TECHNICAL PROGRAM

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

AUGUST 25–29, 2025 BEIJING, CHINA

Organized by

The Chinese Society for Metals (CSM)

Co-organized by

University of Science and Technology Beijing (USTB)
Shougang Group

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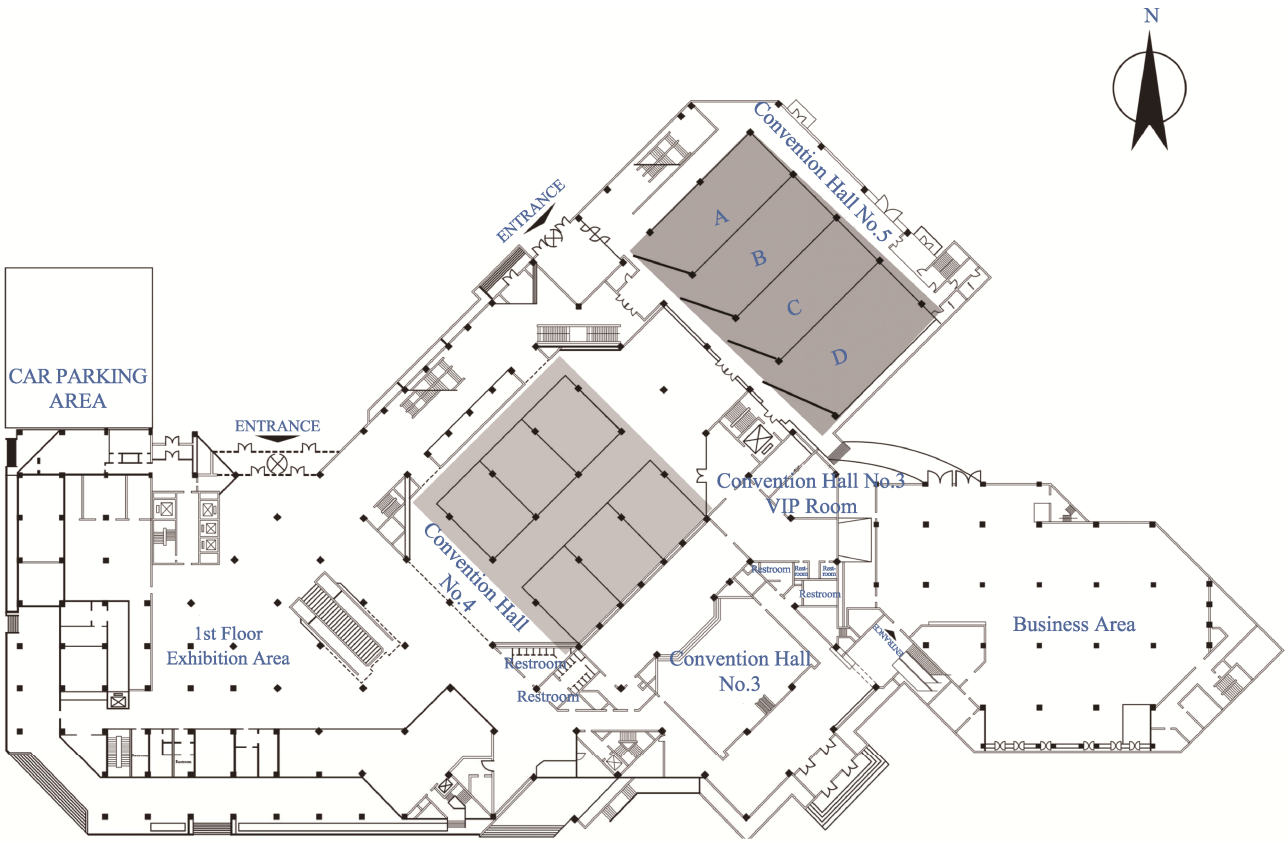
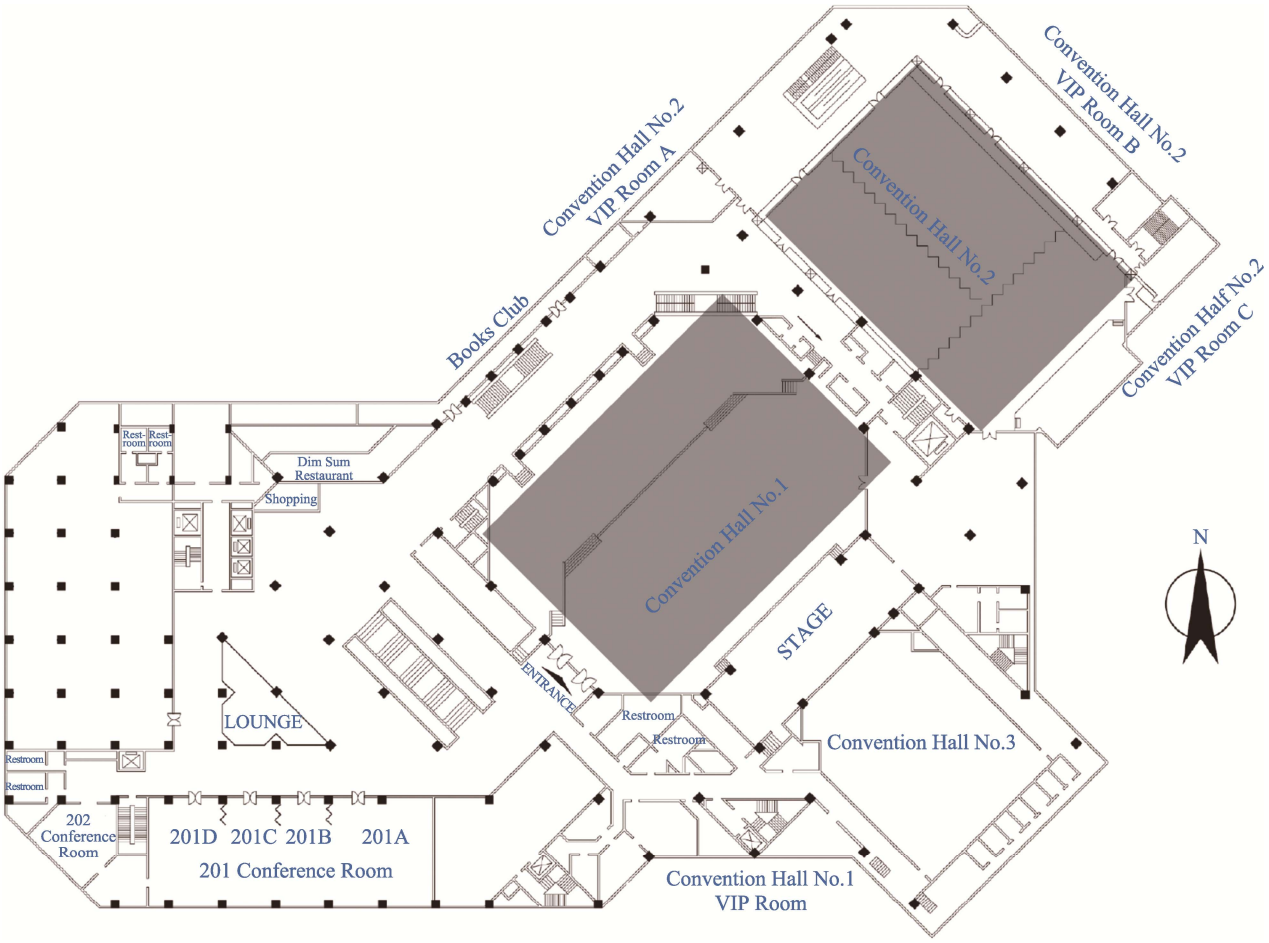
Floor Map

