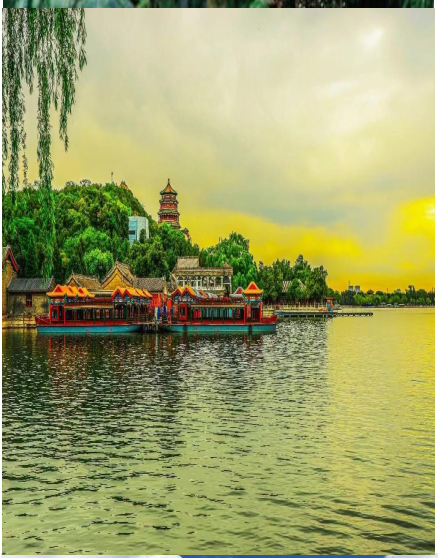



ICSTI2025

The 10th International Congress on the Science and Technology of Ironmaking

August 25-29, 2025 Beijing, China





Technical Program

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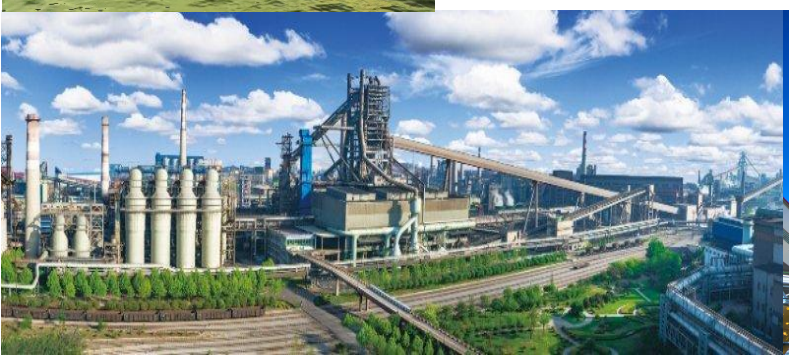


Time Table

Plenary Sessions				
Aug. 26 Morning	Plenary Session P1			
Aug. 26 Afternoon	Plenary Session P2			
Parallel Sessions				
	Room A	Room B	Room C	Room D
Aug. 27 Morning	Session A1: Sintering and Pelletizing	Session B1: Cokemaking	Session C1: Blast Furnace Ironmaking-Process and Operation	Session D1: Hydrogen (H_2)-based Ironmaking
Aug. 27 Afternoon	Session A2: Sintering and Pelletizing	Session B2: Cokemaking Session B2: Blast Furnace Ironmaking-Maintenance and Campaign Life	Session C2: Blast Furnace Ironmaking-Process and Operation	Session D2: Hydrogen (H_2)-based Ironmaking
Aug. 28 Morning	Session A3: Automation and Digitalization	Session B3: Blast Furnace Ironmaking-Maintenance and Campaign Life	Session C3: Blast Furnace Ironmaking-Production and Operation Session C3: Direct Reduction and Smelting Reduction	Session D3: Hydrogen (H_2)-based Ironmaking
Aug. 28 Afternoon	Session A4: CO_2 Reduction and Energy Saving	Session B4: CO_2 Reduction and Energy Saving	Session C4: Direct Reduction and Smelting Reduction	Session D4: Hydrogen (H_2)-based Ironmaking
	Session A4: Graduate Student Presentation	Session B4: Graduate Student Presentation	Session C4: Graduate Student Presentation	Session D4: Graduate Student Presentation
August 26-28	**Poster Sessions**			

Plenary Session P1

Tuesday, 26 August 2025, GMT+8 (Beijing) 8:30-11:55		Speaker
8:30-8:50	Opening Address	
8:45-9:20	**Innovation and Advances in the preparation of ironmaking burdens in China** **Tao Jiang** Central South University, China	Tao Jiang 姜涛
9:20-9:55	**Japanese Steel Industry's Challenge toward Carbon Neutral Steelmaking** **Yutaka Ujisawa** Nippon Steel Corporation, Japan	Yutaka Ujisawa
9:55-10:30	**Progress and Innovations in the Chinese Ironmaking Industry** **Jianliang Zhang** University of Science and Technology Beijing, China	Jianliang Zhang 张建良
10:30-10:45 Tea Break		
10:45-11:20	**Update on the development of POSCO's hydrogen-based Ironmaking process, HyREX®** **Myoung Gyun Shin** POSCO, Korea	Myoung Gyun Shin
11:20-11:55	**Practice and Prospect of Carbon Reduction in Shougang Long Process Steel Production** **Gele Qing** Shougang Group, China	Gele Qing 青格勒

Plenary Session P2

Tuesday, 26 August 2025, GMT+8 (Beijing) 14:00-17:10		Speaker
14:00-14:35	**The Green Transition of the steel industry in Sweden – state of the art** **Pontus Sjöberg** Swerim AB, Sweden	Pontus Sjöberg
14:35-15:10	**Exploration of Green and Intelligent Technologies in Ironmaking at Baosteel** **Daihua Zhang** China BaoWu Steel Group Corporation Limited, China	Daihua Zhang 张代华

15:10-15:45	**Innovation and Technological Transformation in Ironmaking at ArcelorMittal** **Dennis D. Lu** ArcelorMittal Global RDEC & RDSF, United States	**Dennis D. Lu**
15:45-16:00 Tea Break		
16:00-16:35	**Blast Furnace Modelling and Application: How to Optimise Design and Control for Best Energy Efficiency** **Aibing Yu** JITRI Institute for Process Modelling and Control, China Great Bay University, China	**Aibing Yu** 余艾冰
16:35-17:10	**Reimagining Ironmaking through Blast Furnace in the coming years** **S. S. Mohanty** Essar Minmet Limited, India	**S. S. Mohanty**

Session A1-Sintering and Pelletizing

Wednesday, 27 August 2025, GMT+8 (Beijing) 8:30-12:05 Room A		Speaker
8:30-8:55	Keynote ***Sinter Return, Sintering Performance and Decarbonisation*** ***Liming Lu1, Tim Evans2, Kenta Takahara3*** *1. CSIRO Mineral Resources, Brisbane, Australia;* *2. Rio Tinto Technological Resources, Perth, Australia;* *3. JFE Steel Research Centre, Fukuyama, Japan*	Liming Lu
8:55-9:20	Keynote ***Advanced Agglomeration Technology for Low-carbon Ironmaking in China*** ***Rui Deng1,2, Deqing Zhu 1, Ziluo Chen2*** *1. School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, Hunan, China;* *2. Sinosteel Equipment and Engineering Co., Ltd., Beijing 100080, China)*	Deqing Zhu 朱德庆
9:20-9:40	***Development of iron ore agglomeration process for low-carbon ironmaking*** ***SangHan Son, Minkyu Wang 1, Byungjun Chung1*** ***1. POSCO Ironmaking Research Group , Pohang, South Korea***	SangHan Son
9:40-10:00	***Research on the Preparation Techniques for Flux Pellets of Chromium-Bearing Vanadium Titanomagnetite*** ***Xiangbiao Yu1,2,3,4;Tianyuan Li1,4; Gongjin Cheng1,2,3,4;Xiangxin Xue1,2,3,4,* ;He Yang1,4*** *1.School of Metallurgy, Northeastern University, Shenyang 110819, PR China* *2.Liaoning Key Laboratory of Recycling Science for Metallurgical Resources, Shenyang 110819, PR China* *3.Northeastern University Innovation Research Institute of Vanadium and Titanium Resource Industry Technology, Shenyang 110819, PR China* *4.Innovation Research Institute of Comprehensive Utilization Technology for Vanadium-Titanium Magnetite Resources in Liaoxi District , Chaoyang 122000, PR China*	Xiangbiao Yu 喻相标
10:00-10:20	**Effect of FeCr2O4 on the Formation and Mechanical Properties of Calcium Ferrite** ***Ju Xu1,2,3, Guojun Ma1,2,3,*, Mengke Liu1,2,3, Xiang Zhang1,2,3, Dingli Zheng1,2,3, Yunjie Li1,2,3*** 1. Key Laboratory for Ferrous Metallurgy and Resources Utilization of Ministry of Education, Wuhan University of Science and Technology, Wuhan 430081, China; 2. Hubei Provincial Key Laboratory for New Processes of Ironmaking and Steelmaking, Wuhan University of Science and Technology, Wuhan 430081, China; 3. Hubei Provincial Engineering Technology Research Center of Metallurgical Secondary Resources, Wuhan University of Science and Technology, Wuhan 430081, China.	Ju Xu 徐菊
10:20-10:35 Tea Break		

10:35-11:00	Keynote ***Progressive increase of BRBF+IOCJ in the iron ore mixture: effects on sintering performance and sinter pores microstructure investigated by XCT*** ***Alei Domingues1, Marcus Emrich1, Wei Wang2, Qingshi Song2, Hao Zhou 3*** *1. Ferrous Technology Center (CTF), VALE S.A., Alameda Oscar Niemeyer 132, Vale do Sereno, Nova Lima MG Brasil;* *2. VALE Metals (Shanghai) Co., Ltd., 52F BM Intercontinental Business center, 100 Yu Tong Road, Shanghai, China* *3. Institute of Thermal Energy Engineering, Zhejiang university, 38 Zheda Road, Hangzhou, China*	Alei Domingues
11:00-11:25	Keynote ***DEM Simulation of Iron Ore Mixing Behavior in Compound Driven High Shear Mixer*** ***Dongcai Luo1, Renhao Tian1, Yang You1*, Xuewei Lv1*** *1. College of Materials Science and Engineering, Chongqing University, Chongqing 400044, China*	Xuewei Lv 吕学伟
11:25-11:50	Keynote ***Experimental study on roasting of carbon-containing iron ore pellets with externally added waste wood in rotary kiln*** ***Chuan Wang1,2, Junyi Wu3, Andrey Karasev2, Xiaojun Ning3, Guangwei Wang3*** *1 Swerim AB, Process Metallurgy, 97125, Luleå, Sweden* *2 Material Science and Engineering, KTH Royal Institute of Technology, SE-100 44 Stockholm, Sweden* *3 School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China*	Chuan Wang
11:50-12:10	***Study on low silicon sintering production in Ansteel Group*** ***Jie Liu1,2, Libing Xu1,2, Qiang Zhong3,*, Simin Xiang3, Hui Zhang1,2, Xun Jin1,2*** *1.Iron and Steel Research Institute of Angang Group, Anshan 114009, Liaoning;* *2.State Key Laboratory of Metal Material for Marine Equipment and Application, Anshan 114009, Liaoning;* *3. School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, Hunan*	Jie Liu 刘杰

Session A2-Sintering and Pelletizing

Wednesday, 27 August 2025, GMT+8 (Beijing) 13:30-17:15 Room A		**Speaker**
13:30-13:55	Keynote ***Progress of Shougang Pelletizing Technology and Its Application in Low-Carbon Metallurgy*** ***Weidong Zhang1, Yunqing Tian2,*, Gele Qing2, Jinglin Song2, Li Zhu2 Li Ma2*** *1. Shougang Group Co., Ltd., Beijing, 100043, China;2. Research Institute of Technology, Shougang Group Co., Ltd., Beijing, 100043, China*	Weidong Zhang, Yunqing Tian 张卫东，田筠清
13:55-14:20	Keynote ***Fluxed pellet laboratory research and industrial application in Ansteel*** ***Ming shun Zhou1,2, En jian Hou3,Guang Yang3,Rui Deng4 ,Ziluo Chen4,Wei Ren1,2, Xian Chun LI5,Li ming Lu6*** *1.State Key Laboratory of Metallic Material for Marine Equipment and Applications,*	Mingshun Zhou 周明顺

