

Today, SSSE will uphold its fine educational traditions and profound cultural heritage, deepen the integration of "Party building with career development and high-quality growth", carry out reform, innovation, and vigorous advancement. It will vigorously promote the "Double First-Class" initiative, striving to become a high-level college with significant influence, distinct characteristics, and prominent disciplinary advantages.

协办单位

University of Science and Technology Beijing
McGill University (Canada)
Shandong University of Science and Technology
Hunan University of Science and Technology
Zhong'an Academy of Safety Engineering
State Key Laboratory of Coking Coal Resources Green Exploitation
Key Laboratory of Coal Mine Disaster Prevention
Key Laboratory of Coal Mine Gas Disaster Prevention and Control of the Ministry of Emergency Management
International Joint Laboratory of Coal Mine Safety and Occupational Hazard Prevention of Henan Province
Key Laboratory of Unconventional Coal Resources Accumulation and Development of Henan Province
University of Wollongong (Australia)
The Pennsylvania State University (United States)
Central Mining Institute (Poland)
China University of Mining and Technology
China University of Mining and Technology (Beijing)
Xi'an University of Science and Technology
Anhui University of Science and Technology
Chongqing University
Central South University
Northeastern University
Heilongjiang University of Science and Technology
Xinjiang Institute of Technology
North China University of Science and Technology
University of Science and Technology Liaoning
Taiyuan University of Technology
Liaoning Technical University
Guizhou University
North China Institute of Science and Technology
Qingdao University of Technology
Henan University of Engineering
Taiyuan University of Science and Technology
Shanxi Institute of Energy
University of New South Wales (Australia)
Monash University (Australia)
National University of Laos (Laos)
Henan Province Coal Society
Henan Province Association of Work Safety and Occupational Health

赞助单位

Mine Safety Monitoring Technology and Equipment Professional Committee of China Mine Safety Society
Grupa Kapitałowa FASING S.A.
Wuhan Tianchen Weiye Geophysical Exploration Technology Co., LTD
Nantong Renlong Scientific Research Instrument Co., LTD
Shanxi Zhongke Hong'an Testing Technology Co., LTD
Henan Guanrui Industrial Co., LTD
Zhejiang Zhoushan Xiyun Jingye Emergency Industry Co., LTD
Jiangsu Tuochuang Scientific Research Instrument Co., LTD
Beijing Xinyuan Jiuding Technology Co., LTD
Netzsch Scientific Instrument Trading (Shanghai) Co., LTD
Tiefulai Equipment Manufacturing Group Co., LTD
Shandong Micro-sensors Photonics Co. Ltd
Henan Shengwo Boxin Industrial and Mining Technology Development Co., Ltd
Shanghai Tieren Fire Protection Complete Equipment Co., LTD
Shaanxi Kailai Electromechanical Equipment Manufacturing Co., LTD

Contents

I. Conference Introduction

Mineral resources, as an important support for global energy and raw material supply, are the cornerstone for promoting social and economic development. However, the safety concerns related to the development and utilization of mineral resources have consistently represented a major challenge hindering the industry's sustainable growth. Since the beginning of the 21st century, the global mining industry has been continuously expanding into deep, complex and extreme geological environments. The frequency and intensity of coal and rock dynamic disasters and their compound disasters have significantly increased, especially for disasters such as rock burst and coal-gas outbursts, posing greater challenges for effective disaster prevention and mitigation. Meanwhile, occupational health concerns remain severe. Deaths caused by pneumoconiosis significantly surpass those resulting from workplace safety incidents, posing unprecedented threats to the life safety and health protection of miners. These factors not only affect the safety and efficiency of mining production, but also pose a serious threat to the green and low-carbon transformation of mines and sustainable social development.

Since 2011, the International Symposium on Mine Safety Science and Engineering (ISMSSE) has been successfully held for seven sessions, evolving into a prestigious academic conference with significant international impact in the area of mine safety. The conference addressed multiple aspects, including safety science theory, disaster mechanism research, intelligent prevention and control technology, and engineering practice. It promoted academic exchanges, technological innovation and transformation of achievements in the field of mine safety, and played a significant role in promoting international cooperation and enhancing the overall safety level of the industry.

The 8th International Conference on Mine Safety Science and Engineering (ISMSSE 2025) is set to take place in Jiaozuo, China, from October 10 to 12, 2025. The conference, with the core objective of "Building a safe, sustainable and efficient mine system", is dedicated to gathering the latest global expertise in mine safety, focusing on the major challenges and breakthroughs faced by the industry, and exchanging the latest research results and advanced engineering practices. The conference aims to establish a premier platform for academic exchange and cooperation among global experts, researchers, engineers and technical professionals, and industry leaders. It seeks to advance technological innovation in mine safety, foster international cooperation, and support the establishment of a new paradigm for high-quality development within the global mining sector. Furthermore, the ICMSSE organizing committee will choose recipients for the International Outstanding Young Scholars in Mine Safety award, as well as recognize exceptional papers presented at the conference.

II. Conference committee

Honorary President

Zhang Tiegang
Academician of the Chinese Academy of Engineering

Yuan Liang
Academician of the Chinese Academy of Engineering

Zhang Laibin
Academician of the Chinese Academy of Engineering

Pan Yishan
Academician of the Chinese Academy of Engineering

Wu Aixiang
Academician of the Chinese Academy of Engineering

He Xueqiu
Chairperson of ICMSSE

Cao Yunxing
Fellow of the Canadian Academy of Engineering

Conference Chairperson

Zhao Tongqian

International Chairperson

Hani Mitri

Executive Chairperson

Wei Jianping

Co-chairperson

(In alphabetical order by name)

Cheng Weimin	Shandong University of Science and Technology
Deng Jun	Xi'an University of Science and Technology
Feng Guorui	Shanxi Energy University
Han Jun	Liaoning Technical University
Hu Jun	University of Science and Technology Liaoning
Ismet Canbulat	University of New South Wales (Australia)
Li Shuqing	Hunan University of Science and Technology
Liang Weiguo	Taiyuan University of Science and Technology
Lu Yiyu	Chongqing University
Lu Weidong	Xinjiang Institute of Engineering
Meng Shangjiu	Heilongjiang University of Science and Technology
Shimin Liu	The Pennsylvania State University (United States)
Stanislaw Prusek	Fasing/Central Mining Institute (Poland)
Tingxiang Ren	University of Wollongong (Australia)
Wang Kai	China University of Mining and Technology (Beijing)
Zhai Cheng	China University of Mining and Technology
Zhang Jianguo	Henan Polytechnic University
Zhang Ruilin	Henan Institute of Engineering
Zhou Fubao	China Academy of Safety Science and Technology

Organizational Committee

Chairperson： Li Zhenhua

Executive Chairperson：

Wei Jianping, Chen Xiangjun, He Shengquan, Kumral Mustafa

Member：

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Fan Chengkai	Yunxing Cao	Yang Tao	Wang Yungang	Wang Jian
Yan Jiangwei	Liu Yanwei	Liu Jun	Hao Tianxuan	Ji Wentao

Academic Committee

Chairperson： Zhang Tiegang

Executive Chairperson：

Wei Jianping	Hani Mitri	Shimin Liu	Tingxiang Ren	Chen Xiangjun
Wang Yan	Liu Yong	Li Zhenlei		

Committee members： (In alphabetical order by name)

An Weiguang	Tang Baoyao	Chen Dangyi	Chen Jie	Chen Lianjun
Chen Shaojie	Chen Xuexi	Cheng Yuanping	Deng Cunbao	Dong Longjun
Duan Hongfei	Fan Jingdao	Feng Zijun	Gao Jianliang	Gaoke
Ge Zhaolong	Guo Liwen	He Xinjian	Hu Xiangming	Jiang Bingyou
Jin Longzhe	Jing Guoxun	Li Bo	Li Diyuan	Li He
Li Qingsong	Li Shugang	Lin Baiquan	Lin Haifei	Liu Quansheng
Liu Yanwei	Liu Yingke	Liu Zegong	Liu Zhen	Lu Yi
Lu Wei	Luo Zhenmin	Ma Li	Nie Baisheng	Nie Wen
Pan Rongkun	Peng Shoujian	Qi Xuyao	Qin Botao	Song Dazhao
Sa Zhanyou	Shi Biming	Tao Ming	Wang Caiping	Wang Enyuan
Wang Fusheng	Wang Gang	Wang Guangjin	Wang Hetang	Wang Liang
Wang Pengfei	Wang Zhaofeng	Wen Hu	Wen Zhijie	Wu Jiansong
Wu Qiang	Xu Feng	Xue Sheng	Xie Jianlin	Yang Jianzeng
Yang Wei	Yin Tubing	Zhang Baoyong	Zhang Lei	Zhang Xinghua
Zhang Zhenyu	Zhao Guangming	Zhao Xingdong	Zhong Xiaoxing	Zhai Cheng
Zhai Xiaowei	Zhou Gang	Zhou Xihua	Zhou Zilong	Zhu Hongqing
Zhu Wancheng	Zuo Yujun			