BICC

Plan Of BICC Level 1



BICC
Plan Of BICC Level 2



Schedule At-A-Glance

Plenary Sessions

Convention Hall No. 2 (2nd Floor) of Beijing International Convention Center (BICC)

AM, 26 August	**Plenary Session P1** Part 1 Chairs: **Zhiling Tian** (The Chinese Society for Metals, China) **Fumitaka Tsukihashi** (The University of Tokyo, JFE Steel, Japan) Part 2 Chairs: **Aibing Yu** (JITRI Institute for Process Modelling and Control, China) **Johannes Schenk** (Montanuniversitaet Leoben, Austria)
PM, 26 August	**Plenary Session P2** Part 1 Chairs: **Jianliang Zhang** (University of Science and Technology Beijing, China) **Myoung Gyun Shin** (POSCO, South Korea) Part 2 Chairs: **Jirigele Qinggele** (Shougang Group, China) **Henrik Saxen** (Åbo Akademi University, Finland)

Parallel Sessions

Convention Hall No. 5 (1st Floor) of Beijing International Convention Center (BICC)

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PM, 27 August	**A2: Sintering and Pelletizing** **Part 1 Chairs:** Liming Lu, Guanghui Li **Part 2 Chairs:** Yuanbo Zhang, Wen Pan	**B2: Cokemaking** **Chairs:** Lauren Williamson, Kejiang Li **B2: Blast Furnace Ironmaking-Maintenance and Campaign Life** **Chairs:** Haibin Zuo, Shengfu Zhang	**C2: Blast Furnace Ironmaking-Process and Operation** **Part 1 Chairs:** Maarten Geerdes, Ping Du **Part 2 Chairs:** Yongxiang Yang, Xuesong Zhang	**D2: Hydrogen (H_2)-based Ironmaking** **Part 1 Chairs:** Zulfiadi Zulhan, Deqing Zhu **Part 2 Chairs:** Feng Wang, Jian Xu

	Room A	Room B	Room C	Room D
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PM, 28 August	**A4: CO_2 Reduction and Energy Saving** **Chairs:** Yonglong Jin, Zhiyun Ji	**B4: CO_2 Reduction and Energy Saving** **Chairs:** Alfredo Sarkis, Mao Chen	**C4: Direct Reduction and Smelting Reduction** **Chairs:** Youngjae Kim, Haiyan Zheng	**D4: Hydrogen (H_2)-based Ironmaking** **Chairs:** Leili Tafaghodi, Lei Guo
	A4: Young Scholar Presentation **Chairs:** Xin Dai, Mingyin Kou	**B4: Young Scholar Presentation** **Chairs:** Lili Jiang, Lulu Jiao	**C4: Young Scholar Presentation** **Chairs:** Giulio Medeiros, Yifan Chai	**D4: Biomass Metallurgy** **Chairs:** Oleksii Merkulov, Runsheng Xu

Poster Sessions

26-28 August

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Plenary Session

8:30-12:00
Tuesday, 26 August 2025, GMT+8 (Beijing)
Convention Hall No.2 (2nd Floor) of BICC

Chairs: **Zhiling Tian** (The Chinese Society for Metals, China)
Fumitaka Tsukihashi (The University of Tokyo, JFE Steel, Japan)

8:30-8:50 Opening Address

8:50-9:25 Innovation and Advances in the Preparation of Ironmaking Burdens in China
Tao Jiang
Central South University, China

9:25-10:00 Japanese Steel Industry's Challenge toward Carbon Neutral Steelmaking
Yutaka Ujisawa
Nippon Steel Corporation, Japan

10:00-10:35 Progress and Innovations in the Chinese Ironmaking Industry
Jianliang Zhang
University of Science and Technology Beijing, China

10:35-10:50 **Tea Break**

Chairs: **Aibing Yu** (JITRI Institute for Process Modelling and Control, China)
Johannes Schenk (Montanuniversitaet Leoben, Austria)

10:50-11:25 Update on the Development of POSCO's Hydrogen-based Ironmaking Process, HyREX®
Myoung Gyun Shin
POSCO, South Korea

11:25-12:00 Practice and Prospect of Carbon Reduction in Shougang Long Process Steel Production
Jirigele Qinggele
Shougang Group, China

14:00-17:10
Tuesday, 26 August 2025, GMT+8 (Beijing)
Convention Hall No.2 (2nd Floor) of BICC

Chairs: **Jianliang Zhang** (University of Science and Technology Beijing, China)
Myoung Gyun Shin (POSCO, South Korea)

14:00-14:35 The Green Transition of the Steel Industry in Sweden – State of the Art
Pontus Sjöberg
Swerim AB, Sweden

14:35-15:10 Exploration of Green and Intelligent Technologies in Ironmaking at Baosteel
Daihua Zhang
China BaoWu Steel Group Corporation Limited, China

15:10-15:45 Innovation and Technological Transformation in Ironmaking at ArcelorMittal
Dennis D. Lu
ArcelorMittal Global RDEC & RDSF, USA