	Anshan 114009,Liaoning,China; *2.Iron and Steel Research Institute of Angang Group,Anshan 114009, Liaoning,China;* *3.Anshan Iron & Steel Group Co. LTD;* *3.Anshan Iron & Steel Group Co. LTD. Donganshan Sintering plant, Anshan114006 ,Liaoning ,China;* *4.Sinosteel Equipment and Engineering Co., Ltd., Beijing 100080, China;* *5.School of Chemical Engineering, University of Science and Technology Liaoning, Anshan 114051, Liaoning, China;* *6.CSIRO Mineral Resources, 1 Technology Court, Pullenvale, QLD 4069, Australia*	
14:20-14:40	***Review and outlook on the progress of Shougang's sintering technology in recent years*** ***Yapeng Zhang1,2, Wen Pan1,2, Zhixing Zhao1,2, Huaiying Ma1,2, Dongqing Wang1,2, Jingjun Zhao3, Shuhai Ou4, Yongjun Liu3, Wang Zhu4, Peicheng Gao4*** *1.Shougang Group Co., LTD Research Institute of Technology, Beijing 100043, P. R. China;* *2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, Beijing 100043, P. R. China;* *3. Shougang Jingtang United Iron &Steel Co., Ltd, Tangshan 063200, P. R. China.* *4. Shougang Qian'an Iron and Steel Company, Tangshan 063200, P. R. China.*	Yapeng Zhang 张亚鹏
14:40-15:00	***Metallurgical Properties of High-Titanium-Vanadium Magnetite Concentrate for Gas-Based Shaft Furnace*** ***Yixi Zhang1,Shuai Wang1,Feng Chen1,Mao Chen2, 3,Lingzhi Yang1,Yufeng Guo1*， Tao Jiang1*** *1. School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, Hunan, China;* *2.Pangang Group Research Institute Co., Ltd, Panzhihua 617000, Sichuan, China;* *3. State Key Laboratory of Comprehensive Utilization of Vanadium and Titanium Resources, Panzhihua 617000, Sichuan, China*	Shuai Wang 王帅
15:00-15:20	***An Investigation on Deep-Bed Sintering with Hydrogen-Rich Gas Injection: Synergistic Roles of Steam and Oxygen-Enriched Conditions*** ***Rui Wang1,2, Junjie Zeng1,2, Chao Fang1,2, Wangping Wu1,2, YuXiao Xue1,2, Xuewei Lv1,2*, Jian Xu1,2*** *1. College of Materials Science and Engineering, Chongqing University, Chongqing, 400044, China.;* *2. Chongqing Key Laboratory of Vanadium–Titanium Metallurgy and New Materials, Chongqing University, Chongqing 400044, China*	Rui Wang 王锐
15:20-15:35 Tea Break		
15:35-16:00	Keynote ***Development and Application of Cascaded Utilization of Low and Medium Temperature Flue Gas in Circular Cooler*** ***Wen Pan1,2, Zhixing Zhao1,2, Yapeng Zhang1,2, Jianwei Yin3, Yangsheng Song3*** *(1. Research Institute of Iron & Steel, Shougang Group Co., LTD Research Institute of Technology, Beijing 100043, P. R. China; 2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, Beijing 100043, P. R. China; 3. Rio Tinto Group, Level 23, 152 St Georges Terrace, Perth, WA 6000, Australia)*	Wen Pan 潘文

16:00-16:25	Keynote ***Numerical Analysis of Hydrogen Injection in Fuel Layer Distribution Sintering Process*** ***Xiaobo Yang1,2, Jinhu Zhang1,2, Jin Xu1,2, Sida Liu1,2, Zongyan Zhou1,2,**** *1. Jiangxi Provincial Key Laboratory of Particle Technology, Jiangxi University of Science and Technology, Nanchang, 330013* *2. Center for Intelligent Research on Mining and Metallurgical Processes, International Innovation Institute, Jiangxi University of Science and Technology, Nanchang, 330013*	Zongyan Zhou 周宗彦
16:25-16:45	***Understanding the metallurgical performance of cold-agglomerated pellets in blast furnace conditions*** ***Matthew Bennett, Richard Joyce, Peter Warren*** *Binding Solutions Limited, Cyan Building, MPI, Eston Road, Middlesbrough, TS6 6US, United Kingdom*	Matthew Bennett
16:45-17:05	***Softening and melting properties of vanadium titanomagnetite burden for increasing TiO2 content in slag*** ***Kaihui Ma1, Lingling Liu1, Peng Hu1, Wenbo Tang1, Linhe Tao2, Xiaoliang Jia2, Shuxing Qiu1, Mao Chen1**** *1. State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization, Pangang Group Research Institute Co., Ltd., Chengdu 610031, Sichuan, China* *2. Pangang Group Xichang Steel&Vanadium Co., Ltd., Xichang 615000, Sichuan, China*	Kaihui Ma 马凯辉
17:05-17:25	***Effect of the amount of magnetic concentrate addition on the sintering process*** ***Huaiying Ma1,2 , Jianfeng Zhou3 , Xiaolei Li3 , Peicheng Gao3 , Wen Pan1,2 , Yapeng Zhang1,2*** *(1. Research Institute of Technology, Shougang Group Corporation* *2. Beijing key Lab of Green Recyclable Process for Iron & steel Production Tech* *3. Beijing Shougang Co., Ltd)*	Huaiying Ma 马怀营

Session A3-Automation and Digitalization

Thursday, 28 August 2025, GMT+8 (Beijing) **8:30-11:45 Room A**		**Speaker**
8:30-8:55	Keynote ***Online calculation and monitoring system of blast furnace operation furnace profile based on data and mechanism dual drive*** ***Zhen Zhang1, Jue Tang1,2 *, Quan Shi1, Mansheng Chu1,3*** *1. School of Metallurgy, Northeastern University, Shenyang, 110819, Liaoning, China;* *2. Engineering Research Center of Frontier Technologies for Low-Carbon Steelmaking (Ministry of Education), Shenyang, 110819, Liaoning, China;* *3. Liaoning Low-Carbon Steelmaking Technology Engineering Research Center, Northeastern University, Shenyang, 110819, Liaoning, China*	Mansheng Chu 储满生

8:55-9:20	Keynote ***Application and Practice of CISDI Integrated Intelligent Ore blending Technology*** ***Gang Wang1, Muming Li1, Maocheng He1, Feifei Lai1, Zhibin Hong1, Xuewen Xiao1*** *1. CISDI Engineering Co. Ltd., Chongqing 401122*	Gang Wang 王刚
9:20-9:40	***Integrating Mechanistic Modeling with Attention-Enhanced GRU Networks to Predict Molten Iron and Slag Quality Indices of Blast Furnaces*** ***Guanwei Zhou1, Henrik Saxén1*** *1. Process and Systems Engineering Lab, Åbo Akademi University, 20500 Turku, Finland*	Guanwei Zhou 周冠伟
9:40-10:00	***Practice and Consideration on Intelligent Construction of Angang Coking Production Line*** ***Chao Wang1,2, Feng Zhao3, Haidan Wang4, Xiushi Gan1,2, Fuxin Li1,2, Daichao Hu1,2*** *1.State Key Laboratory of Metal Material for Marine Equipment and Application, Anshan 114009, Liaoning, China; 2. Ansteel Iron & Steel Research Institutes, Anshan 114009, Liaoning, China;* *3. General Coking Plant of Angang Steel Co., Ltd., Anshan 114021, Liaoning, China;* *4. Angang Steel Co., Ltd., Anshan 114021, Liaoning, China*	Chao Wang 王超
10:00-10:20	***Development and application of digital twin model for blast furnace tuyere based on online CFD simulation*** ***Wenxuan Xu1,3, Fuming Zhang2,3, Gele Qing1,3, Yanglong Li1,3, Jianlong Wu1,3*** *1.Research Institute of Technology, Shougang Group Co., Ltd., No. 69, Yangzhuang Road, Shijingshan District, Beijing, 100043, P. R. China;* *2. Chief Engineering Office, Shougang Group Co., Ltd., No. 69, Yangzhuang Road, Shijingshan District, Beijing, 100043, P. R. China;* *3. Beijing Key Laboratory of Green Recyclable Process for Iron and Steel Production Technology, No. 69, Yangzhuang Road, Shijingshan District, Beijing, 100043, P.R. China*	Wenxuan Xu 徐文轩
10:20-10:35 Tea Break		
10:35-11:00	Keynote ***Prediction of blast furnace gas utilization rate based on data governance and intelligent driving*** ***Lei Fang1, Yonghui Liu1, Jue Tang2,3,*, Zhifeng Zhang2, Mansheng Chu2,3*** *1. Nanjing Iron and Steel Group Co., Ltd., Nanjing, 211800, Jiangsu, China;* *2. School of Metallurgy, Northeastern University, Shenyang, 110819, Liaoning, China;* *3. Engineering Research Center of Advanced Technology of Low Carbon Steel, Ministry of Education, Shenyang, 110819, Liaoning, China*	Lei Fang 方磊
11:00-11:25	Keynote ***Intelligent Diagnosis and Analysis of Taphole Status Based on Intelligent Sensing of Opening Depth and Mud - injection Quantity Information*** ***Yang Zhang1, Hongwei Guo1, Dong Chen1, Bingji Yan1, Helan Liang1, Hao Xu1*** *1. Shagang School of Iron and Steel Technology, Soochow University, Suzhou 215021, Jiangsu, China*	Hongwei Guo 国宏伟

11:25-11:45	***Modeling and Estimation of Operational Time Delay for Hearth Thermal Response in Blast Furnace Ironmaking*** ***Zenghao Liu1,2, Jiansheng He3, Qingyun Huang3, Xuewei Lv1,2*** *1. State Key Laboratory of Mechanical Transmissions, Chongqing University, No. 174 Shazheng Street, Shapingba District, Chongqing 400044, China* *2. College of Materials Science and Engineering, Chongqing University, No. 174 Shazheng Street, Shapingba District, Chongqing 400044, China* *3. School of Metallurgy and Materials Engineering, Chongqing University of Science and Technology, No. 20 University Town East Road, Shapingba District, Chongqing 401331, China*	Zenghao Liu 刘增昊
11:45-12:05	**The Role of Artificial Intelligence in Transforming Ironmaking: A Systematic Review and Adoption Strategies of Digital Evolution** ***Hanwen Zhang1*** *1. Sinosteel Equipment & Engineering Co., Ltd., Beijing 110080, Beijing, China*	Hanwen Zhang

Session A4 - CO_2 Reduction and Energy Saving + Graduate Student Presentation

Thursday, 28 August 2025, GMT+8 (Beijing) 13:30-17:10 Room A		**Speaker**
13:30-13:55	*Keynote* ***Enhancing Ironmaking Performance and Reducing Emissions through Tecnored Briquetting Technologies*** ***Anderson Agra1, Christian Manera2, Manoel Vitor Borel Gonçalves1, Clarissa Figueiró1, Lucas Fialho3, Guilherme Gonçalves4, Ronald Oliveira5, Stephen Potter6*** *1. R&D Expert, Tecnored SA, Brazil;* *2. R&D Analyst, Tecnored SA, Brazil;* *3. Process Coordinator, Tecnored SA, Brazil;* *4. R&D Manager, Tecnored SA, Brazil;* *5. COO, Tecnored SA, Brazil;* *6. CEO, Tecnored SA, Brazil*	Anderson Agra
13:55-14:20	*Keynote* **Novel Processes and Techniques for Pollution Reduction and Carbon Emission Mitigation in Iron Ore Sintering** ***Zhiyun Ji1, Xiaohui Fan1*** 1. School of Minerals Processing & Bioengineering, Central South University, China	Zhiyun Ji 季志云
14:20-14:40	***Co-production of steel and chemicals to benefit both sectors' carbon emissions*** ***Yunling Cao1*, Yankui Li1, Dongfang Tian1, Yu Tan1*** *1. Beijing Peking University Pioneer Technology Corporation Ltd., Beijing 100088 , China;*	Yunling Cao 曹允玲