ICMSSE/ Advisory Committee

Chairperson：	Xueqiu He,	China
International Chairperson：	Hani Mitri,	Canada
Secretariat：	He Shengquan,	China
	Kumral Mustafa,	Canada
	Majid Khan,	Islamic Republic of Pakistan
International Secretariat：	Bella Starnino,	Canada

Members：

Abbas Taheri,	Canada	Longzhe Jin,	China
Adam Smolinski,	Poland	Majid Khan,	China
Agus P. Sasmito,	Canada	Mehmet Kizil,	Australia
Aleksandra Koteras,	Poland	Mian Sohail Akram,	Pakistan
Ali Mortazavi,	Kazakhstan	Miguel Tato Diogo,	Portugal
Apel Derek,	Canada	Ming Cai,	Canada
Atsushi Sainoki,	Japan	Mitra Rudrajit,	United States
Baisheng Nie,	China	Murat Karakus,	Australia
Baoyong Zhang,	China	Gao Na,	China
Fan Chengkai,	Canada	Petr Konicek,	Czech Republic
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Dazhao Song,	China	Richard Campbell,	Australian
Deniz Tuncay,	United States	Rickard Hansen,	Sweden
Enyuan Wang,	China	Shimin Liu,	United States

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Fidelis T Suorineni,	Kazakhstan	Ren Tingxiang,	Australia
Ge Gao,	China	Tshibangu J.P. K.,	Belgium
Guangyao Si,	Australia	Vladimir Frid,	Israel
H. Sabnem Duzgun,	United States	Wei Victor Liu,	Canada
Heinz Konietzky,	Germany	Cheng Weimin,	China
Igor Yurievich Rasskazov,	Russia	Chen Wenxue,	Canada
Ismet Canbulat,	Australia	Yun Xiaoyou,	Canada
Jianping Wei,	China	Lu Yiyu,	China
Han Jun,	China	Yuksel Asli Sari,	Canada
Kumral Mustafa,	Canada	Wang Yunhai,	China
Dou Linming,	China	Zach Agioutantis,	United States
Jiang Lishuai,	China	Li Zhenlei,	China
Long Fan,	United States		

III. Conference Guide

1. Venue and accommodation

(1) Both the conference registration and venue are located at Jiaozuo Yingbin Hotel.

(2) Participants are recommended to stay at the contracted hotels offering preferential rates for the conference, including Jiaozuo Yingbin Hotel and Tai Ji Health and Wellness Hotel.

Hotel Name: Jiaozuo Yingbin Hotel

Hotel Address: No. 1899, Minzhu South Road, Shanyang District, Jiaozuo City, Henan Province.

Contracted Hotel Rates: Deluxe single room (480 yuan/night), Business single room/standard room (330 yuan/night).

Hotel Name: Tai Ji Health and Wellness Hotel

Hotel Address: No. 59, Shiji Road, Shanyang District, Jiaozuo City, Henan Province.

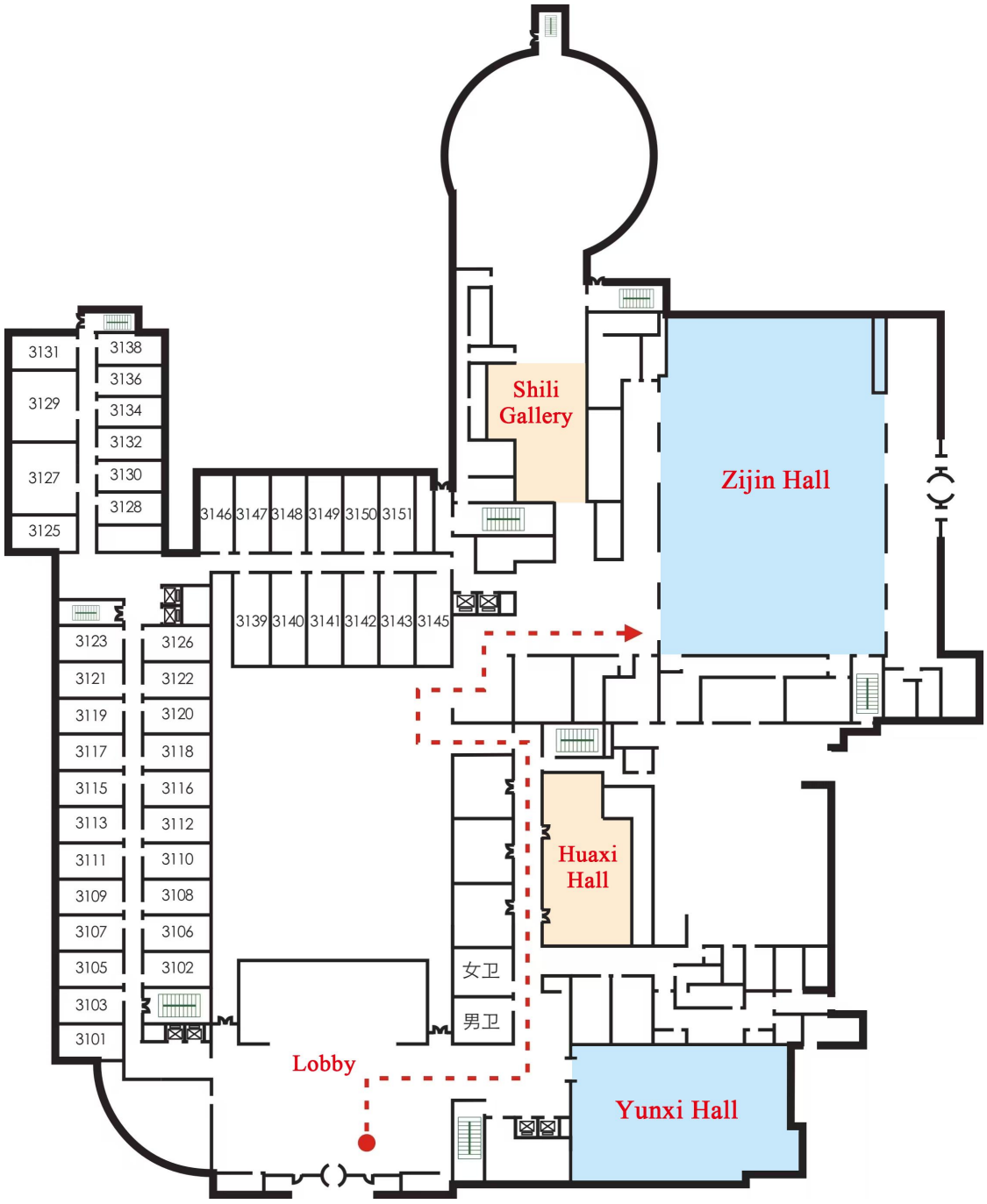
Contracted Hotel Rates: Deluxe single room/standard room (258 yuan/night), Business single room/standard room (218 yuan/night).