15:45-16:00 **Tea Break**

Chairs: **Jirigele Qinggele** (Shougang Group, China)
Henrik Saxen (Åbo Akademi University, Finland)

16:00-16:35 Blast Furnace Modelling and Application: How to Optimise Design and Control for Best Energy Efficiency
Aibing Yu[1,2]
1. JITRI Institute for Process Modelling and Control, China;
2. Great Bay University, China

16:35-17:10 Reimagining Ironmaking through Blast Furnace in the Coming Years
S. S. Mohanty
Essar Minmet Limited, India

A1 Sintering and Pelletizing

8:30-12:10
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room A
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Eiki Kasai** (Tohoku University, Japan)
Xuewei Lv (Chongqing University, China)

8:30-8:55 *Keynote* **Sinter Return, Sintering Performance and Decarbonisation**
Liming Lu[1], Tim Evans[2], Kenta Takahara[3]
1. CSIRO Mineral Resources, Brisbane, Australia;
2. Rio Tinto Technological Resources, Perth, Australia;
3. JFE Steel Research Centre, Fukuyama, Japan

8:55-9:20 *Keynote* **Advanced Agglomeration Technology for Low-carbon Ironmaking in China**
Rui Deng[1,2], **Deqing Zhu**[1], Ziluo Chen[2]
1. School of Minerals Processing and Bioengineering, Central South University, China;
2. Sinosteel Equipment and Engineering Co., Ltd., China

9:20-9:40 **Development of Iron Ore Agglomeration Process for Low-carbon Ironmaking**
SangHan Son, Minkyu Wang, Byungjun Chung
POSCO Ironmaking Research Group, Pohang, South Korea

9:40-10:00 **Research on the Preparation Techniques for Flux Pellets of Chromium-Bearing Vanadium Titanomagnetite**

Xiangbiao Yu[1,2,3,4], Tianyuan Li[1,4], Gongjin Cheng[1,2,3,4], Xiangxin Xue[1,2,3,4], He Yang[1,4]
1. School of Metallurgy, Northeastern University, China;
2. Liaoning Key Laboratory of Recycling Science for Metallurgical Resources, China;
3. Northeastern University Innovation Research Institute of Vanadium and Titanium Resource Industry Technology, China;
4. Innovation Research Institute of Comprehensive Utilization Technology for Vanadium-Titanium Magnetite Resources in Liaoxi District, China

10:00-10:20 **Effect of $FeCr_2O_4$ on the Formation and Mechanical Properties of Calcium Ferrite**

Ju Xu[1,2,3], Guojun Ma[1,2,3], Mengke Liu[1,2,3], Xiang Zhang[1,2,3], Dingli Zheng[1,2,3], Yunjie Li[1,2,3]
1. Key Laboratory for Ferrous Metallurgy and Resources Utilization of Ministry of Education, Wuhan University of Science and Technology, China;
2. Hubei Provincial Key Laboratory for New Processes of Ironmaking and Steelmaking, Wuhan University of Science and Technology, China;
3. Hubei Provincial Engineering Technology Research Center of Metallurgical Secondary Resources, Wuhan University of Science and Technology, China

10:20-10:35 **Tea Break**

Chairs: **Chuan Wang** (Swerim AB, Sweden)
Xiaohui Fan (Central South University, China)

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 Domingues[1], Marcus Emrich[1], Wei Wang[2], Qingshi Song[2], Hao Zhou[3]
1. Ferrous Technology Center (CTF), VALE S.A., Brasil;
2. VALE Metals (Shanghai) Co., Ltd., China;
3. Institute of Thermal Energy Engineering, Zhejiang University, China

11:00-11:25 *Keynote* **DEM Simulation of Iron Ore Mixing Behavior in Compound Driven High Shear Mixer**

Dongcai Luo, Renhao Tian, Yang You, **Xuewei Lv**
College of Materials Science and Engineering, Chongqing University, China

11:25-11:50 *Keynote* **Experimental Study on Roasting of Carbon-Containing Iron Ore Pellets with Externally Added Waste Wood in Rotary Kiln**