14:40-15:00	***Preparation and flame retardant mechanism of steel slag based flame retardant film*** ***Junxiang Guo1, 2*, Jianlong Wu1, 2, Mingyuan Gu1, 2, Youhao Yin1, 2, Jirigele Qinggele1, 2, Tongbin Wang3*** *1. Shougang Group Research Institute of Technology, Beijing, 100043, China; 2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, Beijing, 100043, China; 3. Shougang Jingtang Linited Iron & Steel Co., LTD, Tangshan HeBei, 063205, China*	Junxiang Guo 郭俊祥
15:00-15:20	**Technical Research on Slag -based Mineralisation and Co-production of High-purity Mineral Materials** ***Zengqing Sun1*** 1. School of Minerals Processing & Bioengineering, Central South University, China	Zengqing Sun 孙增青
15:20-15:35 Tea Break		
15:35-15:55	***Carburization kinetics of the Fe by CO – H_2 Gas Mixture at 1073K*** ***Dahan Jo1, Youngjae Kim1, Hyuk Kim2*** *1. Department of Material Science & Engineering, Inha University, Michuhol-gu, Incheon, Korea 22212* *2. R&D strategy planning group, Hyundai steel, Songak-Eup, Dangjin, Korea 31719*	Dahan Jo
15:55-16:15	***Induction Heating-Assisted Hydrogen Direct Reduction: Kinetic Analysis and Process Energy Evaluation*** ***Zeng Liang1, Kejiang Li1, *, Jianliang Zhang1, Alberto N. Conejo1*** *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, P.R. China*	Zeng Liang 梁曾
16:15-16:35	***Effect of MgO, FeO and basicity on dissolution kinetic of CaO in blast furnace slag systems*** ***Jasung Lee1*, Sunghee Lee2, Youngjae Kim1*** *1. Department of Material Science & Engineering, Inha University, Michuhol-gu, Incheon, Korea, 22201* *2. Low Carbon Iron and Steel Making R&D Center, POSCO, Pohang, Korea, 37859*	Jasung Lee
16:35-16:55	***An XGBoost-Based Model for Temperature Prediction in Rotary Hearth Furnaces: Incorporating Mechanistic and Temporal Factors*** ***Qingxuan Luo 1, Shenglong Jiang 2, Yang You1, Zhixiong You1, Yuanling Zhang3*** *1. College of material science and engineering, Chongqing University, Chongqing, 400044* *2. School of automation, Chongqing University, Chongqing, 400044* *3. Baowu Group Environmental Resources Technology Co., Ltd., Shanghai, 201900*	Qingxuan Luo 罗庆暄
16:55-17:15	***A novel technology of co-injecting hydrogen and biomass (CoHB) in blast furnaces for a sustainable carbon-neutral ironmaking*** ***Ming Jiang Gan, Yiran Liu and Yansong Shen**** *School of Chemical Engineering, University of New South Wales, Sydney, NSW 2052, Australia*	Ming Jiang Gan
17:15-17:35	***Study of mass flow and carbon reduction potential in low-carbon blast furnace with biomass -CO2 syngas injection*** ***Jianliang Zhang, Lian Ye, Runsheng Xu**** *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, 100083, China*	**Lian Ye** 叶涟

Session B1- Cokemaking

Wednesday, 27 August 2025, GMT+8 (Beijing) 8:30-12:05 Room B		Speaker
8:30-8:55	Keynote ***Development of High Strength Coke from Non-or-slightly Caking Coal by Pulverization and Compaction*** ***Sara Arakawa 1,*, Takashi Matsui2, Yusuke Dohi2, Tetsuya Yamamoto2*** *1. JFE Steel Corp., 1,Kawasaki-cho, Chuo-ku, Chiba, Japan;* *2. JFE Steel Corp., 1, Kokan-cho, Fukuyama, Hiroshima, Japan*	***Sara Arakawa***
8:55-9:20	Keynote **Effect of coke quality on tuyere coke of 5500m3 blast furnace** **Dongtao Li1,2*, Yang Liu1,2, Xin Dai1,2, Deying Guo1,2，Weichun Zhu1,2** 1.Shougang Research institute of technology, Beijing 100043,China; 2. Beijing Key Laboratory of Green Recyclable Process for Iron and Steel Production Technology, Beijing 100043, China	**Dongtao Li** **李东涛**
9:20-9:45	Keynote **Multi-scale characterization of coal macerals in pyrolysis process** **Shengfu Zhang 1,2*, Yucen Kuang 1,2, Chenguang Bai 1,2** 1. College of Materials Science & Engineering, Chongqing University, Chongqing 400044, China; 2. Chongqing Key Laboratory of Vanadium-Titanium Metallurgy & Advanced Materials, Chongqing University, Chongqing 400044, China	**Shengfu Zhang** **张生富**
9:45-10:05	**Reaction mechanism of coke loss in coke dry quenching system** **Rongguang Xu1,2 *, Yuanbo Song3, Wenbin Wang3, Shaokui Guan4, Hailong Huang4** **1. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, Beijing 100043, China;** **2. Research Institute of Technology, Shougang Group Co., Ltd., Beijing 100043, China;** **3. Tangshan Shougang Jingtang Xishan Coking Co., Ltd., Tangshan 063200, Hebei, China;** **4. Qian'an Zhonghua Coal Chemical Co., Ltd., Qian'an 064404, Hebei, China**	**Rongguang Xu** **徐荣广**
10:05-10:25	**Prediction model of coke quality based on coal-forming factors** **Yue Wang 1,*, Keliang Pang 1, Wei Xia 2, Haotian Wu 1, Zhiyuan Gu 1, Hua Zhao 3** 1. Ansteel Beijing Research Institute Co. LTD, Beijing 102200, China； 2. Bayuquan Branch of Angang Steel Co., Ltd., Yingkou 115007, Liaoning, China; 3. Ansteel Iron & Steel Research Institutes, Anshan 114009, Liaoning, China 3.Ansteel Iron & Steel Research Institutes, Anshan 114009, Liaoning, China	**Yue Wang** **王越**
10:25-10:40 Tea Break		

10:40-11:05	*Keynote* ***Reactivity and degradation mechanism of coke in simulated H2 blast furnace reaction conditions*** ***Behnaz Rahmatmand1, Salman Khoshk Rish1, Hannah Lomas1, Lauren North2, Arash Tahmasebi1,**** *1. BHP Centre for Sustainable Steelmaking Research, Newcastle Institute for Energy and Resources (NIER), University of Newcastle, Callaghan, NSW 2308, Australia;* *2. BHP, Brisbane, QLD 4000, Australia*	***Arash Tahmasebi***
11:05-11:30	*Keynote* **Key Structural and Property Differences Between Stamping-Charged and Top-Charged Coke** **Kejiang Li 1,*, Feng Zhou 1, Jianliang Zhang1,2** 1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, P.R. China; 2. School of Chemical Engineering, The University of Queensland, St Lucia, QLD 4072, Australia.	**Kejiang Li** **李克江**
11:30-11:50	**Analysis and Consideration on Quality and Efficiency Optimization of CDQ Based on Full Lifecycle Management** **Xiushi Gan1,2*, Jian Wang3, ,Haidan Wang4, Chao Wang1,2, Shibin Hou3, Daichao Hu1,2** **1. Electro-Mechanics & Materials College, Dalian Maritime University, Dalian 116026, Liaoning, China;** **2. Research Centre on Tools, Materials and Processes, 81013 Albi CT cedex 09, France**	**Xiushi Gan** 甘秀石
11:50-12:10	**The Development Direction of Chinese Coking Industry Under the New Situation** **Lie Xu1, Jian Kang2, *** **1. Huatai Yongchuang (Beijing) Tech. Co., Ltd., Beijing 101111, China;** **2. Anshan Huatai Environmental Energy Engineering Technology Co., Ltd., Anshan 114001, Liao Ning, China**	**Jian Kang** **康健**

Session B2- Cokemaking + Blast Furnace Ironmaking- Maintenance and Campaign Life

Wednesday, 27 August 2025, GMT+8 (Beijing) **13:30-17:05 Room B**		**Speaker**
13:30-13:55	**Keynote Quantifying biochar interactions with coal for coke making** **Lauren Williamson1*, Richard Sakurovs1 & Aedita Crouch1** **1.CSIRO Mineral Resources, Queensland Centre for Advanced Technologies, Brisbane; QLD 4069 Australia**	**Lauren Williamson**
13:55-14:20	***Keynote*** **Quantitative Analysis and Optimisation of Coke Microstructure** **Edward Bissaker1,*, David Jenkins1, Arash Tahmesebi1, Bishnu Lamichhane2, Merrick Mahoney1** 1. BHP Centre for Sustainable Steelmaking, The University of Newcastle, Australia	**Edward Bissaker**

	2. School of Information and Physical Sciences, The University of Newcastle, Australia	
14:20-14:40	**Research and Application of Repairing Technology of Large Blast Furnace Hearth Lining** **Fuming1 Zhang ,*, Guoli Jia2, Yong Zhang 3, Manxiang Zhao2, Kexin Jiao4** 1. Shougang Group Co., Ltd. Beijing 100041; 2. Beijing Shougang Co., ltd, Hebei Qian'an 064400; 3. Research Institute of Technology of Shougang Group Co., Ltd., Beijing 100041; 4. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083	**Manxiang Zhao** **赵满祥**
14:40-15:00	**Coal coking correlation performance and coal blending coking** **Qi Wang1,*, Wenlin Xue2, Huan Cheng3, Wenjia Hu3, Weibo Tie1, Pei Wang1** **1.College of Materials and Metallurgy, University of Science and Technology Liaoning, Liaoning Anshan 114051, China** **2.Today Think Tank Energy Limited, Shanxi Taiyuan 030024, China** **3.College of Chemical Engineering, North China University of Science and Technology, Hebei Tangshan 063210, China**	**Weibo Tie** **铁维博**
15:00-15:20	**Properly optimizing the 1/3 coke coal ratio is the key to achieving economic and efficient coke production** **Luying Xiao1, 2, Qingbin Yang3, Huan Cheng 4*, Fei Liao4, Yinghua Liang4, Yuting Hao4** 1. College of Metallurgy and Energy, North China University of Science and Technology, Tangshan 063210, Hebei, China; 2. College of Science, North China University of Science and Technology, Tangshan 063210, Hebei, China; 3. Hebei Coal & Coking Technology Innovation Center, Tangshan Shougang Jingtang Xishan Coking Co., Ltd., Tangshan 063200, Hebei, China; 4. College of Chemical Engineering, North China University of Science and Technology, Tangshan 063210, Hebei, China	**Huan Cheng** **程欢**
10:25-10:40 Tea Break		
15:35-16:00	***Keynote*** **Analysis of Solid Flow and Stress Field in Hydrogen-Enriched Blast Furnace Operation** **Dereje Degefa Geleta1, Joonho Lee1*** 1. Department of Materials Science and Engineering, Korea University, 145 Anam-ro, Seongbuk-gu, Seoul 02841, Korea	**Dereje Degefa Geleta**
16:00-16:25	***Keynote*** **Theory and key technology for hearth self-repair of blast furnace** **Guangxiang Feng, Yanbing Zong, Xiaoyue Fan, Kexin Jiao*** School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing, 100083, China	**Kexin Jiao** **焦克新**
16:25-16:45	**Blast Furnace Longevity and Low-Carbon Energy-Saving Technology**	**Zhifeng Hao** **郝志峰**

	Zhifeng Hao1 1.Baotou Andexinai New Material Co., Ltd.	
16:45-17:05	**Improvement of production index of Baosteel No. 4 BF after mid-term maintenance** **Yulong Song 1** **1.Ironmaking Plant, Baoshan Iron & Steel Co., Ltd.**	**Yulong Song** **宋玉龙**
17:05-17:25	**Investigation of the damaged hot blast furnace shell in 5500m3 blast furnace** **Jian Sun1*,3, Fuming Zhang2, Kai Wang2, Yong Zhang1,3, Jianlong Wu1,3, Wei Wang1,3** 1. Research Institute of Technology, Shougang Group Co.，Ltd., Beijing 100043, China； 2. Shougang Group Co.，Ltd., Beijing 100043, China；3. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology，Beijing 100043，China	**Jian Sun** **孙健**

Session B3 - Blast Furnace Ironmaking-Maintenance and Campaign Life

Thursday, 28 August 2025, GMT+8 (Beijing) **8:30-12:10 Room B**		**Speaker**
8:30-8:55	***keynote*** **Mechanical properties and reduction behavior of self-reducing briquettes with biomass treated in different temperatures** **Paula Maria Gomes Cunha Leão1*, Taís Birchal Zicker1, Nícolas Henrique Alves Ferreira1, Augusta Cerceau Isaac Neta1, José Domingos Ardisson2, Maurício Covcevich Bagatini1** 1. Laboratory of Ironmaking Processes, Department of Metallurgical and Materials Engineering, Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil; 2. Laboratory of Mössbauer Spectroscopy, Department of Nanotechnology, Nuclear Technology Development Center (CDTN/CNEN), Belo Horizonte, Brazi	**Maurício Covcevich Bagatini**
8:55-9:20	*Keynote* ***Typical Problems and Countermeasures Faced by the Application of Biomass in Blast Furnace Ironmaking*** ***Dalong Guo1, Kangzheng Meng2, Rufei Wei2, *, Hongming Long2*** *1. Beijing Beike Guowei Manufacturing Technology Co., Ltd, Beijing 100039, China;* *2. School of Metallurgical Engineering, Anhui University of Technology, Ma'anshan 243002, Anhui, China*	**Hongming Long, Rufei Wei** **龙红明，魏汝飞**
9:20-9:40	**TRIZ Innovation Method Helps Ironmaking Field to Solve Key Technical Problems** **Degang Wang, Hao Guo, Mingshan Geng, Yanbo Feng, Wenjie Wei, Yingjie Cao** Capital engineering & research incorporation Ltd., BEIJING 100176	**Degang Wang** **王得刚**