2. Conference meals

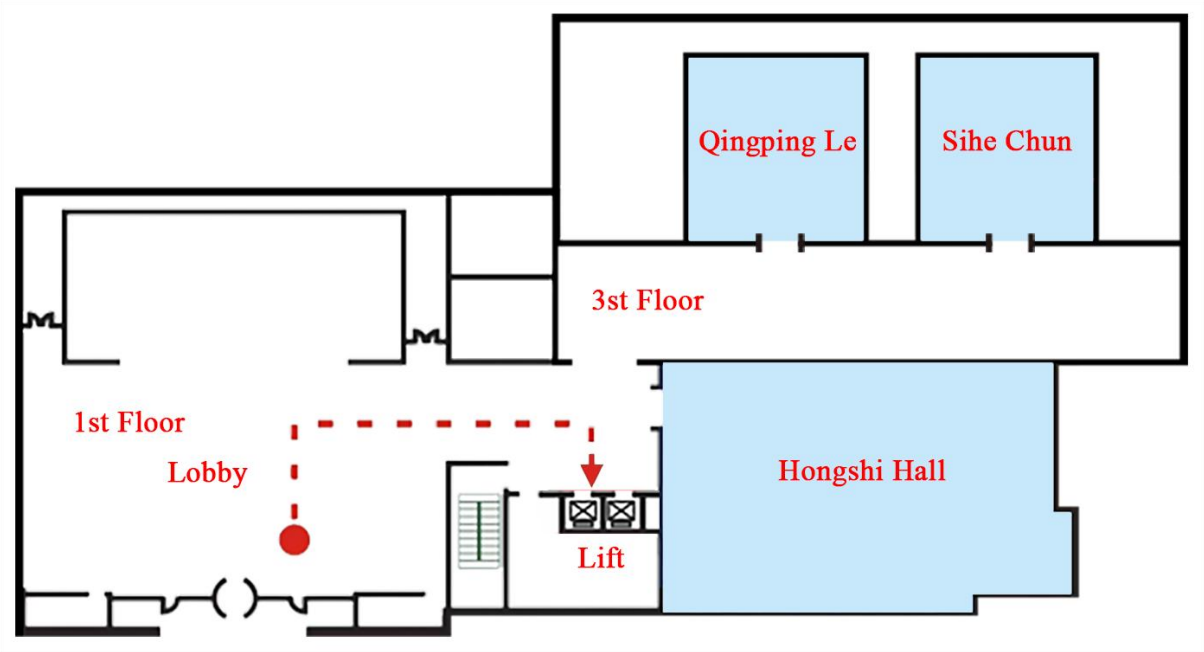
Date	Meal type	Time	Venue
October 10	Buffet	18:30-19:30	Jiaozuo Yingbin Hotel Shili Gallery (1st Floor, Building 3)
October 11	Buffet	6:30-8:30	Jiaozuo Yingbin Hotel Shili Gallery (1st Floor, Building 3)
	Buffet	12:00-13:00	Jiaozuo Yingbin Hotel Shili Gallery + Huaxi Hall (1st Floor, Building 3)
	Banquet	18:30-19:30	Jiaozuo Yingbin Hotel Zijin Hall (1st Floor, Building 3)
October 12	Buffet	06:30-8:30	Jiaozuo Yingbin Hotel Shili Gallery (1st Floor, Building 3)
	Buffet	12:00-13:00	Jiaozuo Yingbin Hotel Shili Gallery (1st Floor, Building 3)

3. Venue map

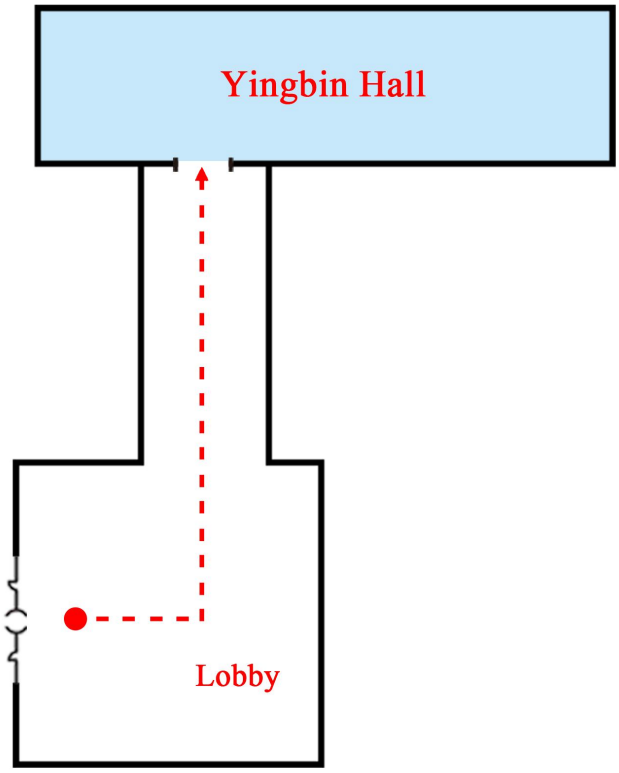
Jiaozuo Yingbin Hotel, Address: No. 1899, Minzhu South Road, Shanyang District, Jiaozuo City, Henan Province, Tel: 0391-8861999



Schematic diagram of the venue on the first floor of Building 3



Schematic diagram of the venue on the second floor of Building 3



Schematic diagram of the venue on the first floor of Building 2

4. Registration Instructions

(1) Registered and paid delegates: Sign in at the registration desk → Collect your conference badge and materials → Proceed to the hotel front desk for check-in.

(2) Unregistered/unpaid representatives: Sign in at the registration desk → Complete on-site registration payment / Verify invoice details → Collect your conference badge and materials → Proceed to the hotel front desk for check-in.

5. Guidelines for Participants

Please carefully review this conference handbook and punctually attend all conference sessions and related events. You may seek assistance from volunteers or contact the organizing committee staff for any needs.

All participants must wear their conference badges during sessions and events. Meal vouchers are required for access to designated dining areas.

Sessions include plenary invited reports, parallel session invited reports, and parallel session thematic reports. Presentation slides (PPT) are recommended to be in English or bilingual (Chinese-English) format. The time for the plenary invited reports is 20 minutes/presenter, for parallel session invited reports is 15 minutes/presenter, and for parallel session thematic reports is 10 minutes/presenter.

All PPT files must be copied to the conference computer at least 30 minutes before the session begins.

6. Contact information of the organizing committee

Overall Coordination: Wang Yan (+86 15139167982), Liu Yong (+86 18839179880)

Presentation Inquiries: Pan Rongkun (+86 18903890660), Liu Sun (+86 18236756085)

Paper Submission: Liu Yong (+86 18839179880), Wang Lijuan (+86 18813128153)

Venue Arrangements: Li Bo (+86 13839117169), Cui Junqi (+86 18339796517)

Accommodation: Zhu Yunhua (+86 13939130758)

Transportation: Zhu Shiqiang (+86 18003710299)

Email: ismsse2025@163.com

IV. Conference Schedule

Date	Time	Event content	Venue
October 10 (Friday)	All day	Check-in and registration	Building 3 of the Jiaozuo Yingbin Hotel Hall
October 11 (Saturday)	08:30-9:00	Opening ceremony and the awarding ceremony for outstanding young researchers	Zijin Hall (1st Floor, Building 3)
	09:00-12:00	Plenary invited reports	
	12:00-13:00	Lunch	Shili Gallery + Huaxi Hall (1st Floor, Building 3)
	14:00-18:30	Parallel session I: Prevention and Utilization of Gas Disasters	Yunxi Hall (1st Floor, Building 3)
		Parallel session II: Prevention and Control of Thermal and Dynamic Disasters in Mines	Hongshi Hall (3rd Floor, Building 3)
		Parallel session III: Intelligent, Safe and Green Mining in Mines	Yingbin Hall (1st Floor, Building 2)
		Parallel session Four: Young Scholars Forum I	Qingpingyue (3rd Floor, Building 3)
		Parallel session Five: Young Scholars Forum II	Sihechun (3rd Floor, Building 3)
	18:30-19:30	Banquet	Zijin Hall (1st Floor, Building 3)
October 12 (Sunday)	08:30-11:00	Parallel session I: Prevention and Utilization of Gas Disasters	Yunxi Hall (1st Floor, Building 3)
		Parallel session II: Prevention and Control of Thermal and Dynamic Disasters in Mines	Hongshi Hall (3rd Floor, Building 3)
		Parallel session III: Intelligent, Safe and Green Mining in Mines	Yingbin Hall (1st Floor, Building 2)
		Parallel session Four: Young Scholars Forum I	Qingpingyue (3rd Floor, Building 3)
	11:30-12:00	Closing ceremony and awarding of outstanding papers	Yunxi Hall (1st Floor, Building 3)
	12:00-13:00	Lunch	Shili Gallery (1st Floor, Building 3)

V. Detailed Conference Agenda

October 11 | 8:30-12:00 | Venue: Zijin Hall (1st Floor, Building 3)