Chuan Wang[1,2], Junyi Wu[3], Andrey Karasev[2], Xiaojun Ning[3], Guangwei Wang[3]
1. Swerim AB, Process Metallurgy, Sweden;
2. Material Science and Engineering, KTH Royal Institute of Technology, Sweden;
3. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

11:50-12:10 **Study on Low Silicon Sintering Production in Ansteel Group**

Jie Liu[1,2], Libing Xu[1,2], Qiang Zhong[3], Simin Xiang[3], Hui Zhang[1,2], Xun Jin[1,2]
1. Iron and Steel Research Institute of Angang Group, China;
2. State Key Laboratory of Metal Material for Marine Equipment and Application, China;
3. School of Minerals Processing and Bioengineering, Central South University, China

A2 Sintering and Pelletizing

13:30-17:25
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room A
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Liming Lu** (CSIRO Mineral Resources, Australia)
Guanghui Li (Central South University, China)

13:30-13:55 *Keynote* **Progress of Shougang Pelletizing Technology and Its Application in Low-Carbon Metallurgy**

Weidong Zhang[1], **Yunqing Tian**[2], Jirigele Qinggele[2], Jinglin Song[2], Li Zhu[2], Li Ma[2]
1. Shougang Group Co., Ltd., China;
2. Research Institute of Technology, Shougang Group Co., Ltd., China

13:55-14:20 *Keynote* **Fluxed Pellet Laboratory Research and Industrial Application in Ansteel**

Mingshun Zhou[1,2], Enjian Hou[3], Guang Yang[3], Rui Deng[4], Ziluo Chen[4], Wei Ren[1,2], Xian chun Li[5], Liming Lu[6]
1. State Key Laboratory of Metallic Material for Marine Equipment and Applications, China;
2. Iron and Steel Research Institute of Angang Group, China;
3. Anshan Iron & Steel Group Co., Ltd., Donganshan Sintering Plant, China;
4. Sinosteel Equipment and Engineering Co., Ltd., China;
5. School of Chemical Engineering, University of Science and Technology Liaoning, China;
6. CSIRO Mineral Resources, 1 Technology Court, Australia

14:20-14:40 **Review and Outlook on the Progress of Shougang's Sintering Technology in Recent Years**

Yapeng Zhang[1,2], Wen Pan[1,2], Zhixing Zhao[1,2], Huaiying Ma[1,2], Dongqing Wang[1,2], Jingjun Zhao[3], Shuhai Ou[4], Yongjun Liu[3], Wang Zhu[4], Peicheng Gao[4]
1. Shougang Group Co., Ltd. Research Institute of Technology, China;
2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, China;
3. Shougang Jingtang United Iron &Steel Co., Ltd., China;
4. Shougang Qian'an Iron and Steel Company, China

14:40-15:00 **Metallurgical Properties of High-Titanium-Vanadium Magnetite Concentrate for Gas-Based Shaft Furnace**

Yixi Zhang[1], **Shuai Wang**[1], Feng Chen[1], Mao Chen[2,3], Lingzhi Yang[1], Yufeng Guo[1], Tao Jiang[1]
1. School of Minerals Processing and Bioengineering, Central South University, China;
2. Pangang Group Research Institute Co., Ltd., China;
3. State Key Laboratory of Comprehensive Utilization of Vanadium and Titanium Resources, China

15:00-15:20 **The Preparation and Performance Optimization of Medium-High Silicon Fluxed Pellets**

Yaozu Wang[1,2], Zhengjian Liu[3], Jianliang Zhang[4]

1. School of Intelligence Science and Technology, University of Science and Technology Beijing, China;
2. Institute of Artificial Intelligence, University of Science and Technology Beijing, China;
3. School of Advanced Engineering, University of Science and Technology Beijing, China;
4. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

15:20-15:35 **Tea Break**

Chairs: **Yuanbo Zhang** (Central South University, China)
Wen Pan (Shougang Research Institute of Technology, China)

15:35-16:00 *Keynote* **Development and Application of Cascaded Utilization of Low and Medium Temperature Flue Gas in Circular Cooler**

Wen Pan[1,2], Zhixing Zhao[1,2], Yapeng Zhang[1,2], Jianwei Yin[3], Yangsheng Song[3]

1. Research Institute of Iron & Steel, Shougang Group Co., Ltd. Research Institute of Technology, China;
2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, China;
3. Rio Tinto Group, Australia