9:40-10:00	**The application of Carbon Composite Bricks in the blast furnace hearth and bottom** *Minghuan Li1,Yifei Wang2* 1. Gongyi Fifth Refractories Co. LTD. 2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China;	**Yifei Wang** **王漪霏**
10:00-10:20	***Development of mathematical optimization models of blast furnace system*** ***Yan Zhang1,2, Haiyan Zheng1,2, Zhen Wang1,2, Weiling Zhang2, Xin Jiang1,2, Qiangjian Gao1,2, Fengman Shen1,2*** *1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, No.3-11, Wenhua Road, Heping District, Shenyang, Liaoning, 110819, P. R. China* *2. School of Metallurgy, Northeastern University, No.3-11, Wenhua Road, Heping District, Shenyang, Liaoning, 110819, P. R. China*	**Yan Zhang** **张严**
10:20-10:35 Tea Break		
10:35-11:00	***keynote*** **Application of High-MgO Pellets as Blast Furnace Iron-containing Burden** **Leonardo Tomas da Rocha1, Seongkyu Cho1,3, Dohyeon Kim1, Hwanjae Kim2, Jung Ah Kim3, Sunghee Lee3, Sung-Mo Jung1*** 1. Graduate Institute of Ferrous & Eco Materials Technology (GIFT), POSTECH, South Korea; 2. POSCO Ironmaking Department, Pohang, South Korea; 3. POSCO Ironmaking Research Group - Technical Research Laboratories, Pohang, South Korea	**Leonardo Tomas da Rocha**
11:00-11:20	*Keynote* **Coal Blending and Coke Quality Characteristics in Top-charging, Stamp-Charging, and Heat Recovery Coke Ovens and Their Technical Measures for Blast Furnace Ironmaking** **Meng Qingbo1,2,*, Zhang Zhiyong2, Xu Xiuli1, Gao Lidong2, Jiang Yu1** 1. Sinosteel Anshan Research Institute of Thermo-Energy Co., Ltd. 2.Henan Iron and Steel Group Co., Ltd.）	**Qingbo Meng** **孟庆波**
11:20-11:40	**Research and Application of Intelligent Precast Linings for main trough of Blast Furnace** **Shengli Tong 1 , Peilin Li 1 , Zhanmin Wang2, Minghui Li 3 , Haining Jia4 , Bing Chang 1** 1. Jiangsu Baoyirui New Materials Co., Ltd. 2. Sinosteel Luonai Materials Technology Co., Ltd 3. Anhui University of Technology 4. Baosteel Zhanjiang Iron & Steel Co., Ltd.	**Peilin Li** **李佩霖**
11:40-12:00	**The Relationship Between Tuyere Materials and Blast Furnace Conditions** **Yuansheng Wang1,*, Qingxi Zhang2,Junfang Bao3,Huawei Zheng2,Zhao Song2,Chen Gong2** 1. R&D Center of Wuhan Iron&Steel Co., LTD., Baosteel Central Research Institute, Wuhan 430083, Hubei, China; 2. Iron Plant, Wuhan Iron &Steel Co., Ltd., Wuhan 430083, Hubei, China; 3.Research Institute of Baoshan Iron and Steel Co., Ltd.,Shanghai 201999, China.	**Yuansheng Wang** **王元生**

Session B4 - CO_2 Reduction and Energy Saving + Graduate Student Presentation

Thursday, 28 August 2025, GMT+8 (Beijing) 13:30-17:25 Room B		Speaker
13:30-13:55	Keynote ***Construction of the carbon-loop metallurgy technical route for iron&steel making process*** ***Hengdi Ye 1, Feng Yang 1*** 1.Zhongye Changtian International Engineering Co. Ltd., China	**Hengdi Ye, Feng Yang** **叶恒棣，杨峰**
13:55-14:20	Keynote ***Resource utilization of steel slag of Sha Steel based on carbon sequestration*** ***Zuoqiao Zhu1*, Junjie Ma1, Haiwei Yao1, Rui Mao2*** *1.Shagang Iron & Steel Research Institute of Jiangsu Province, China;* *2.Shagang Steel of Jiangsu Province, China*	**Zuoqiao Zhu** **朱祚峤**
14:20-14:40	**Study of alternative generation of energy in belt conveyors (chute) for iron ore** **Alfredo Sarkis1** 1. Mineral Development Center, VALE SA, Brasil	***Alfredo Sarkis***
14:40-15:00	**Different Options of Stove Modernization using Innovative Top Combustion Stove of Kalugin Design** ***Anton Subbotin1,*, Sergey Ivlev1,**, Boris Prokofyev1,***, Marina Kalugina1,****, Yury Murzin1,******* 1.KALUGIN JSC, Mira 33, Ekaterinburg 620078, Russia	Anton subbotin
15:00-15:20	**Application of Energy-saving Technical Standard of Oxygen-enriched Combustion in Iron-making** **Guanjun Chen 1 Maolin Sun2 Shiliang Chu3 Pengfei Ji3 Weibin Duan2** 1.SHOUGANG Research Institute of Technology,Beijing,100043; 2.Beijing Shougang Co., Ltd.,Hebei,064404; 3.Shougang Jingtang United Iron＆Steel Limited Corp.,Hebei,063200	**Guan jun Chen** **陈冠军**
15:20-15:35 Tea Break		
15:35-15:55	**How Hydrogen Injection Impacts Raceway Reacting Flow in An Ironmaking Blast Furnace: An Industrial-scale CFD-DEM Study** **Panxing Kang, Dan Xu, Yansong Shen*** 1.School of Chemical Engineering, University of New South Wales, Sydney, NSW 2052, Australia	**Panxing Kang**
15:55-16:15	**Recovering Na2B4O7 and Na2CO3 hydrates via CO2 Carbonation from Borate-Sodium-Rich Leachate** **Jing Wang, Shaoyang Chang, Boqi wang, Xinyue Wu, Jinliang Xiong, Mingjun Rao*** School of Minerals Processing & Bioengineering, Central South University, Changsha, Hunan 410083, China	**Jing Wang** **王静**

16:15-16:35	**Impact of Fuel Combustion Reactivity on CO Emissions and Combustion Efficiency in Sintering: A Numerical Simulation Study** **LI Zhen1, Liu Zhengjian1, Zhang Jianliang1, Wang Yaozu2, 3** 1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China; 2. School of Intelligence Science and Technology, University of Science and Technology Beijing, Beijing 100083, China; 3. Institute of Artificial Intelligence, University of Science and Technology Beijing, Beijing 100083, China	**Zhen Li** **李震**
16:35-16:55	**Progress of hydrogen based direct reduction process** **Qianqian Duan1, Guanghui Li1, Jun Luo2** **1. School of Minerals Processing & Bioengineering, Central South University, Changsha, Hunan 410083, China;** **2. College of Chemistry and Chemical Engineering, Central South University, Changsha, Hunan 410083, China**	**Qianqian Duan** **段倩倩**
16:55-17:15	***How Defect Evolution in Iron Oxides Modulates Iron Morphology*** ***Qinghui Wu1, Shuai Wang1, Jian Xu1**** *1. College of Materials Science and Engineering, Chongqing University, Chongqing 400044, China*	**Qinghui Wu** **武庆慧**
17:15-17:35	***Effect of air flow rates on CO emission in iron ore sintering process*** ***Zhen Liu1, Yushan Dai1, Zhengjian Liu2, Yaozu Wang3, Sida Li2*** *1. Sansteel Minguang Co., Ltd. Fujian,Fujian 365000, P. R. China;* *2.School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China;* *3. Institute of Artificial Intelligence, University of Science and Technology Beijing, Beijing 100083, China*	**Sida Li** **李思达**

Session C1- Blast Furnace Ironmaking-Process and Operation

Wednesday, 27 August 2025, GMT+8 (Beijing) **8:30-12:05 Room C**		**Speaker**
8:30-8:55	*Keynote* **A Method for Determining the Blast Furnace Minimum Coke Rate** **D. (Frank) Huang**, Marcelo Andrade, and Dave White ArcelorMittal USA Research LLC, 3001 East Columbus Drive, East Chicago IN USA	Frank Huang
8:55-9:20	*Keynote* ***Research and Application of Clean, High-Efficiency and High Blast Temperature*** ***Zhang Fuming****1,*, Fuchao Li2, Naiyao Li3, Jian Sun4, Guanpeng Li2, Kunbao Yin2* *1. Shougang Group Co., Ltd.; 2. Zhengzhou Annec Industrial Co., Ltd.; 3. Beijing Shougang International Engineering Technology Co., Ltd.; 4. Technical Research Institute of Shougang Group Co., Ltd.*	Fuming Zhang 张福明

9:20-9:40	**Spotlight on Na2O and K2O behaviour in blast furnace operation** **Maarten Geerdes1, Peter Warren2*** 1. Geerdes Advies, 1901AB 3B, Castricum, The Netherlands 2. Binding Solutions ltd, Middlesborough, TS6 6US UK	Maarten Geerdes
9:40-10:00	**Overview on the behavior of Sodium silicate compound in blast furnace process environment** **Marcus Botelho1, Fábio Silva1, Augusto de Sa1, Vinícius Oliveira1, Qingshi Song2, Honggang Wang2, Haibin Zuo3, Wenguo Liu3** 1. Ferrous technology Center (CTF), VALE S.A., Alameda Oscar Niemeyer 132, Vale do Sereno, Nova Lima MG Brasil; 2. VALE Metals Co., Ltd., 52F BM Intercontinental Business center, 100 Yu Tong Road, Shanghai, China 3. State Key Laboratory of Advanced Metallurgy, University of Science of Technology Beijing, Beijing, China	Vinícius Oliveira
10:00-10:20	**Development and application of high-performance molded carbon blocks for large blast furnace** **Tongsheng Wang1** 1. Wisdri Wupeng (Handan) New Lining Material Co.,Ltd., China	Tongsheng Wang 王同生
10:20-10:35 Tea Break		
10:35-11:00	*Keynote* **Blast furnace modelling and applications: review and outlook** ***Yansong Shen1*** *1.School of Chemical Engineering, University of New South Wales, Sydney, NSW 2052, Australia*	**Yansong Shen** 沈岩松
11:00-11:25	*Keynote* ***Theory and Practice of High Lump Ratio Operation in Blast Furnace*** ***Yangsheng Song 1 ****, Qi Wang2* *1. Technical Marketing and R&D, Iron Ore, Rio Tinto, Perth 6000, Western Australia, Australia;* *2. School of Materials and Metallurgy, University of Science and Technology Liaoning, Anshan 114051, Liaoning, China*	Yangsheng Song 宋阳升
11:25-11:45	**Influence of Harmful Elements on the Metallurgical Properties of V-Ti Burden for Blast Furnace** **Xiaosen Dong1,2,*, Kui Zheng1, Peng Hu1,2, Jian Xu2, Hongen Xie1** **1. State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization, Pangang Group Research Institute Co., Ltd., Panzhihua 617000, Sichuan, China;** **2. College of materials science and engineering, Chongqing University, Chongqing 400044, China**	Xiaosen Dong 董晓森
11:45-12:05	**Research and Application of Longevity Technology in High Heat Load Areas of Blast Furnace** **Yingjie Cao 1,*， Siqing Qi1， Chunlong Wang1,** 1.Capital Engineering & Research Incorporation Ltd	**Yingjie Cao** 曹英杰