Opening Ceremony			
Presider: WEI Jianping, Vice President of HPU			
08:30-9:00	**Welcoming Address: ZHAO Tongqian, President of HPU**		
	International Chair Address: Prof. Hani Mitri (Canada)		
	ICMSSE Chair Address: Prof. HE Xueqiu		
	Announcement of Outstanding Young Scholar Awards: Prof. HE Xueqiu		
	Award Presentation for Outstanding Young Scholars		
Invited Report	**Presiders: GUO Liwen & LIANG Weiguo**		
09:00-09:20	Yunxing Cao	Henan Polytechnic University	Effectively enhancing methane extraction by CO_2 gas fracturing
09:20-09:40	Fan Jingdao	Henan Polytechnic University	Innovation in intelligent mining technology for coal mine safety
09:40:10:00	Stanisleaw Prusek	Fasing/Central Mining Institute (Poland)	Transforming abandoned coal mines into clean energy hubs: from GreenJOBS and Mine-to-H_2
10:00-10:20	Tingxiang Ren	University of Wollongong (Australia)	Advancing mine health and safety: the role of safety science and engineering
10:20-10:30	**Tea break**		
Invited Reports	**Presiders: CHENG Yuanping & LI Shugang**		
10:30-10:50	Hu Jun	University of Science and Technology Liaoning	AI-Integrated decision support platform for tailings pond risk classification and dynamic monitoring
10:50-11:10	Baoyao Tang	Orla Mining Ltd. (Canada)	Effective ground control practices-bridging the gap between geotechnical engineering principles and applications
11:10-11:30	Liu Quansheng	Wuhan University	Control of large-displacement in deep coalmine tunnels and efficient TBM tunnelling in large-displacement conditions
11:30-11:50	Qin Botao	China University of Mining and Technology	Research on efficient and stable gas production of deep coal underground gasification and safe and long-term CO_2 storage in gasification chambers

Parallel session I: Prevention and Utilization of Gas Disasters

October 11 | 14:00-18:30 | Venue: Yunxi Hall (1st Floor, Building 3)

Stage 1:	**Presiders: SHI Biming & XIAO Peng**	
14:00-14:15 (Invited Lecture)	Stanisleaw Prusek Fasing/Central Mining Institute (Poland)	Analysis of a rockburst event during longwall coal mining under adverse geomechanical conditions
14:15-14:30 (Invited Lecture)	Zhang Lei China University of Mining and Technology	Experimental study on gas adsorption and seepage law of coal displaced by gas injection
14:30-14:45 (Invited Lecture)	Michał Granieczny Zakład Odmetanowania Kopalń„ZOK II” Sp. z o.o .(Poland)	Efficient methane drainage systems in deep coal mines through the use of horizontal directional drilling - from design to implementation
14:45-15:00 (Invited Lecture)	Li He Hunan University of Science and Technology	Theory of microwave plasma-enhanced permeability for low-permeability coalbed methane reservoirs
15:00-15:15 (Invited Lecture)	Akihiro Hamanaka Kyushu University (Japan)	Evaluation of fracturing activities and synthesis gas production in underground coal gasification using different coal rank
15:15-15:30 (Invited Lecture)	Chen Peng North China Institute of Science and Technology	Research on the influence of drilling parameters on in-hole negative pressure based on WOA-BP and optimization of coal seam gas drainage effect
15:30-15:40	Zhang Huidong Henan Polytechnic University	Investigation on the influence of Mach disk on the impact performance of under-expanded carbon dioxide flash boiling jet
15:40-15:50	Liu Tong China University of Mining and Technology	Study on 4D visual physical simulation experiment of dynamic adsorption and migration process of methane in coal
15:50-16:00	Koki Kawano Kyushu University (Japan)	Study on surface subsidence in multi-seam underground coal mining with room and pillar mining and longwall mining by using numerical simulation

Stage 2:	Presiders: LIU Jian & HUANG Fei	
16:00-16:15 (Invited Lecture)	Wang Gang Shandong University of Science and Technology	Theory of seepage-wetting in coal rock and its implication for preventing and controlling of engineering disasters
16:15-16:30 (Invited Lecture)	Yang Wei China University of Mining and Technology	Mine stress field assimilation-inversion and outburst path evolution research
16:30-16:45 (Invited Lecture)	Petr Konicek Institute of Geonics of the Czech Academy of Sciences (Czech)	Destress blasting approach in the light of rockburst prevention from the experience of Czech coal mines
16:45-17:00 (Invited Lecture)	Qiu Liming University of Science and Technology Beijing	Prevention and control strategies and methods for stress dominated disasters in deep outburst coal seam
17:00-17:10	Pan Hongyu Xi'an University of Science and Technology	Molecular simulation of CH_4 replacement and coal structure by CO_2 foam injection in slit pores
17:10-17:20	Wang Wen Henan Polytechnic University	Key technologies for gas leakage diffusion and prevention under the influence of mining activities
17:20-17:30	Liu Peng Chongqing University	High power broadband ultrasonic modified infiltration technology and engineering application
17:30-17:40	Yan Fazhi Taiyuan University of Technology	Study on structure damage and permeability enhancement law of coal by controlled electric pulse cracking under multi-field coupling
17:40-17:50	Raiga Kawai Kyushu University (Japan)	Study on CO_2 sequestration using micronanobubbles in abandoned coal mine sites
17:50-18:00	Li Xuelong Shandong University of Science and Technology	Mechanism of permeability enhancement through multiscale structural evolution in coal induced by liquid nitrogen immersion
18:00-18:10	Li Purui Anhui University of Science and Technology	Effects of the CO_2-alkaline-water Two-phase displacing gas and wetting coal
18:10-18:20	Hu Jiaying North China Institute of Science and Technology	Contact states-energy conversion mechanism at structural interfaces of gas-bearing coal seams during shear process
18:20-18:30	Zhuo Risheng Xi`an University Of Science And Technology	Mechanism and application of coupled evolution in pressure relief gas migration and storage zones during mining of inclined extremely thick coal seams

October 12 | 08:30-11:00 | Venue: Yunxi Hall (1st Floor, Building 3)

Thematic reports	Presiders: LU Weidong & WANG Gang	
08:30-8:45 (Invited Lecture)	Nie Baisheng Chongqing University	Progress on mechanism and prevention technology of coal and gas outburst
08:45-9:00 (Invited Lecture)	Li Shuqing Hunan University of Science and Technology	Damage and permeability evolution of coal body in coal seam cut by diamond bead wire saw
09:00-9:15 (Invited Lecture)	Lu Weidong Xinjiang Institute of Engineering	Study on the dynamic evolution law of fractures in structural coal-bearing composites under loading
09:15-9:30 (Invited Lecture)	Majid Khan University of Science and Technology	Acoustic emission–driven fracture modeling for rockburst prediction
09:30-9:45 (Invited Lecture)	Hu Shengyong Taiyuan University of Technology	Research and application of synergistic control technology for coal mine gas and coal dust under strong moisture-enhanced permeability in coal seams
09:45-10:00 (Invited Lecture)	Yang Juan Henan Polytechnic University	Solar-energy-driven oxidation of low concentration coalmine methane to methanol and performance enhancing mechanism
10:00-10:10	Mateusz Bik Fasing Plc (Poland)	FASING Group: Improving mine safety through collaboration between manufacturers and end users
10:10-10:20	Li Baolin North University of China	Intelligent recognition of AE-EMR-GAS precursor signals of coal and gas outburst and fusion early warning research
10:20-10:30	Wang Chunxia Liupanshui Normal University	Study on the evolution characteristics of coal pore structure under acidification
10:30-10:40	Han Hongkai Henan Polytechnic University	Stress-permeability evolution laws and differentiated extraction method for upper protective seam mining based on the key strata structure
10:40-10:50	Zhao Yingjie University of Science and Technology Beijing	Regional stress field detection and dynamic risk prediction methods for coal and gas outburst seams
10:50-11:00	Qiu Peng Taiyuan University of Technology	Experimental study on fracture mechanism of coal blasting to increase coal permeability

Parallel session II: Prevention and Control of Thermal and Dynamic Disasters in Mines

October 11 | 14:00-18:30 | Venue: Hongshi Hall (3rd Floor, Building 3)

Stage 1:	**Presiders: WANG Hetang & WANG Caiping**	
14:00-14:15 (Invited Lecture)	Zhu Hongqing China University of Mining and Technology (Beijing)	ESGM-based dielectric signal gain method for coal spontaneous combustion: Characterization of characteristic temperature and Curie temperature
14:15-14:30 (Invited Lecture)	Xu Chenglin CCTEG Chongqing Research Institute	Open local inerting fire extinguishing technology in working face
14:30-14:45 (Invited Lecture)	Zhong Xiaoxing China University of Mining and	Monitoring, early warning and efficient governance technologies for coal fire disasters
14:45-15:00 (Invited Lecture)	Gaoke Liaoning Technical University	Resilient ventilation network construction in complex underground mining environments: A Holistic strategy from resilience perception to resilience enhancement
15:00-15:15 (Invited Lecture)	An Weiguang China University of Mining and	Flame spread behavior and smoke transport mechanism in underground long-narrow confined spaces
15:15-15:30 (Invited Lecture)	Han Fangwei Liaoning Technical University	Evaluation method of dynamic wetting performance for water-based materials on mineral dust and its application
15:30-15:40	Hao Chaoyu Taiyuan University of Technology	Study on the effect of humidity on the methane consumption rate of coal and ventilation air methane co-combustion
15:40-15:50	Kong Xiangguo Xi'an University of Science and	Dynamic characteristics and damage-fracture laws of coal under impact load
15:50-16:00	Zhou Bin Taiyuan University of Technology	Study on the influence of high-humidity and high-dust coal mine environments on the acoustic wave characteristics of ultrasonic wind speed sensors