16:00-16:25 *Keynote* **Numerical Analysis of Hydrogen Injection in Fuel Layer Distribution Sintering Process**

Xiaobo Yang[1,2], Jinhu Zhang[1,2], Jin Xu[1,2], Sida Liu[1,2], **Zongyan Zhou**[1,2]

1. Jiangxi Provincial Key Laboratory of Particle Technology, Jiangxi University of Science and Technology, China;
2. Center for Intelligent Research on Mining and Metallurgical Processes, International Innovation Institute, Jiangxi University of Science and Technology, China

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, UK

16:45-17:05 **Softening and Melting Properties of Vanadium Titanomagnetite Burden for Increasing TiO_2 Content in Slag**

Kaihui Ma[1], Lingling Liu[1], Peng Hu[1], Wenbo Tang[1], Linhe Tao[2], Xiaoliang Jia[2], Shuxing Qiu[1], Mao Chen[1]

1. State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization, Pangang Group Research Institute Co., Ltd., China;
2. Pangang Group Xichang Steel&Vanadium Co., Ltd., China

17:05-17:25 **Effect of the Amount of Magnetic Concentrate Addition on the Sintering Process**

Huaiying Ma[1,2], Jianfeng Zhou[3], Xiaolei Li[3], Peicheng Gao[3], Wen Pan[1,2], Yapeng Zhang[1,2]

1. Research Institute of Technology, Shougang Group Corporation, China;
2. Beijing Key Lab of Green Recyclable Process for Iron & steel Production Tech, China;
3. Beijing Shougang Co., Ltd., China

A3 Automation and Digitalization

8:30-12:05
Thursday, 28 August 2025, GMT+8 (Beijing)
Room A
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Sungmo Jung** (Pohang University of Science and Technology, South Korea)
Mansheng Chu (Northeastern University, China)

8:30-8:55 ***Keynote*** **Online Calculation and Monitoring System of Blast Furnace Operation Furnace Profile Based on Data and Mechanism Dual Drive**

Zhen Zhang[1], Jue Tang[1,2], Quan Shi[1], **Mansheng Chu**[1,3]
1. School of Metallurgy, Northeastern University, China;
2. Engineering Research Center of Frontier Technologies for Low-Carbon Steelmaking (Ministry of Education), China;
3. Liaoning Low-Carbon Steelmaking Technology Engineering Research Center, Northeastern University, China

8:55-9:20 ***Keynote*** **Application and Practice of CISDI Integrated Intelligent Ore Blending Technology**

Gang Wang, Muming Li, Maocheng He, Feifei Lai, Zhibin Hong, Xuewen Xiao
CISDI Engineering Co., Ltd., China

9:20-9:40 **Integrating Mechanistic Modeling with Attention-Enhanced GRU Networks to Predict Molten Iron and Slag Quality Indices of Blast Furnaces**

Guanwei Zhou, Henrik Saxén
Process and Systems Engineering Lab, Åbo Akademi University, Finland

9:40-10:00 **Practice and Consideration on Intelligent Construction of Angang Coking Production Line**

Chao Wang[1,2], Feng Zhao[3], Haidan Wang[4], Xiushi Gan[1,2], Fuxin Li[1,2], Daichao Hu[1,2]
1. State Key Laboratory of Metal Material for Marine Equipment and Application, China;
2. Ansteel Iron & Steel Research Institutes, China;
3. General Coking Plant of Angang Steel Co., Ltd., China;
4. Angang Steel Co., Ltd., China

10:00-10:20 **Development and Application of Digital Twin Model for Blast Furnace Tuyere Based on Online CFD Simulation**

Wenxuan Xu[1,3], Fuming Zhang[2,3], Jirigele Qinggele[1,3], Yanglong Li[1,3], Jianlong Wu[1,3]
1. Shougang Group Research Institute of Technology, China;
2. Chief Engineering Office, Shougang Group Co., Ltd., China;
3. Beijing Key Laboratory of Green Recyclable Process for Iron and Steel Production Technology, China

10:20-10:35 **Tea Break**

Chairs: **Evgueni Jak** (University of Queensland, Australia)
Lingkun Chen (Baosteel Central Research Institute, China)