Session C2 - Blast Furnace Ironmaking-Process and Operation

Wednesday, 27 August 2025, GMT+8 (Beijing) 13:30-17:25 Room C		Speaker
13:30-13:55	Keynote ***Towards lower coke rates in blast furnaces*** *Maarten Geerdes1, Ron Molenaar2 and* ***Dimas Andrade****3* *1. Geerdes Advies, 1901AB 3B, Castricum, The Netherlands* *2. Rolino, 1965AC 9, Heemskerk, The Netherlands* *3. Danieli-Corus, Velsen, 1951ME 10000, The Netherlands*	Dimas Andrade
13:55-14:20	Keynote **Shagang 5800 m3 blast furnace optimization with plate cooling system** **Ping Dul, Hongchao Weil, Ming Leil, Maarten Geerdes2, Dimas Andrade2** 1. Jiangsu Shagang Group, Jiangsu, China, 2. Danieli-Corus, Velsen, The Netherlands.	Ping Du 杜屏
14:20-14:45	Keynote **Consideration on Carbon Saturation R in Hot Metal of Blast Furnace** Xiaohan Xu1 1. Beijing Real Nonmetallic Materials Co. Ltd	Xiaohan Xu 徐潇晗
14:45-15:05	**Blast Furnace Pressure Variability: Cohesive Zone Effects and Gas Flow Dynamics** **Roberto Abreu1*, Dimas Andrade1 and Maarten Geerdes2** **1. Danieli-Corus, POBox 10.000, 1970CA IJmuiden, Netherlands;** **2. Geerdes Advies, 1901AB 3B, Castricum, The Netherlands**	Maarten Geerdes
15:05-15:25	**Study on the Metallurgical Performance Coupling of Coke and Ore and the Optimization of Comprehensive Raw Materials for Blast Furnace** **Xinyang Meng1,* , Keliang Pang1 , Fujun Liu2 , Minmin Sun1 , Youzhi Zheng1 , Zhiyuan Gu1 , Haotian Wu1 , Chaoran Wan1** 1.ANSTEEL BEIJING RESEARCH INSTITUTE CO., LTD, Beijing 116026, Beijing, China; 2.ANSTEEL IRON & STEEL RESEARCH INSTITUTE, Anshan 114009, Liaoning, China	Xinyang Meng
15:25-15:40 Tea Break		
15:40-16:05	Keynote ***Academic – industry cooperation in fundamental research on ironmaking for the Dutch steelmaking industry in the 21st century*** ***Yongxiang Yang1****, Neslihan Dogan1, Jan van der Stel2* *1. Department of Materials Science and Engineering, Delft University of Technology, 2628 CD Delft, The Netherland* *2. Research and Development, Tata Steel, 1970 CA IJmuiden, The Netherlands*	Yongxiang Yang

16:05-16:30	*Keynote* ***Qisunny Methodology：A Powerful Tool of Evaluating Ore-Coke Coupling Metallurgical Performance and Linking up with BF Process*** ***Qi Wang1, Yangsheng Song2, Tingle Li1, Tim Evans2*** *1. School of Materials and Metallurgy, University of Science and Technology Liaoning, Anshan 114051, Liaoning, China;* *2. Technical Marketing, Rio Tinto Iron Ore, Perth 6000 West Australia, Australia*	Qi Wang 汪琦
16:30-16:50	**Behavior of Iron Species During Reductive Soda-Ash Roasting of Bayan Obo Tailings** **Zhong Ai 1, Guanghui Li1, Mingjun Rao1*, Zhao Yang1,2, Guoying Yan2, Dan Wu2, Zhongshuai Jia2** 1. School of Minerals Processing & Bioengineering, Central South University, Changsha 410083, China; 2. Mining Research Institute of Baotou Steel (Group) corp., Baotou 014033, China	Zhong Ai 艾忠
16:50-17:10	***Raceway variation in low carbon emission blast furnace*** ***Mengmeng Ren*, Jieyun Ma, Wenwen Liu, Zheng Xue, Ruimeng Shi, Junxue Zhao*** ***School of Metallurgical Engineering, Xi'an University of Architecture and Technology, Xi'an 710055, China***	Mengmeng Ren 任萌萌
17:10-17:30	**Transient-state three-dimensional CFD modelling of an industrial-scale ironmaking blast furnace** **Jin Xie, Xiaobing Yu and Yansong Shen*** School of Chemical Engineering University of New South Wales, Sydney, 2052, NSW, Australia	**Jin Xie**

Session C3 - Blast Furnace Ironmaking-Production and Operation + Direct Reduction and Smelting Reduction

Thursday, 28 August 2025, GMT+8 (Beijing) 8:30-12:05 Room C		**Speaker**
8:30-8:55	*Keynote* ***Iron Ore-Petcoke Briquettes Development for Blast Furnace Application*** ***Beatriz Fausta Gandra1,*; Arthur Felipe Lino Oliveira1; Gerson Evaristo de Paula Junior1; Maurício Covcevich Bagatini2; Eduardo Osório3*** *1. Usinas Siderúrgicas de Minas Gerais S/A - Usiminas, Ironmaking Research and Development Team, Research and Development Center, Av. Pero Vaz de Caminha, 274, 35160-238, Ipatinga - MG, Brazil* *2. Federal University of Minas Gerais (UFMG), Laboratory of Ironmaking Processes, Department of Metallurgical and Materials Engineering, Av. Antônio Carlos, 6627, Escola de Engenharia, 31270-901, Belo Horizonte - MG, Brazil* *3. Federal University of Rio Grande do Sul (UFRGS), Iron and Steel Making Laboratory (Lasid/PPGE3M), PO Box 15021, 91501-970 Porto Alegre - RS, Brazil*	Beatriz Fausta Gandra

8:55-9:20	Keynote ***Prediction of Real-time Visualization of Cohesive Zone in Blast Furnace with Operation Parameters*** ***Yufei Huang 1, Kui Zheng 2, Weicong Tu 1, Zhehan Liao 1, Qinghui Wu 1, Fuchuan Zhang1,Jiating Rao 2, Cheng Pan 2, Jian Xu 1, **** *1. College of Materials Science and Engineering, Chongqing University, Chongqing 400044, P.R. China;* *2. Pangang Group Research Institute Co., Ltd., Panzhihua, Sichuan 617000, P.R. China*	Jian Xu 徐健
9:20-9:40	**Solutions for Blast Furnace Refractory Materials under High productivity** **Yang Xiao, Libing Jiang, Yu Liu, Liang Zhang, Chaodong Wang, Xiaowei Zhang** Dalian Comon Engineering Materials Co.,LTD, Dalian 116085, Liaoning, China	Yang Xiao 肖阳
9:40-10:00	**The Reaction Behavior and Mineral Phase Transformation of Coke in a Blast Furnace** **Ji Wu 1*, 2, Chunfeng Mu 3, Zejian Xiao 4, Xiushi Gan 1,2, Zhe Jiang 1, 2, Chao Wang 1,2** 1. State Key Laboratory of Metal Material for Marine Equipment and Application, Liaoning, Anshan 114021, China; 2. Ansteel Iron & Steel Research Institutes, Liaoning, Anshan 114021, China; 3. Coking Plant of Angang Steel Co., Ltd., Liaoning, Anshan 114021, China; 4. Manufacturing Management Department of Angang Steel Co., Ltd, Liaoning	Ji Wu 武吉
10:00-10:20	**Co-gasification characteristics of coke blended with hydro-char and pyro-char from bamboo** **Minmin Sun1**, * Keliang Pang1, Kejiang Li 2, Youzhi Zheng1, Xinyang Meng1, Jianliang Zhang2 1.Ansteel Beijing Research Institute Co., Ltd., Beijing 102209;2.School of Metallurgy and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083	Minmin Sun 孙敏敏
10:20-10:35 Tea Break		
10:35-11:00	Keynote **Electrical Conductivity Measurement Relevant to DRI Smelting Slags** Xuefan Zhou1, Zhiming Shi1, Ruwan Brell2, Sheng Chew2, Tim Evans1, **Xiaodong Ma1** 1. Julius Kruttschnitt Mineral Research Centre, Sustainable Minerals Institute, The University of Queensland, QLD 4068, Australia; 2. Future Technologies, BlueScope, Melbourne, Vic 3000, Australia	Xiaodong Ma
11:00-11:25	Keynote **Bottlenecks and solutions for gas-based direct reduction development in China** **Yonglong Jin** Institute of Strategy Research, HBIS	Yonglong Jin 金永龙

11:25-11:45	***Tecnored – A Sustainable Low-Carbon Technology for the Steelmaking Industry*** ***Manoel Vítor Borel Gonçalves1***, *Anderson Agra1, Clarissa Figueiró1, Christian Manera2, Lucas Fialho3, Guilherme Gonçalves4, Ronald Oliveira5, Stephen Potter6* *1. R&D Expert, Tecnored SA, Brazil;* *2. R&D Analyst, Tecnored SA, Brazil;* *3. Process Coordinator, Tecnored SA, Brazil;* *4. R&D Manager, Tecnored SA, Brazil;* *5. COO, Tecnored SA, Brazil;* *6. CEO, Tecnored SA, Brazil*	Manoel Vítor Borel Gonçalves
11:45-12:05	**Preparation of Ni, Cr, and Fe-bearing master alloy by smelting reduction a mixture of nickel laterite and chromite ore** Deyang Xiao, Yue Li, Yuxiao Xue, **Zhixiong You** College of Materials Science and Engineering, Chongqing University, Chongqing 400044, China	Zhixiong You 游志雄

Session C4 - Direct Reduction and Smelting Reduction + Graduate Student Presentation

Thursday, 28 August 2025, GMT+8 (Beijing) 13:30-17:25 Room C		**Speaker**
13:30-13:55	Keynote ***Computational study of a direct reduction furnace with hydrogen-rich feed gas*** ***Henrik Saxén1***, *Yandong Zhai1, Carl Haikarainen1, Marwa Mortadi1, Lei Shao2* *1. Process and Systems Engineering, Åbo Akademi University, 20500 Turku, Finland;* *2. School of Metallurgy, Northeastern University, Shenyang 110819, China*	Henrik Saxén
13:55-14:20	**Keynote Phase Transformations in the Reduction on Sillico-Ferrite of Calcium and Aluminum** Haiwei An1, Hao Guo1, **Xin Jiang**2, Yanbo Feng1, Degang Wang1, Fengman Shen2 1. Capital Engineering & Research Incorporation Limited, Beijing 102600, China; 2. Northeastern University, Shen Yang 110819, Liaoning China	Xin Jiang 姜鑫
14:20-14:40	**Assessment of Hydrogen and Pulverized Charcoal Injection as a Strategy for Partial Decarbonization in Large-Scale Blast Furnaces** **Giulio Antunes de Medeiros1,2,** Jose Adilson de Castro2 1. Companhia Siderúrgica Nacional (CSN), Volta Redonda 27269-900, Brazil; 2. Graduate Program on Metallurgical Engineering, Federal Fluminense University, Volta Redonda 27255-125, Brazil	Giulio Medeiros

14:40-15:00	**A Three-interface Shrinking Core Model for Reduction of Hematite by Hydrogen at Moderate Temperature** ***Devendra Nama*1, Sujan Hazra2, Samik Nag2, and Rahul Sarkar1*** 1. Department of Materials Science and Engineering, Indian Institute of Technology Kanpur, Kanpur, India 2. Ironmaking Research Group, Tata Steel Limited, Jamshedpur, India	Devendra Nama
15:00-15:20	***Process simulation of direct reduced iron production with carbon dioxide capture via calcium looping*** ***Chuanbao Luan1**, Haichuan Xu2, Pengjun Cui1, Liang Zeng1* *1. School of Chemical Engineering and Technology, Tianjin University, Tianjin 300072, China;* *2. Linyi steel industry collaborative innovation center, Linyi 276004, Shandong, China*	**Chuanbao Luan** **栾传宝**
15:20-15:35 Tea Break		
15:35-15:55	**Production Practice of Adding Scrap Steel to No.6 Blast Furnace in WISCO** **Shanshan Yu**, Zhao Shuai, Lingkun Chen Baosteel Central Research Institute (Qingshan)，China	Shanshan Yu 余珊珊
15:55-16:15	**Numerical Analysis of Particle Distribution Continuity and the Impact of Particle Shape in Bell-Less Blast Furnace Charging** **Meng Li 1,***, Yaowei Yu 2 , Henrik Saxén 1 1. Process and Systems Engineering Laboratory, Faculty of Science and Engineering, Åbo Akademi University, Åbo /Turku 20500, Finland; 2. State Key Laboratory of Advanced Special Steel, Shanghai Key Laboratory of Advanced Ferrometallurgy, School of Materials Science and Engineering, Shanghai University, Shanghai 200444, China	Meng Li
16:15-16:35	**Numerical study on the injection of pre-reduced iron ore fines into a blast furnace** **Ting Shi1**, Yuting Zhuo1 , Yansong Shen1 1.School of Chemical Engineering, University of New South Wales, Sydney, NSW 2052, Australia	Ting Shi
16:35-16:55	**Reaction mechanism of enhanced reduction of iron-bearing minerals in Bayan Obo mine by microwave pyrolysis of biomass** **Yuxia Hou1**, Yongli Jin1, Jie Kang1 1.College of Rare Earth Industry,Inner Mongolia University of Science and Technology,Baotou 014010,China	Yuxia Hou 侯玉霞
16:55-17:15	**Molecular Insights into Bituminous Coal Pyrolysis: Bridging TG-MS Experiments and ReaxFF MD Simulations** **Zhen Sun1,** Kejiang Li1, Jianliang Zhang1, 2* 1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, 30th Xueyuan Road, Haidian District, Beijing 100083, China; 2. School of Chemical Engineering, The University of Queensland, St Lucia, QLD 4072, Australia.	Zhen Sun 孙圳
17:15-17:35	***A New Methodology for Multi- criteria Assessment of Coke's Metallurgical Behavior*** ***Feng Zhou 1,** Xiangyu He1, Kejiang Li1, Jianliang Zhang1,2,** 1. School of Metallurgical and Ecological Engineering, University of Science and Technology	**Feng Zhou** 周峰

	Beijing, Beijing 100083, P.R. China; 2. School of Chemical Engineering, The University of Queensland, St Lucia, QLD 4072, Australia.	