Stage 2:	**Presiders: HU Xiangming & YOU Bo**	
16:00-16:15 (Invited Lecture)	Zhou Xihua Liaoning Technical University	Liquid carbon dioxide fire prevention and extinguishing technology in coal mine
16:15-16:30 (Invited Lecture)	Zhai Xiaowei Xi'an University of Science and Technology	Key technologies and applications of liquid carbon dioxide for fire prevention and extinguishing in mines
16:30-16:45 (Invited Lecture)	Qi Xuyao China University of Mining and Technology	Kinetic characteristics of coal spontaneous combustion and oxidation and their staged control
16:45-17:00 (Invited Lecture)	Nie Wen Shandong University of Science and Technology	Multi-Scale dynamic mechanisms and precise prevention strategies for wind-borne coal dust
17:00-17:10	Gao Na University of Science and Technology Beijing	The characteristics of high-efficiency and environmental-friendly dust suppressants and the intelligent mixed spray dust reduction system for coal mines
17:10-17:20	Shi Quanlin China University of Mining and Technology	Study of the warning model based on BO-CNN-GRU Dual for coal spontaneous combustion
17:20-17:30	Xie Biao Taiyuan University of Technology	Research on operational characteristics and efficiency enhancement technologies of filter dust collectors in humid conditions
17:30-17:40	Xu Jie Xi'an University of Science and Technology	Preparation and performance research of new carbon-based flame retardant materials
17:40-17:50	Chongqi Wei Shandong Micro-sensors	Application of fiber optic sensors in fire monitoring of coal mine belt conveyors
17:50-18:00	Li Yizhuo University of Science and Technology Beijing	An integrated approach for roof caving risk management in mines using AI-based recognition and diametrical core deformation techniques
18:00-18:10	Wang Jie North China Institute of Science and Technology	Bio-based polymers in fire prevention and control: Applications in dust suppression and microbubble interfacial effects
18:10-18:20	Song Bobo Xi'an University of Science and Technology	The generation law of spontaneous combustion products of oil-rich coal and the evolution law of key functional groups
18:20-18:30	Xu Ran Hunan Institute of Technology	Development and Prospects of Low-Concentration Coal-Bed Methane Upgrading Carbon Molecular Sieves – High-Performance CMS under Eco-Friendly Processes

October 12 | 08:30-11:00 | Venue: Hongshi Hall (3rd Floor, Building 3)

Thematic reports	Presiders: ZHOU Xihua & WANG Haiyan	
08:30-8:45 (Invited Lecture)	Wang Fusheng North China University of Science	Microscopic analysis of the differences in low-temperature oxidation ability of coal
08:45-9:00 (Invited Lecture)	Lu Wei Anhui University of Science and	New Method and system of full wet dust removal in heading face
09:00-9:15 (Invited Lecture)	Wang Liang China University of Mining and Technology	Mechanism and prevention-control technologies of gas-bearing coal dynamic disasters induced by mining disturbance in hard roof environment
09:15-9:30 (Invited Lecture)	Lu Yi Hunan University of Science and	Thickened slurry for coal spontaneous combustion and gas explosion control in goaf of coal mines
09:30-9:45 (Invited Lecture)	Guo Hongguang Taiyuan University of Technology	Developing microbial technology for mining safety
09:45-10:00 (Invited Lecture)	Qiao Ming University of Wollongong	Advanced CFD modelling of goaf gas flammability zone and risk mitigation in longwall mining
10:00-10:10	Zhang Liang China Coal Technology & Engineering Group	Study on common basic technology of geothermal reservoir development in abandoned mines
10:10-10:20	Pei Bei Henan Polytechnic University	Study on dust and explosion suppression performance of N_2 modified NaH_2PO_4 water mist
10:20-10:30	Zhao Xia University of Wollongong	Comparative analysis of spray nozzle performance for dust suppression of coal and silica dust
10:30-10:40	Wang Fengxiao Liaoning Technical University	Study on the characteristics and mechanisms of $KHCO_3$ powder in suppressing methane explosions in the pipeline network
10:40-10:50	Zhou Shangyong Xi'an University of Science and	Chemical dynamic analysis of the spontaneous ignition during high pressure H_2/CH_4 mixture leakage into a rectangular tube
10:50-11:00	Itmam Abedin University of Wollongong (Australia)	Gas sorption and water saturation: effects on coal energy accumulation and acoustic emission

Parallel session III: Intelligent, Safe and Green Mining in Mines

October 11 | 14:00-18:30 | Venue: Yingbin Hall (1st Floor, Building 2)

Stage 1:	**Presiders: CHEN Xuexue & WANG Pengfei**	
14:00-14:15 (Invited Lecture)	F.Albert Liu McGill University	Numerical analysis on the formation of hang-ups in ore pass
14:15-14:30 (Invited Lecture)	Dou Linming China University of Mining and Technology	Study on mechanism of coal, rock and gas compound dynamic disasters
14:30-14:45 (Invited Lecture)	Wen Zhijie Guizhou University	Research and practice on mining dynamics and rock strata control
14:45-15:00 (Invited Lecture)	Chen Jie Chongqing University	Characterization of mine rock mass catastrophic signals and disaster monitoring and early warning
15:00-15:15 (Invited Lecture)	He Shengquan University of Science and Technology Beijing	Method of splitting and reconstructing longitudinal and transverse waves in coal rock fracture and the dynamic damage law of surrounding rock in roadways
15:15-15:30 (Invited Lecture)	Cai Wu China University of Mining and Technology	An experimental investigation into fault reactivation mechanism and related seismic responses induced by hydraulic fracturing in mining areas
15:30-15:40	Du Feng China University of Mining and Technology (Beijing)	Mechanisms of energy release in fracture and gas expansion-driven instabilities of coal–rock composite structure: theoretical modeling and experimental validation
15:40-15:50	Li Hao Liaoning Technical University	The Mechanism of electromagnetic radiation generation when coal-rock assemblages fracture under load
15:50-16:00	Galih Dinanta McGill University (Canada)	Toward good mining practice for underground small-scale gold mining and its safety evaluation

Stage 2:	Presiders: XIA Zhiguo & WANG Yajun	
16:00-16:15 (Invited Lecture)	Wang Guangjin Kunming University of Science and Technology	Impact analysis and evolution process of the sediment flow with tailings dam break
16:15-16:30 (Invited Lecture)	Peng Shoujian Chongqing University	The strength characteristics of brittle coal after yielding under cyclic loading conditions
16:30-16:45 (Invited Lecture)	Bai Gang Liaoning Technical University	Development of low-carbon integrated technologies and systems for coal mine disaster mitigation
16:45-17:00 (Invited Lecture)	Liu Yingke China University of Mining and Technology	Research and application of active transport technology for fractured particles generated by hydraulic cavitation in downward boreholes
17:00-17:10	Zhang Yihai China Academy of Safety Science and Technology	Research on emergency rescue monitoring of slope collapse in Arai coal mine, Inner Mongolia
17:10-17:20	Liu Yubing China University of Mining and Technology	Anisotropic evolution of deep coal: mechanical and seepage responses to true triaxial static-dynamic stresses
17:20-17:30	Chen Hang China Coal Technology & Engineering Group Chongqing Research	Progress of underground coal mine drilling robots
17:30-17:40	Zhang Chenghao Shandong Micro-sensors Photonics Co. Ltd	Research on belt conveyor rollers monitoring based on distributed vibration fiber optics sensing system
17:40-17:50	Jiang Mingwei Hokkaido University	Mitigation of induced seismicity by increasing fracture stiffness within fault damage zones
17:50-18:00	Zhong Taoping University of Science and Technology Beijing	Rock burst mechanism during roadway tunneling of steeply inclined and extremely thick coal seams
18:00-18:10	Tian Xianghui China University of Geosciences (Beijing)	A novel method for predicting rock fractures based on gradient boosting decision trees
18:10-18:20	Rui Yichao Chongqing University	Study on network optimization and seismic source robustness positioning in confined space of mine
18:20-18:30	Zhang Jingfei Xi'an University of Science and Technology	Dissolution and mineralization mechanism of coal/rock-alkaline solid waste under temperature-pressure constraints in mined-out area: Implications for pore network reconstruction and carbon sequestration security

October 12 | 08:30-11:00 | Venue: Yingbin Hall (1st Floor, Building 2)

Thematic reports	Presiders: SONG Dazhao & ZHANG Jiayong	
08:30-8:45 (Invited Lecture)	Wang Enyuan China University of Mining and Technology	Integrated monitoring and intelligent early warning technology for multiple coal mine disasters
08:45-9:00 (Invited Lecture)	Zhang Zhenyu Chongqing University	Transport mechanism of CH_4/CO_2 gas mixture in nano-confined space coal matrix
09:00-9:15 (Invited Lecture)	Huang Guangping Institute of Rock and Soil Mechanics, Chinese Academy of Sciences	Developing rapid-set calcium sulfoaluminate cement-based mixtures for mine rock support in permafrost regions
09:15-9:30 (Invited Lecture)	Liu Zhen Shandong University of Science and Technology	Fractal characteristics of full scale structure of low permeability coal seam and dynamic mechanism of liquid seepage-wetting
09:30-9:45 (Invited Lecture)	Li Zhenlei University of Science and Technology Beijing	A novel methodology for AE full waveform analysis during rock failure
09:45-10:00 (Invited Lecture)	Feng Zijun Taiyuan University of Technology	Directionally Thermal Fracturing of Stressed Granite
10:00-10:10	Zhang Ke Hebei University of Technology	Integrated physical reconstruction and non-contact sensing of fractured rock masses: A new framework for rock mechanics testing
10:10-10:20	Wang Chenghao China University of Mining and Technology	Theoretical framework for development and intensity analysis of coal and gas outbursts based on dual energy contraints
10:20-10:30	Wu Fan University of Science and Technology Beijing	Study on the mechanism of gas flow in dual-pore coal bodies during drilling and extraction under air leakage conditions
10:30-10:40	Xue Bo Ordos Institute of Applied Technology	A study on risk quantification and prevention strategies for extra-thick hard coal rib spalling based on safe production
10:40-10:50	Liu Sibo Xi'an University of Science and Technology	Research on the characteristics of overlying rock fracturing in roadway maintained by roof cutting and connecting adjacent goaf and its application
10:50-11:00	Peng Yujie Beijing Institute of Petrochemical Technology	Multi-integrated unsupervised learning hierarchical earlying warning method for outburst risk in deep coal seam

Parallel session IV: Young Scholars Forum I

October 11 | 14:00-18:00 | Venue: Qingpingyue (3rd Floor, Building 3)

Thematic reports	Presiders: YANG Juan & GUO Haijun	
14:00-14:10	Shao Zhuangzhuang University of Science and Technology Beijing	Stage characteristics and transformation mechanism of combustion process in closed fire zone
14:10-14:20	Zhang Yuzhen Henan Polytechnic University	Study on the influence of pre-cut grooves on the mechanical properties of granite
14:20-14:30	Song Fangzhou China University of Mining and Technology (Beijing)	Theoretical research and control measures of gas accumulation based on airflow oscillation model in the upper ventilation of parallel roadway
14:30-14:40	Liang Ran Liaoning Technical University	Research on coal spontaneous combustion temperature prediction modeloptimized by BP Neural Network based on improved sparrow search algorithm
14:40-14:50	Liu Wei Henan Polytechnic University	Characteristics of the reciprocal effects of mechanical deterioration and oxida-tive spontaneous combustion in deep-mined coal
14:50-15:00	He Long Anhui University of Science and Technology	Research on the spontaneous combustion characteristics of thermally decomposed coal bodies
15:00-15:10	Zhang Xigan University of Science and Technology Beijing	Feasibility analysis of positive and negative pressure switchable isolation capsules and comparison of ventilation strategies based on flow field simulation
15:10-15:20	Wang Mengyuan Henan Polytechnic University	Effects of vortex structure evolution on the impact performance of pulsed water jets
15:20-15:30	Guo Qi Heilongjiang University of Science and Technology	Determination of phase equilibrium of CH_4 hydrate in coal-thermodynamic accelerator-CH_4 system and thermodynamic modelling
15:30-15:40	Jiang Zhuo Liaoning Technical University	Research on efficient dust reduction technology of negative pressure induced dust control and supersonic spraying linkage in fully mechanized coal face
15:40-15:50	Hua Chunlei Henan Polytechnic University	Study on the modulation and coal-breaking characteristics of annular-fluid-enhanced self-excited pulsed abrasive jet
15:50-16:00	Shi Yu China University of Mining and Technology	Study on multi-field control mechanism of gas concentration and efficiency improvement by gas injection in deep coal seam

Thematic reports	Presiders: HAN Hongkai & LIU Peng	
16:00-16:10	Tian Xin China University of Mining and Technology (Beijing)	Review of typical unsafe behaviors and identification methods of underground coal mine workers
16:10-16:20	Zhang Wending Henan Polytechnic University	Research on the evolution law of fractures in soft coal seams punched by air jet
16:20-16:30	Wang Xinlei Qingdao University of Technology	Development and performance enhancement of wheat straw-based dust suppressant for open-pit mines
16:30-16:40	He Di Xi'an University of Science and Technology	Micro-structure and permeability evolution of coal under dynamic load: A new permeability model considering damage factor of disturbance
16:40-16:50	Zhen Zedong Henan Polytechnic University	Comparative study on multistage acceleration characteristics of low pressure abrasive air jet
16:50-17:00	Lv Yingpei China University of Mining and Technology (Beijing)	Exploring the impact of surfactant concentration on coal wettability: experiments and molecular dynamics simulations combined
17:00-17:10	Lu Xiaotong Henan Polytechnic University	Research on the distribution characteristics of internal gases in the gas injection displacement process of deep water-bearing coal seams
17:10-17:20	Zhang Yuxin Liaoning Technical University	The influence of uncertainties in foam ceramic structural parameters and radiation models on the prediction of ammonia combustion stability
17:20-17:30	Gao Mengya Henan Polytechnic University	Study on the influence of downstream nozzle structure on the performance of self-oscillating pulse SC-CO_2 jets
17:30-17:40	Yang Xinwu Liaoning Technical University	Investigation into the influence of residual coal adsorption on spontaneous combustion hazard zones in the goaf
17:40-17:50	Li Xiaoxu China University of Mining and Technology (Beijing)	Mechanical properties and infrared radiation precursors of phase change energy storage backfill under impact loading
17:50-18:00	Min Rui Henan Polytechnic University	Macromolecular pore model construction and theoretical study of Inner Mongolia Long-flame coal
18:00-18:10	Zhang Weiguang Xi'an University of Science and Technology	Dangerous area evolution and coal spontaneous combustion prevention method induced by air leakage in goaf of ultra-long working face
18:10-18:20	Wang Di China University of Mining and Technology	Improvement of wind speed measurement in mine roadway by transit-time difference method: correction of error caused by nonlinear trajectory of ultrasonic in turbulent flow
18:20-18:30	Zhao Jiatong Henan Polytechnic University	Numerical simulation method for predicting compound dangerous areas with gas emission and coal spontaneous combustion in gob

October 12 | 08:30-11:00 | Venue: Qingpingyue (3rd Floor, Building 3)