Session D1 - Hydrogen (H_2)-based Ironmaking

Wednesday, 27 August 2025, GMT+8 (Beijing) 8:30-12:10 Room D		Speaker
8:30-8:55	Keynote ***Effect of H2 mixed gas on the swelling behavior of iron ore pellets*** ***Ko-ichiro Ohno1, Tatsuya Kon1, Keisuke Fujihara1, Yoshiko Nakahara2, Kota Moriya2, Sumito Ozawa2*** *1. Dept. of Materials, Graduate School of Eng., Kyushu University, Motooka 744, Nishiku, Fukuoka819-0395, Japan;* *2. Research Dept. of Carbon Neutral Process, JFE Steel Corporation, 1 Kawasakicho, Chuoku, Chiba 260-0835, Japan*	**Ko-ichiro Ohno**
8:55-9:20	Keynote ***Practice Analysis of COG-based Shaft Furnace Process*** ***Fengman Shen1,2, Yan Zhang1, Shuo Wang1, Xiangyang Pan1, Weiling Zhang1, Haiyan Zheng1,2, Xin Jiang1,2, Jianqiang Gao1,2*** *1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, No.3-11, Wenhua Road, Heping District, Shenyang, Liaoning 110819, China;* *2. School of Metallurgy, Northeastern University, No.3-11, Wenhua Road, Heping District, Shenyang, Liaoning 110819, China*	**Fengman Shen** **沈峰满**
9:20-9:40	***Anglo American Premium Iron Ore Characterizations for High-efficiency Blast Furnace and DRI Operations*** ***David Lin1, Italian Mashego2, Jacques Muller2, Phindile Mbele2*** *1. Anglo American, Marketing, Collyer Quay, Singapore;* *2. Anglo American, Technical Solutions - Value in Use, Roger Dyason Road, Pretoria, South Africa*	**Liquan Lin**
9:40-10:00	***Low Temperature Reduction Disintegration Mechanism of Self-fluxing Pellets in a Hydrogen Reduction Shaft Furnace*** ***Koki Momma1, Taichi Murakami1*** *1. Graduate School of Environmental Studies, Tohoku University 6-6-02, Aoba, Aramaki, Aoba-ku, Sendai, Miyagi, 980-8579, Japan*	**Koki Momma**
10:00-10:20	***Study on Characteristics and Kinetic Analysis of Direct Reduction of Pellet Powder with Ammonia*** ***Li Li1, Hongwu Li1, Yuejun Liu1, Jianting Lin1, Xianchun Li1*** *1. School of Chemical Engineering, University of Science and Technology Liaoning*	**Li Li** **李丽**
10:20-10:35 Tea Break		

10:35-11:00	Keynote ***GOD control in multi-stage hydrogen reduction of limonite ore*** ***Seong-Jin Kim1, Dohyeon Kim1, Seongkyu Cho2, Leonardo Tomas da Rocha1 and Sung-Mo Jung1*** *1. Graduate Institute of Ferrous and Eco Materials Technology (GIFT), Pohang University of Science & Technology (POSTECH), Cheongam-ro 77, Pohang, South Korea;* *2. Ironmaking Research Group, POSCO Technical Research Labs, Pokposarang-gil 8, Gwangyang, South Korea*	**Seong-Jin Kim**
11:00-11:25	Keynote ***Hydrogen-based shaft furnace pellets preparation and high-efficiency reduction technology*** ***Chenmei Tang1, Jian Pan1, Deqing Zhu1, Zhengqi Guo1, Congcong Yang1, Siwei Li1*** *1. School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, China*	**Jian Pan** **潘建**
11:25-11:50	Keynote ***Digital Twin Comparison of CO and Hydrogen for Direct Reduced Iron Production*** ***Pasquale Cavaliere*** *University of Salento*	**Pasquale Cavaliere**
11:50-12:10	***Hydrogen-rich Fuels Injection Effects on Furnace Pressure Drop in 5500 m3 Blast Furnace*** ***Xiangfeng Cheng1, Gele Qing1, Fuming Zhang2, Guilin Wang1, Chong Shao1*** *1. ShouGang Research Institute of Technology，Beijing 100043, China；* *2. Chief Engineer Office of Shougang Group Co., Ltd., Beijing 100041, China*	**Xiangfeng Cheng** **程相锋**

Session D2 - Hydrogen (H_2)-based Ironmaking

Wednesday, 27 August 2025, GMT+8 (Beijing) 13:30-17:30 Room D		**Speaker**
13:30-13:55	Keynote ***Findings from Laboratory-scale Electric Smelting Furnace Experiments*** ***Tom Honeyands1, Craig Garlick1, Tejbir Singh1, Khadijeh Paymooni1, Nathan Barrett1, Tuyen Nguyen1, Damien O'Dea2*** *1. BHP Centre for Sustainable Steelmaking Research, The University of Newcastle, Callaghan, NSW, 2308, Australia;* *2. BHP Marketing Sustainability, 480 Queen St, Brisbane, QLD, 4000, Australia*	**Tom Honeyands**
13:55-14:20	Keynote ***Fundamental and practical aspects of hydrogen reduction of iron ore*** ***Liming Lu*** *CSIRO Mineral Resources, 1 Technology Court, Pullenvale, QLD 4069, Australia*	**Liming Lu**
14:20-14:40	***Vale's Technological Innovations: Sustainability and Operational Efficiency in Iron Ore Beneficiation*** ***Michelle Marques[1], Klaydison Silva[2], Tatiane Gonçalves[2], Ivan Pena3, Victor Padula4*** *1. Vale S/A, Iron Ore Technical Manager of Mineral Technology;* *2. Vale S/A, Iron Ore Mineral Processing Department Team;* *3. Vale S/A, Iron Ore General Management of Development of Technical Solutions for*	**Michelle Marques**

	Mineral Processing; *4. Vale S/A, Iron Ore Mineral Processing Department Director*	
14:40-15:00	***UNSW Shen Lab Blast Furnace Modelling: Advanced CFD Blast Furnace Model and Platform Application - High Ratio of Pellet Operation*** ***Ziguang Zhao1, Xiaobing Yu1, Yansong Shen1**** *1. Process Modelling and Optimisation of Reacting Flow, School of Chemical Engineering, University of New South Wales, Kensington, Sydney, NSW 2033, Australia*	**Ziguang Zhao**
15:00-15:20	**Blast furnace smelting with injection of coal gasification products** **Oleksii Merkulov1, 2** **1. Suzhou SITRI Welding Technology Research Institute Co., Ltd, Zhangjiagang, 215615, Jiangsu, China;** **2. Iron and Steel Institute National Academy of Sciences of Ukraine, 49107, Dnipro, Ukraine**	Oleksii Merkulov
15:20-15:35 Tea Break		
15:35-16:00	Keynote ***Hydrogen Plasma Smelting Reduction: A Fast and Carbon-Free Pathway for Iron, Ferroalloy, and Stainless Steel Production*** ***Baihaqi Hakim, Izzul Islam, Dale Tandersen, Abrar Taimullah, Yopi Hendrawan, Taufiq Hidayat, Zulfiadi Zulhan*** *Metallurgical Engineering, Faculty of Mining and Petroleum Engineering, Institut Teknologi Bandung, Indonesia*	**Zulfiadi Zulhan**
16:00-16:25	Keynote ***DRI Carbon content control measures for hydrogen-based shaft furnace based on experiment and numerical simulation*** ***Shaofeng Lu1, Yaozu Wang2,3, Jianliang Zhang1, Qiang Cheng1, Jiaqi Li4, Zhengjian Liu1*** *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China* *2. School of Intelligence Science and Technology, University of Science and Technology Beijing, 100083 Beijing, China* *3. Institute of Artificial Intelligence, University of Science and Technology Beijing, 100083 Beijing, China* *4. School of Advanced Engineering, University of Science and Technology Beijing, 100083 Beijing, China*	**Zhengjian Liu** **刘征建**
16:25-16:50	Keynote ***Hydrogen-based shaft furnace technology is an important path for China's iron and steel industry to achieve green and low-carbon development*** ***Xindong Wang, Xing Han*** *HBIS GroupCo., Ltd*	**Xindong Wang, Xing Han** **王新东，韩星**
16:50-17:10	**Effect of Agglomeration structure on the Direct Reduction of Iron oxides** ***Pasquale Cavaliere1*** *1. University of Salento*	**Pasquale Cavaliere**
17:10-17:30	***Ab Initio Molecular Dynamics with Enhanced Sampling for Reduction Mechanism of FeO Surfaces*** ***Chunhe Jiang1, Kejiang Li2, Jianliang Zhang2,3*** *1. Technical Support Center for Prevention and Control of Disastrous Accidents in*	**Chunhe Jiang** **姜春鹤**

	Metal Smelting, University of Science and Technology Beijing, Beijing 100083, China *2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China.* *3. School of Chemical Engineering, The University of Queensland, St Lucia, QLD 4072, Australia.*	

Session D3 - Hydrogen (H_2)-based Ironmaking

Thursday, 28 August 2025, GMT+8 (Beijing) 8:30-12:10 Room D		Speaker
8:30-8:55	Keynote ***Influence of Hydrogen Injection on Basic Iron Ore Sinter Reduction at Blast Furnace Wall Conditions*** ***Ahmed Abdelrahim1, Aki Koskela1, Mikko Iljana1, Carmen van der Kroon2, and Timo Fabritius1*** *1. Process Metallurgy Research Unit, University of Oulu, Pentti Kaiteran katu 1, 90014 Oulu, Finland;* *2. Tata Steel Europe, P.O. Box 10.000, 1970 CA IJmuiden, The Netherlands*	Ahmed Abdelrahim
8:55-9:20	Keynote ***Comprehensive Utilization Strategies and Research Progress of Nickeliferous Laterite Resources*** ***Jing Chen1, Yuqi Zhong1, Jing Wang1, Jinliang Xiong1, Xinyue Wu1, Mingjun Rao1**** *1. School of Minerals Processing & Bioengineering, Central South University, Changsha, Hunan 410083, China*	**Mingjun Rao** 饶明军
9:20-9:40	***Experimental Study on Biochar Gasification by Carbon Dioxide to Produce Reducing Gas for Smelting*** ***Wei Wang1, Gele Qing, Xiaoran Song*** *1. Research Institute of Technology, Shougang Group Corporation*	Wei Wang 王伟
9:40-10:00	***Improving Carburization Efficiency Using Biomass Gasification*** ***Yubin Lee1, Dongsoo Lee1, Jisoo Lim1, Dahan Cho2, Youngjae Kim2, Jong Oh Jo1*** *1. Hydrogen Reduction Technology Department team, R&D Center, Hyundai Steel, Republic of Korea* *2. Inha University, Materials Science & Engineering, Republic of Korea*	**YUBIN LEE**
10:00-10:20	***H2 Reducibility and Sticking Behaviour of Australian Ores in H2 Fluidized Bed Reduction*** ***Rou Wang1, Matt Cole2, Priscilla Tremain2, Tom Honeyands1*** *1. BHP Centre for Sustainable Steelmaking Research, School of Engineering, The University of Newcastle, Callaghan, NSW, 2308, Australia;* *2. Priority Research Centre for Frontier Energy Technologies & Utilisation, The University of Newcastle, Callaghan, NSW, 2308, Australia.*	**Tom Honeyands** **Rou Wang**
10:20-10:35 Tea Break		

10:35-11:00	Keynote ***Softening and Melting Behaviour of Ferrous Burdens in Gas Compositions Representative of Hydrogen Enriched Blast Furnace Operation*** ***Nathan Barrett1, Evan Copland1, Damien O'Dea2, Tom Honeyands1,**** *1. BHP Centre for Sustainable Steelmaking Research, School of Engineering, The University of Newcastle, Callaghan, NSW, 2308, Australia;* *2. BHP, 480 Queen St, Brisbane, QLD, 4000, Australia*	**Nathan Barrett**
11:00-11:25	Keynote ***Emission Abatement Potential of DRI Shaft Furnace Integrated with ESF-BOF Process Route*** ***Khadijeh Paymooni1, Craig Garlick1, Damien O'Dea2, Andrew Gadd2, Tom Honeyands1*** *1. BHP Centre for Sustainable Steelmaking Research, The University of Newcastle, Callaghan, NSW 2308, Australia* *2. BHP Marketing Sustainability, 480 Queen St, Brisbane Qld 4000 Australia*	**Tom Honeyands**
11:25-11:45	***Blast Furnace Operation with Oxygen Pulse Injection and First Developments for Hydrogen Pulse Injection into the Blast Furnace Shaft*** ***William Ross Edmond1*, Rainer Klock2, Hauke Bartusch3, Bartosz Smaha4*** *1. Primetals Technologies Ltd, 7 Fudan Way, Thornaby, Stockton-on-Tees, TS17 6ER, United Kingdom* *2. thyssenkrupp AT.PRO tec GmbH, thyssenkrupp Allee 1, 45143 Essen, Germany* *3. VDEh-Betriebsforschungsinstitut GmbH, Sohnstraße 69, 40237 Düsseldorf ,Germany* *4. thyssenkrupp Steel Europe AG, Kaiser-Wilhelm-Straße 100, 47166 Duisburg ,Germany*	**William Ross Edmond**
11:45-12:05	***CFD study of hydrogen injection through tuyeres into ironmaking blast furnaces*** ***Yuting Zhuo*** *University of New South Wales*	**Yuting Zhuo**

Session D4- Hydrogen (H_2)-based Ironmaking + Graduate Student Presentation

Thursday, 28 August 2025, GMT+8 (Beijing) 13:30-17:25 Room D		**Speaker**
13:30-13:55	Keynote **An innovative hydrogen reduction method for manufacturing advanced iron-based materials** ***Min Gan1*** 1.School of Minerals Processing & Bioengineering, Central South University, China	Min Gan 甘敏

13:50-14:15	keynote ***Hydrogen-based direct reduction of industrial hematite pellets: An experimental investigation and reaction modeling*** ***Leili Tafaghodi*** *McMaster University*	**Leili Tafaghodi**
14:15-14:40	**Keynote Progress of fuel injection technology in blast furnace ironmaking: A review** *WU Dingwen1, ZHANG Jianliang1 *, **XU Runsheng**1 *, LI Suqin1,XIN Yuan2, JIA Xian2, LI Baoliang2* *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, 100083, P.R. China;* *2. Iron Former Management Center, Jingye Iron and Steel Company Limited, 050400, P.R. China*	Runsheng Xu 徐润生
14:40-15:00	***Effects of hydrogen-rich gas injection on blast furnace smelting and existing problems discussion*** ***Shuhui Zhang*, Qing Lyu , Ran Liu , Chenchen Lan , Yana Qie , Jianpeng Li*** *College of Metallurgy and Energy, North China University of Science and Technology，Tangshan 063210，Hebei， China*	**Shuhui Zhang** **张淑会**
15:00-15:20	**Study on the sticking phenomenon in fluidized ironmaking and gas-based shaft furnace ironmaking processes** **Lei Guo1, Kaidi Mu1, Haojie Zheng1, Zhancheng Guo1** 1. State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, Beijing 100083, Beijing, China	Lei Guo **郭磊**
15:10-15:25 Tea Break		
15:35-15:55	***Interfacial Behavior in the Reduction Process of Iron Ore Pellet by CH4-H2*** ***Yushan Bu 1, Kejiang Li 1, Jianliang Zhang 1, 2,**** *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, 100083, Beijing, China;* *2. School of Chemical Engineering, The University of Queensland, 4072 St Lucia, QLD, Australia*	**Yushan Bu** **卜雨杉**
15:55-16:15	***Meso-Scale Analysis and Crystal Phase Characterization of H2/CO Reduced Iron Bonding Mechanisms in Fluidized Bed System*** ***Jiehan Zhang1, Linwei Wang1, Shulin Wang1, Lize Li2, Shiyuan Li1,3,**** *1. School of Energy and Environmental Engineering, University of Science and Technology Beijing, Beijing 100083, China; 2. School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China; 3. State Key Laboratory of Iron and Steel Industry Environmental Protection, Beijing 102600, China*	**Jiehan Zhang** **张洁涵**

16:15-16:35	***Development and application of key technology of copper-steel composite cooling stave*** ***Songjian Shan1****, Jianliang Zhang1, Yanbing Zong1*, Ziping Guo2, Dongdong Liu2, Xiaodong Ji2* *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China;* *2. Heibei Wanfeng Metallurgical Equipment Co., Ltd., Hebei 076250, China*	**Songjian Shan** **单松建**
16:35-17:05	**3D Numerical Modelling of Heat and Mass Transfer for Sustainable Ironmaking in the Blast Furnace** ***Ayush Badaya1,* and Govind S Gupta1*** *1. Department of Materials Engineering Indian Institute of Science (IISc)*	Ayush Badaya
17:05-17:25	***A CFD-DEM Model for Simulating Direct Reduction of Iron Ore*** ***Haotian Liao 1, Kejiang Li 1, *, Jianliang Zhang 1, 2*** *1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, 100083, Beijing, China;* *2. School of Chemical Engineering, The University of Queensland, 4072 St Lucia, QLD, Australia*	**Haotian Liao** **廖昊添**

Poster Session

Research and Development, Application of Large-scale, Green, Efficient and Intelligent Coke Dry Quenching(CDQ) Technology	Henglin Zhao1, Qingbin Yang2,3, Song Lin1, Canpeng Zhu1, Hairu Xu1 1. Beijing JC Energy Environment Engineering Co., Ltd, China 2.Shougang Jingtang Iron & Steel Co.， Ltd., China 3.Hebei Coal & Coking Technology Innovation Center,China
Preliminary Research on Binder for Iron Ore Briquette for Gas Reduced Iron in Shaft Furnace	Jiwei Cai1,2, Xuexia Zhou1, Huaping Zhang1, Zhiming Zhang1, Yanzhao Zhang1, Weihua Guo1 1. Henan Jianjie Industrial Co., Ltd., China; 2. Henan University, China
Study on the Melting Behavior of Pre-reduced Metalized Carbon-Containing Pellets in the Melting Bath	Junmao Qie, Mengfei Cao, Shuqi Zhang, Zefeng Zhao, Tong Xu Inner Mongolia University of Science & Technology, China
Research on the Process of Synergistically Producing Ferroalloy and Glass-Ceramic from Industrial Solid Wastes	Zuoliang Zhang, Yan Huang, Chunlei Wu, Ye Sun, Ren Chen, Yu Cao, Fangyu Leng, Chang Zhao Liaoning Institute of Science and Technology, China
Experimental Research on Influencing Factors of Metal-slag Melting Separation after Titanomagnetite Prereduction	Lin Li1, Fuming Zhang2, Canpeng Zhu1, Henglin Zhao1, Song Lin1 1. Beijing JC Energy＆Environment Engineering Co., Ltd., China 2. Chief Engineer Office, Shougang Group Co., Ltd., China
Softening-Melting Behavior of Sinter under Hydrogen-Rich Blast Furnace Conditions	Fuchuan Zhang1, Kun He2, Qinghui Wu1, Yunjian Zhao2, Gang Wang2, *, Jian Xu1 1. College of Materials Science and Engineering, Chongqing University, China 2. CISDI Engineering Co. Ltd., China
Prediction and analysis of thermal properties of high Al2O3 blast furnace slag system	Wang Zhen1,2, Zheng Haiyan1,2 *, Zhang Yan1,2, Zhang Weiling2, Jiang Xin1,2, Gao Qiangjian1,2, Shen Fengman1,2 1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, China 2. School of Metallurgy, Northeastern University, China
Investigations on Hearth Damage and Erosion Mechanism of No. 7 Blast Furnace in Baotou steel	Fan Yang, Xiaoguang Bai, Yuzhu Li,Xu Dang,Wenping Miao Inner Mongolia Baotou Steel Union Co., Ltd., China
Carbonization Time Effect on Coke Strength and Microscopic Structure	Xin Dai1, Dongtao Li 1, Yuedong Xu 2, Yang Liu 1, Liang Pang 2, Guijie Cao 2, Shaokui Guan 2, Deying Guo 1, Manxiang Zhao 3 1. Research Institute of Technology of Shougang Group Co., Ltd., China 2. Qian 'an Zhonghua Coal Chemical Co., China 3.Beijing Shougang Co., Ltd. Qianshun Technology Center, China
Analysis of iron ore reduction behavior based on hydrogen-rich conditions	Wang Shuo1,2, Shen Fengman1,2, Zhang Yan1,2, Zhao Jiahui1,2, Zheng Haiyan1,2, Jiang Xin1,2, Gao Qiangjian1,2 1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University,China 2. School of Metallurgy, Northeastern University, China
Reaction mechanism of enhanced reduction of iron-bearing minerals in Bayan Obo mine by microwave pyrolysis of biomass	Yuxia Hou, Yongli Jin, Jie Kang College of Rare Earth Industry,Inner Mongolia University of Science and Technology,China
Brief analysis of hydrogen production scheme using waste heat of BFG	Jia Li, WISDRI Engineering & Research Incorporation Limited, China

Hydrogen-based reduction and magnetic separation of Bayan Obo Fe-Nb complex ore	Boqi Wang1, Jing Wang1, Shaoyang Chang1, Zhong Ai1, Zhao Yang1,2, Guoying Yan2, Dan Wu2, Zhongshuai Jia2, Mingjun Rao1 1. School of Minerals Processing & Bioengineering, Central South University, Changsha 410083, Hunan, China; 2. Mining Research Institute of Baotou Steel (Group) Corp., Baotou 014003, China
Consideration and discussion on the application of ammonia in direct reduction ironmaking	Liu Yuejun , Xianchun Li , Shaoyan Wang , Li Li University of Science and Technology Liaoning, China
Effect of vanadium-titanium magnetite proportion on flux pellets properties and improvement of softening-melting properties by hydrogen injection based on all pellets integrated burden	Bojian Chen1,3, Tao Jiang2, Jing Wen2, Jie Liu1,3, Hui Zhang1,3, Libing Xu1,3, Xun Jin1,3, Peng Hu 4 1. State Key Laboratory of Metal Material for Marine Equipment and Application, China; 2. Northeastern University, China; 3. Iron and Steel Research Institute of Angang Iron and Steel Group Corporation, China; 4. State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization, China
Research progress on direct reduction-separation of vanadium titanium ore assisted by sodium salt and proposal of a new low-temperature smelting process	Lingbing Kong, Peimin Guo, Lei Wang,Xiaodong Ping State Key Laboratory for Advanced Iron and Steel Processes and Products, Central Iron and Steel Research Institute Co., Ltd.,China
Carbon emission analysis of different ironmaking process routes based on biochar utilization	Huapeng Yang1, Chao Feng1,2,3, Mingwei Tu1, Tao Lin1,4, Ziheng Zhao1, Shanghai Yi1 1. Institute for Carbon Neutrality, University of Science and Technology Beijing, China 2. Institute of Steel Sustainable Technology, Liaoning Academy of Materials, China; 3. Beijing Key Laboratory of Research Center of Special Melting and Preparation of High-end Metal Materials, University of Science and Technology Beijing, China 4. Jiangsu Binxin Steel Group Co. Ltd., China
Numerical simulation on the influence of the interaction between H2 and CO on the smelting characteristics of shaft furnace	Jun Ni1,2, Lingxiao Bai1,2, Haiqing Zhang1,2,Jian Xu1,2 1. College of Materials Science and Engineering, Chongqing University, China 2. Chongqing Key Laboratory of Vanadium–Titanium Metallurgy and New Materials, Chongqing University, China
Study on Testing Method of High Temperature Performance and Optimization of Additive Parameters of Sintering Flux	Hui Zhang1,2 ,Zhibin Li 3 ,Shuai Liu 3,Jie Liu 2, Lixiang Duan 2 ,Xun Jin2 1.State Key Laboratory of Metallic Materials for Marine Equipment and Applications, China 2.Iron and Steel Research Institute of Angang Group, China 3.Sintering Plant of Ansteel company limited Co., China
Influence of magnesium-containing composite bentonite on properties of high-silica pellets	Yang Li, Hongmei Qiao, Xin Zhang, Ronggang Wang, Xiaolin Zhang Ironmaking Department of Beijing Shougang Co., Ltd., China
Research on the Efficient Utilization Technology of iron-zinc Dust and Sludge of Shougang Co., Ltd	Xiaobo Yu1,2, Manxiang Zhao2, Zhiqiang Yang3, Mingyuan Gu3 Lei Liu2, Shengli Wu4 1. Institute of Engineering Technology, University of Science and Technology,China 2. Beijing shougang Co., Ltd, China 3. Institute of Technology of Shougang Group, China