Thematic reports	Presiders: QI Lingling & LV Xin	
08:30-8:40	Gao Saiyi China University of Mining and Technology (Beijing)	Investigation on the evolution characteristics and gas generation mechanism of coal spontaneous combustion-extinction-reignition in sealed fire zones based on ReaxFF Simulation
08:40-8:50	Zhang Yifan Henan Polytechnic University	Three-dimensional modeling method for coal seam zoning in working faces based on fault constraints
08:50-9:00	Liu Weiyi Xi'an University of Science and Technology	Study on the evolution laws of flow and temperature fields of coal particle agglomerates based on LBM model
09:00-9:10	Zheng Qinbao Henan Polytechnic University	Study on inhibition effect of low temperature environment on gas expansion energy of anthracite
09:10-9:20	Wang Yi China University of Mining and Technology	Study on CO Release characteristics and generation pathways of coal during high-temperature oxidation
09:20-9:30	Zhao Yang Henan Polytechnic University	Study on the strain characteristics of tunnel surrounding rock under the coupled effects of ground stress and gas explosion
09:30-9:40	Wang Longhang Henan Polytechnic University	Research on fracture identification and 3D Reconstruction of coal-rock composite based on deep learning
9:40-9:50	Yue Yi China University of Mining and Technology	Key technologies for remote mining excavation in coal mines
9:50-10:00	Guan Longhui Henan Polytechnic University	RBF implicit function-octree voxel coupling for dynamic 3D geological modeling
10:00-10:10	Li Xiaowei China University of Mining and Technology (Beijing)	Feasibility assessment of coal as a charge-discharge H_2 battery for geological hydrogen storage-extraction
10:10-10:20	Yaping Hou Henan Polytechnic University	Asymmetric mechanical model and stress evolution law of 'plate-beam' structure of overlying strata in inclined coal seam mining
10:20-10:30	Peng Yalan Heilongjiang University of Science and Technology	Temperature field effects on hydrate-based CO_2 sequestration in cold-region coal mine goaf: Kinetics of formation and dissociation
10:30-10:40	Jia Yaowu Henan Polytechnic University	Mechanism and application of pneumatic caving in high stress soft coal seam to promote gas drainage
10:40-10:50	Lu Hao China University of Mining and Technology (Beijing)	Study on the enhancement of oxidation activity of heated coal in closed fire area and mechanism of reignition by opening seal
10:50-11:00	Li Haoming Henan Polytechnic University	Research on optimization of delay time and effect evaluation of open-air step loosening blasting based on digital electronic detonators

Parallel session V: Young Scholars Forum II

October 11 | 14:00-18:00 | Venue: Sihechun (1st Floor, Building 3)

Thematic reports	Presiders: PEI Bei & XU Ran	
14:00-14:10	Liang Yimin China University of Mining and Technology (Beijing)	Analysis of causative mechanisms and mitigation strategies of coal and gas outbursts based on 2010–2024 Cases
14:10-14:20	Deng Yujie Henan Polytechnic University	Research on the optimal jet pressure of self-oscillating pulse SC-CO_2 jet based on the evolution period of vortex structure
14:20-14:30	Cao Yu Liaoning Technical University	Experimental study on the comparison of the inhibitory effects of N_2/CO_2 on the spontaneous combustion of coal and the key temperature points for inerting
14:30-14:40	Wang Weili (Beijing)	Experimental study on heat recovery from ventilation air methane oxidation using high-temperature heat pipes
14:40-14:50	An Kang Henan Polytechnic University	Exploring the discrepancy of gas desorption between raw and tectonic coal under cryogenic condition: inspiration for accurate measurement of gas content
14:50-15:00	Wang Shanqi China University of Mining and Technology (Beijing)	Study on the spatiotemporal diffusion law of CO from confined-space blasting and the efficiency of ventilation smoke exhaust in underground mines
15:00-15:10	Bai Qihui Liaoning Technical University	Influence and inerting mechanism of CO_2 and N_2 on the characteristics of oxidative spontaneous combustion in coal
15:10-15:20	Xu Yanzhi Henan Polytechnic University	Experimental study on microstructure and gas seepage of coal body under supercritical CO_2 action
15:20-15:30	Wang Linzhi China University of Mining and Technology	Hydraulic properties of lining concrete in abandoned mine pumped storage systems
15:30-15:40	Wang Yinqing China University of Mining and Technology (Beijing)	Prediction of dust concentration in fully mechanized coal mining face based on ZOA-XGBoost
15:40-15:50	Gao Yingjun Henan Polytechnic University	Study on the stress field evolution and crack extension law of coal breaking with flexible cutting tools
15:50-16:00	Niu Yanjie Shandong University of Science and Technology	Mechanism of zeolite loaded potassium dihydrogen phosphate for suppressing methane-coal dust explosions

Thematic reports	Presiders: Liu Xiaolei & Mu Hongwei	
16:00-16:10	Ma Tao Xi'an University of Science and Technology	Identification and classification prediction of microseismic signals from coal-rock fracture in deep coal mines
16:10-16:20	Fang Yingxiang Henan Polytechnic University	Numerical simulation study on the propagation law of shock waves in mine-scale gas and coal dust explosions
16:20-16:30	Liu Bing China University of Mining and Technology (Beijing)	Molecular simulation of CO_2 replacement of O_2 in coal under pressurized conditions
16:30-16:40	Chensheng Wang Henan Polytechnic University	Study on the heat release properties of coal oxidation with a composite polymer inhibitor of shellfish byssus
16:40-16:50	Liu Jingyi Liaoning Technical University	Energy effects and correlation analysis of methane adsorption for vacuum layer structure by coal molecules under the influence of water molecules
16:50-17:00	Zhao Jian Anhui University of Science and Technology	Reaction mechanism and characteristics of CO/CO_2 generation during low-temperature oxidation of low-rank coal
17:00-17:10	Zhao Xiangfeng Henan Polytechnic University	Theoretical Research on Coal Seam Structure Identification and Prediction Based on Machine Learning
17:10-17:20	Qin Yu Liaoning Technical University	Early warning of bolt safety status based on failure risk assessment
17:20-17:30	Davie Jaja Henan Polytechnic University	Thermal effect and active groups fluctuation in the process of spontaneous combustion in Guzhuang mine, Shanxi
17:30-17:40	Jia Zixuan China University of Mining and Technology (Beijing)	Gas-thermal characteristics and active group evolution mechanisms in the dynamic processes of coal spontaneous combustion-extinction-reignition
17:40-17:50	Wang Xi Henan Polytechnic University	Study on turbulent combustion kinetics of hydrogen-enriched mine gas
17:50-18:00	Xuesong Li Xi'an University of Science and Technology	Kinetic analysis of low-temperature oxidation of typical open-pit mine minerals based on functional group evolution characteristics
18:00-18:10	Guo Xiaoxi Henan Polytechnic University	Study on the energy distribution and damage characteristics of impact waves in microwave-assisted deep rock blasting
18:10-18:20	Wei Yanzhao Henan Polytechnic University	Study on pore and fracture evolution characteristics and gas desorption law of coal-rock combination body under impact loading
18:20-18:30	Yao Jing University of Science and Technology Beijing	Research on the influencing factors and laws of shock wave propagation in physical explosion of high-pressure natural gas pipelines

Closing ceremony

October 12 | 11:30-12:00 | Venue: Yunxi Hall (1st Floor, Building 3)

CLOSING CEREMONY	
PRESIDER: LIU YONG, VICE DEAN OF THE SSSE, HPU	
11:00-12:00	**1. Announcement of Outstanding Paper Awards and Presentation Ceremony — Vice President Li Zhenhua** **2. Concluding Remarks for ISMSSE 2025 — Vice President Wei Jianping** **3. Address by the Host of the 9th Edition — Prof. Tingxiang Ren, University of Wollongong, Australia** **4. Declaration of Conference Closing — Prof. He Xueqiu**

VI. Introduction of Distinguished Invited Speakers

Prof. Yunxing Cao | Henan Polytechnic University

Profile: Professor and Doctoral Supervisor, Fellow of the Canadian Academy of Engineering (CAE). Currently serving as the director of the Henan International Joint Laboratory of Unconventional Energy and Geology and the director of the Coalbed Methane/Gas Geology Engineering Research Center at Henan Polytechnic University.

Research Focus: Coal mine gas geology, geological theories for efficient coalbed methane development under complex geological conditions, stimulation technologies, and engineering applications.

Key Achievements:

• Developed CO_2 fracturing technology and equipment deployed in 28 coal mines with gas outburst and rock burst in China and the U.S., significantly enhancing gas extraction and disaster prevention outcomes.

• Achieved breakthrough progress in production enhancement for low-yield coalbed methane wells.

Honored with:

• 1 National Science and Technology Progress Award (Second Class)

• 1 Provincial/Ministerial Special Prize for Science and Technology

• 2 First-Class Provincial/Ministerial Science and Technology Awards

• 1 International Science and Technology Cooperation Award

• Published 116 academic papers.

Prof. Fan Jingdao | Henan Polytechnic University

Profile: Professor and Doctoral Supervisor, Director of the Mine Intelligent Mining Technology Innovation Center under the Ministry of Emergency Management of China.

Research Focus: Long-term research and engineering practice in intelligent coal mining, intelligent mine construction, and intelligent safety systems at Shaanxi Coal Group and Yanchang Petroleum Group. Innovative achievements have been featured in special reports by People's Daily and Xinhua News Agency.

Research Leadership:

• Led 6 national scientific research projects

• Awarded the 2020 National Science and Technology Progress Award

• Received 8 provincial/ministerial first-class awards (all ranked 1st)

Publications & Achievements:

• 18 authorized invention patents

• Published 5 academic monographs and 45 research papers

• Developed 11 standardized engineering methods

Honors:

• National Innovation Pioneer Award

• Sun Yueqi Energy Grand Award

• State Council Special Allowance for Outstanding Contributions

• “Sanqin Scholar” of Shaanxi Province

• “Most Beautiful Scientific Worker” of Shaanxi Province and the Coal Industry

Prof. Stanislaw Prusek | Fasing/Central Mining Institute

Profile: D.Sc. (Doctor of Science), Mining Engineer. Professor of Technical Sciences with over 30 years of experience in the hard coal mining industry. Graduated from the Faculty of Mining and Geology at the Silesian University of Technology. Served at the Central Mining Institute (Główny Instytut Górnictwa) since 1991, and as its Director from 2015 to 2024. Currently Vice President and Development Director of FASING Group S.A.

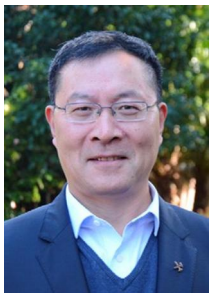
Research Focus: Underground coal mining technologies.

Key Achievements:

• Published findings in multiple monographs and approximately 200 peer-reviewed journals internationally. • Member of numerous academic associations and organizations, including:

• International Organizing Committee of the World Mining Congress

• Mining Committee of the Polish Academy of Sciences



Prof. Tingxiang Ren | University of Wollongong, Australia

Profile:

• Fellow of the Institute of Materials, Minerals and Mining (IOM3), UK

• Chartered Engineer (CEng) registered with the Engineering Council, UK

• Member of the Australasian Institute of Mining and Metallurgy (AusIMM)

• Member of the Australian Mine Ventilation Society (AMVS)

• Currently Deputy Director of the Australian Research Council (ARC) Industrial Transformation Training Centre (ITTC)

Research Focus:

Mining engineering and mine safety, with emphasis on:

• Occupational health in mining

• Mine dust mitigation

• Coal mine gas management

• Mine fire prevention

• Computational numerical modeling in mining engineering

Research Leadership:

Has led and managed research projects totaling over AUD 10 million, funded by:

• European Coal and Steel Community (ECSC)

• Australian Coal Association Research Program (ACARP)

• Australian Research Council (ARC)

• Industry partnerships

Prof. Hu Jun | Liaoning University of Science and Technology

Profile: Professor and Doctoral Supervisor, currently serving as Deputy Secretary of the Party Committee and President of Liaoning University of Science and Technology.

Research Focus:

• Numerical simulation in geotechnical engineering

• Automated safety monitoring and early warning systems for tailings ponds

• Slope stability evaluation

• Remote sensing image processing

Research Projects:

Led over 30 major research projects, including:

• Projects funded by the Chinese Academy of Engineering

• National Natural Science Foundation of China (NSFC) projects

• Enterprise-sponsored key technology development programs

• Total research funding exceeding 40 million CNY (approx. 5.5 million USD).

Publications & Honors:

• Published 1 textbook and 100+ academic papers (including 40+ indexed by SCI/EI)

• Awarded the title of Outstanding Teacher of Liaoning Province.

Prof. Baoyao Tang | Orla Mining Ltd.

Profile:

Currently serving as Chief Rock Mechanics Engineer at Orla Mining Ltd.

• Graduated from Jiaozuo Mining Institute in 1983.

• Earned a Ph.D. in Mining Engineering from McGill University in 2000 with outstanding academic performance. Professional Experience:

• Joined Flairbase (a mining software developer) as a Project Engineer, serving until the end of 2004.

• Subsequently, joined Cameco (uranium company) as a Junior Management Engineer, advanced through multiple roles, and was promoted to Technical Director in 2013, serving until the end of 2018.

• During this period, spent two years at BHP Billiton, contributing to the world's largest potash mine project.

• In 2019, served as Principal Engineer at AMC Mining Consulting Engineers.

• Then joined Pretivm Mining (gold focus) in a senior engineering role.

• Later joined Hecla Mining (silver, lead, zinc focus) as Chief Engineer and Chief Engineering Geologist.

Prof. Liu Quansheng | Wuhan University

Profile: Professor and Doctoral Supervisor, Vice Chair of the Academic Committee of Wuhan University, and Changjiang Distinguished Professor (awarded by the Ministry of Education of China).

Research Focus:

• Stability of surrounding rock in deep engineering and control of fragmentation-induced large deformation disasters

• Efficient TBM tunneling in complex strata

• Intelligent sensing and recognition of coal-rock information during coal mining processes

• Simulation and control of thermo-hydro-mechanical coupling disaster mechanisms in fractured rock masses

Research Leadership:

• Led 10 projects under the National Natural Science Foundation of China (NSFC)

• Directed over 10 national key projects, including the National Basic Research Program of China (973 Program)

• Managed 40+ major engineering research projects

Publications & Achievements:

• Published 700 papers indexed in SCI/EI

• Holds 68 invention patents

• Awarded 4 National Science and Technology Progress Awards (Second Class)

Prof. Qin Botao | China University of Mining and Technology

Profile: Doctoral Supervisor, Chief Scientist of the National Key R&D Program of China, and recipient of the State Council Special Allowance.

• Awardee of the National Science Fund for Distinguished Young Scholars

• Leading Scientist of the National Ten Thousand Talents Program

• Member of the National Work Safety Expert Group

• Recipient of the China Youth Science and Technology Award and National Excellent Doctoral Dissertation Award

Research Focus:

Teaching and research in Safety Science and Engineering.

Research Leadership:

Led over 10 national-level projects, including:

• National Key R&D Program “Major Natural Disaster Prevention and Public Safety”

• Key Projects of the National Natural Science Foundation of China (NSFC)

• Directed dozens of enterprise-sponsored technology development programs.

Achievements (Awards, Publications and others):

• National Technology Invention Award (Second Class)

• National Science and Technology Progress Award (Second Class)

• National Teaching Achievement Award (Second Class)

• Jiangsu Provincial Science and Technology Award (First Class)

• China Coal Industry Association Science and Technology Award (First Class)

• China Excellent Patent Award

• 150+ high-level research papers

• 3 academic monographs

• 70+ invention patents (including U.S. and international grants)

• Developed 1 national work safety industry standard

• Served as Associate Editor of the Coal Mine Chief Engineer Technical Manual

VII. Other Important Notes

1. Transportation information

(1) From Zhengzhou Xinzheng International Airport to Jiaozuo Railway Station

• Transfer at the GTC (Ground Transportation Center) to take a high-speed train to Jiaozuo Railway Station.

(2) From Zhengzhou Xinzheng International Airport to Zhengzhou East Railway Station to Jiaozuo Railway Station

• Route 1: Take a taxi (get off at Zhengzhou East Railway Station, approximately CNY 73, about 40 minutes, 35 km)

• Route 2: From Airport Station Exit G, take the subway → Chengjiao Line → Metro Line 2 → Metro Line 5 Outer Ring (get off at Zhengzhou East Railway Station, about 1 hour 30 minutes)

• Route 3: Take Airport Bus Line 2 (get off at Zhengzhou East Railway Station, fare: CNY 20, about 1 hour 35 minutes).

Zhengzhou East Railway Station → Jiaozuo Railway Station (by high-speed rail or bullet train, about 1 hour)

(3) From Zhengzhou Xinzheng International Airport to Zhengzhou Railway Station to Jiaozuo Railway Station

• Route 1: Take a taxi (get off at Zhengzhou Railway Station, approximately CNY 80, about 40 minutes)

• Route 2: From Airport Station Exit G, take the subway → Chengjiao Line → Metro Line 2 → Metro Line 1 (get off at Zhengzhou Railway Station, about 1 hour 40 minutes)

• Route 3: Take Airport Bus Line 6 (get off at Zhengzhou Railway Station West Square, fare: CNY 20, about 1 hour 50 minutes)

Zhengzhou Railway Station → Jiaozuo Railway Station (by high-speed rail or bullet train, about 30-40 minutes)

(4) From Jiaozuo Railway Station to Jiaozuo Yingbin Hotel

• Take a taxi (get off at Jiaozuo Yingbin Hotel, approximately CNY 12, about 15 minutes, 5.0 km)

2. Weather conditions in Jiaozuo

Date	Time	Weather		Temperature	Wind
October 10	Day		Light rain	15℃	Light breeze
	Night		Light rain	11℃	Light breeze
October 11	Day		Light rain	15℃	Light breeze
	Night		Light rain	11℃	Light breeze
October 12	Day		Light rain	12℃	Light breeze
	Night		Light rain	9℃	Light breeze

Conference Records

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