	4. Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
Fundamental and technology of super-high bed homogeneous sintering for iron ores	Liangping Xu, Guanghui Li, Tao Jiang Central South University, China
Research on the preparation of high-strength and good metallurgical performance cold solid pellets using steel slag	Yang Tao1 , Wang Kai2, Xu Jia2, Qing Gele1 1.Shougang Research Institute of Technology, China 2. Beijing Shougang Co., Ltd.,Beijing,China
Numerical simulation of multi-source fuel combustion behavior in rotary hearth furnace	Renhao Tian, Dongcai Luo, Yang You, Zhixiong You, Xuewei Lv College of Materials Science and Engineering, Chongqing University, China
Slag stability assessment and composition optimization based on liquid phase interval: Inscribed Circle Division	Yijian Zhang, Kexin Jiao, Jianliang Zhang, Xiaoyue Fan University of Science and Technology Beijing, China
Study on Properties of Tamping Coke in Heilongjiang Province	Xiuli Xu1, Chaojun Yang2, Yu Jiang1, Zubin Xiao2, Linghui Meng1 1. Sinosteel Anshan Research Institute of Thermal Energy Co., Ltd, China 2. Jianlong Xilin Iron and Steel Co., Ltd, China
Condition Diagnosis and Control of Blast Furnace Based on ModernTCN and Multi-task Learning	Han Yan, Bingquan Zhu, Ziheng Lin, Chengming Yu, Yancheng Jiang, Meng Wang WISDRI Engineering & Research Incorporation Limited, China
Experimental Study on Alkali Production through Carbon Dioxide Absorption using Cold-rolled Saline Wastewater	Xiaoqiang Jin, Xianwei Li, Ziguo Hu Central Research Institute, Baoshan Iron and Steel Co., Ltd., China
Effects of burden distribution patterns on the smelting characteristics of blast furnace based on numerical simulation	Litan Yin1, Wang Zeng1, Yunpeng Si1, Heng Zhou2, Shengli Wu2, Mingyin Kou1 1. State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, China 2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China
The influence mechanism of deposit and K, Na, F on refractory in grate-rotary kiln	Wenying Liu1,2,3, Peijun Liu1,2,3, Shuai Ma1,2,3, Yanshuo Shi1,2,3, Dongdong Li1,2,3, Yifan Chai1,2,3 1. School of Metallurgical Future Technology, Inner Mongolia University of Science and Technology, China 2. School of Rare Earth Industry, Inner Mongolia University of Science and Technology, China 3. Key Laboratory of Green Extraction & Efficient Utilization of Light Rare-Earth Resources (Inner Mongolia University of Science and Technology), Ministry of Education, China
Slag stability assessment and composition optimization based on liquid phase interval: Inscribed Circle Division	Yijian Zhang, Kexin Jiao, Jianliang Zhang, Xiaoyue Fan University of Science and Technology Beijing, China
The treatment of steel plant wastewater treatment by-products in the sintering process: flue gas pollutants and product quality indicators	Hexi Zhao, Yifei Zhang, Xiangyang Xu School of Metallurgical Engineering, Anhui University of Technology, China
Control of Liquid-phase Mineralization Process during Iron Ore Sintering: Theory and Application	Huibo Liu , Liangping Xu , Guanghui Li , Tao Jiang Central South University, China
Study on TiC formations and eliminations under H2-rich vanadium titanomagnetite oxygen blast furnace smelting	Wenbo Tang 1,2 , Mao Chen 2 , Lingling Liu 2 , Kaihui Ma 2 , Yunpeng Fang 2 , Ying Li 1 1. Northeastern University, China 2. State Key Laboratory of Vanadium and Titanium Resources

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Blast Furnace Dynamics Model of Carbon Cycle: Application to CO-rich gas injection	Kun He1, Gang Wang1, Zhongping Zou1, Yunjian Zhao1, Qun Niu1, Xuewen Xiao2 1. Laboratory of Low-carbon Blast Furnace, MCC Low-Carbon Technology Research Institute Chongqing, China; 2. CISDI Group Co., Ltd., China
Pilot-scale Experimental Study on Rotary Kiln Pre-reduction and Electric Furnace Smelting for Lump Vanadium Titano-magnetite from South Africa	Chen Liu, Fuqiang Zheng, Bing Hu, Jinchao Wei, Hengdi Ye Zhongye Changtian International Engineering Co., Ltd., China
Progress in Deep Learning-Based Flow Field Reconstruction Algorithms	Wenwen Huang , Zhengjian LIU , Jianliang ZHANG , Yaozu WANG University of Science and Technology Beijing
Economic Blast Temperature Calculation Model for Blast Furnace-Hot Blast Stove Synergy	Jiahao Liu , Jianliang ZHANG , Daoyun ZHANG , Kexin JIAO University of Science and Technology Beijing
Study on the Impact of Chromium on the Smelting Process of High-Chromium Vanadium-Titanium Magnetite furnaces	Tianqiu Wang , Jianliang Zhang , Yuchen Zhang , Runsheng Xu , Zhancheng Guo , Han Dang University of Science and Technology Beijing
Study on the effect of biomass charcoal injection on theoretical combustion temperature and gas in blast furnace	Guoli Jia1 , Han Dang 1 , Runsheng Xu 1 , Jianliang Zhang 1,2 1. University of Science and Technology Beijing 2. School of Chemical Engineering, The University of Queensland, Queensland, 4072, Australia
Study on the influence of biochar addition ratio and particle size on sintering process	Daichao Hu 2,3 , Dongming Zhao 4 , Zhe Jiang 5 , Bingnan Liu 2,3 , Jianwei Zhu 2,3 , Han Dang 1 , Jianliang Zhang 1 , Runsheng Xu 1 1. University of Science and Technology Beijing 2. State Key Laboratory of Metal Material for Marine Equipment and Application 3. Ansteel Iron & Steel Research Institutes 4. Bayuquan Branch of Angang Steel Co., Ltd. 5. Angang Steel Co., Ltd.
Research on the key performance and application of carbon composite brick in blast furnace hearth	Jian Cao 1 , Jinaliang ZHANG 1 , Minghuan LI 2 , Kexin JIAO 1 1. University of Science and Technology Beijing 2. Henan Wunai Group Industrial Co., Ltd.
Study on catalytic gasification of ironcoke by iron carbon dust sludge	Bin Wu , Jianliang Zhang , Runsheng Xu , Yuchen Zhang , Yongsheng Yang University of Science and Technology Beijing
Research Review on Particle Size Detection Methods in Ironmaking Based on Machine Vision	Wenhao Yu 1 , Yaozu Wang 1 , Zhengjian Liu 2 , Jianliang Zhang 2 1. Institute of Artificial Intelligence, University of Science and Technology Beijing 2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing
Research Progress of Blast Furnace Hearth Damage Investigation	Mingbo Song , Jianliang Zhang , Cui Wang , Kexin Jiao University of Science and Technology Beijing
Study on the effect of mineral microstructure during the medium-temperature reduction process in fluxed pellet	Huiqing Jiang , Yaozu Wang , Jianliang Zhang , Zhengjian Liu University of Science and Technology Beijing
Progress and prospect of sintering technology of high proportion limonite	Kang Yan , Zhengjian Liu , Zhen Li , Jianliang Zhang , Yangzu Wang University of Science and Technology Beijing

Influence of water accumulation on thermal characteristics of carbon bricks in a large blast furnace hearth	Ziyu Guo , Yanxiang Liu , Jianliang Zhang , Yanbing Zong , Kexin Jiao University of Science and Technology Beijing
Status and prospects for the application of industrial solid waste in iron ore pellets	Zedong Zhang , Jianliang Zhang , Yaozu Wang , Liming Ma , Qiang Cheng , Huiqing Jiang , Zhengjian Liu University of Science and Technology Beijing, Beijing
Construction of optimized ore blending model of sinter coupled with quality prediction	Chuanlin Liu , Zhengjian Liu , Jianliang Zhang , Yaozu Wang University of Science and Technology Beijing
Data-driven Modeling Methods for Sintering Index Prediction: Research Status and Prospects	Fangming Hao , Qing Li , Jianliang Zhang , Zhengjian Liu , Yaozu Wang University of Science and Technology Beijing
Study on the Mechanism of the Effect of Active Lime on the High-Temperature Sintering Reaction Process	Fulong Li 1 , zhengjian liu 1 , jianliang zhang 1 , yaozu wang 2 , sida li 1 , yushan dai 3 , guotai lin 3 , xulong chen 3 1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, Beijing 100083, China 2. Institute of Artificial Intelligence, University of Science and Technology Beijing, Beijing 100083, China 3. Sansteel Minguang Co., Ltd. Fujian,Fujian 365000, P. R. China
Analysis of optimised blending of bio-char and coal composite injection and the effect of CO2 reduction	Han Dang , Xu run , zhang jianliang , zhang jinyin University of Science and Technology Beijing
Review on the Failure Mechanisms of Refractories in Hydrogen-based Shaft Furnaces: Research Progress and Prospects	Yifei Wang , Jianliang Zhang , Cui Wang , Kexin Jiao , Jian Cao , Tiancai Xia , Yifei Wang Beijing University of Science and Technology
Slag stability assessment and composition optimization based on liquid phase interval: Inscribed Circle Division	Yijian Zhang , Kexin Jiao , Jianliang Zhang , Xiaoyue Fan University of Science and Technology Beijing
Research Progress on Chemical Composition Online Detection for Iron Ore	Yantian Cao , Yaozu Wang , Zhengjian Liu , Jianliang Zhang University of Science and Technology Beijing
Application of Machine Vision in the Quality Inspection of Green Pellets of Pelletized Ore	Xiaolong Liu , Yaozu Wang , Zhengjian Liu , Jianliang Zhang University of Science and Technology Beijing
Research on Preparation of High Grade Pellets through Gas Based Reduction of Fine-Grinded Magnetite	Jian Liu 1 , Zhengjian Liu 1 , Jianliang Zhang 1 , Yaozu Wang 1 , Zhiluo Chen 2 , Rui Deng 2 1. University of Science and Technology Beijing 2. Sinosteel Equipment and Engineering Co., Ltd.,
Hybrid Digital Twin Technology Based on Physical Mechanism and Big Data Analysis	Zhangjie Dai , Yaozu Wang , Zhengjian Liu , Jianliang Zhang University of Science and Technology Beijing
Numerical simulation of working state analysis and structure optimization of double cavity tuyere in large size blast furnace	Wang Zeng , Yunpeng Si , Yehan Fang , Heng Zhou , Tianxiang Zhang , Shengli Wu , Mingyin Kou University of Science and Technology Beijing
Research progress on key technology and application of blast furnace grouting	Huangyu Shi , ianliang Zhang , Guaishuang Wang , Kexin Jiao University of Science and Technology Beijing
Fundamental research on the application of cooling plates in blast furnace	Ming Lei , Zhenxing Zhou , Jiayi Ni , Lei Zhang , Kexin Jiao University of Science and Technology Beijing
Thermal experiment study on synergistic treatment of metallurgical dust and organic solid waste based on iron-bath furnace	Dawei Lan , Jianliang Zhang , Runsheng Xu , Lian Ye , Jinpeng Shi University of Science and Technology Beijing