10:35-11:00 ***Keynote*** **Prediction of Blast Furnace Gas Utilization Rate Based on Data Governance and Intelligent Driving**

Lei Fang[1], Yonghui Liu[1], Jue Tang[2,3], Zhifeng Zhang[2], Mansheng Chu[2,3]
1. Nanjing Iron and Steel Group Co., Ltd., China;
2. School of Metallurgy, Northeastern University, China;
3. Engineering Research Center of Advanced Technology of Low Carbon Steel, Ministry of Education, China

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 Zhang, **Hongwei Guo**, Dong Chen, Bingji Yan, Helan Liang, Hao Xu
Shagang School of Iron and Steel Technology, Soochow University, China

11:25-11:45 **Modeling and Estimation of Operational Time Delay for Hearth Thermal Response in Blast Furnace Ironmaking**

Zenghao Liu[1,2], Jiansheng He[3], Qingyun Huang[3], Xuewei Lv[1,2]
1. State Key Laboratory of Mechanical Transmissions, Chongqing University, China;
2. College of Materials Science and Engineering, Chongqing University, China;
3. School of Metallurgy and Materials Engineering, Chongqing University of Science and Technology, China

11:45-12:05 **The Role of Artificial Intelligence in Transforming Ironmaking: A Systematic Review and Adoption Strategies of Digital Evolution**

Hanwen Zhang
Sinosteel Equipment & Engineering Co., Ltd., China

A4 CO_2 Reduction and Energy Saving

13:30-15:20
Thursday, 28 August 2025, GMT+8 (Beijing)
Room A
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Yonglong Jin** (HBIS Group Research Institute, China)
Zhiyun Ji (Central South University, China)

13:30-13:55 ***Keynote*** **Enhancing Ironmaking Performance and Reducing Emissions through Tecnored Briquetting Technologies**
Anderson Agra, Christian Manera, Manoel Vítor Borel Gonçalves, Clarissa Figueiró, Lucas Fialho, Guilherme Gonçalves, Ronald Oliveira, Stephen Potter
Tecnored SA, Brazil

13:55-14:20 ***Keynote*** **Novel Processes and Techniques for Pollution Reduction and Carbon Emission Mitigation in Iron Ore Sintering**
Zhiyun Ji, Xiaohui Fan
School of Minerals Processing & Bioengineering, Central South University, China

14:20-14:40 **Co-production of Steel and Chemicals to Benefit both Sectors' Carbon Emissions**
Yunling Cao, Yankui Li, Dongfang Tian, Yu Tan
Beijing Peking University Pioneer Technology Corporation Ltd., China

14:40-15:00 **Preparation and Flame Retardant Mechanism of Steel Slag Based Flame Retardant Film**
Junxiang Guo[1,2], Jianlong Wu[1,2], Mingyuan Gu[1,2], Youhao Yin[1,2], Jirigele Qinggele[1,2], Tongbin Wang[3]
1. Shougang Group Research Institute of Technology, China;
2. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, China;
3. Shougang Jingtang Linited Iron & Steel Co., Ltd., China

15:00-15:20 **Technical Research on Slag-based Mineralisation and Co-production of High-purity Mineral Materials**
Zengqing Sun
School of Minerals Processing & Bioengineering, Central South University, China

15:20-15:35 **Tea Break**

A4 Young Scholar Presentation

15:35-17:35
Thursday, 28 August 2025, GMT+8 (Beijing)
Room A
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Xin Dai** (Shougang Research Institute of Technology, China)
Mingyin Kou (University of Science and Technology Beijing, China)

15:35-15:55 **Meso-Scale Analysis and Crystal Phase Characterization of H_2/CO Reduced Iron Bonding Mechanisms in Fluidized Bed System**

Jiehan Zhang[1], Linwei Wang[1], Shulin Wang[1], Lize Li[2], Shiyuan Li[1,3]
1. School of Energy and Environmental Engineering, University of Science and Technology Beijing, China;
2. School of Materials Science and Engineering, University of Science and Technology Beijing, China;
3. State Key Laboratory of Iron and Steel Industry Environmental Protection, China

15:55-16:15 **Induction Heating-Assisted Hydrogen Direct Reduction: Kinetic Analysis and Process Energy Evaluation**

Zeng Liang, Kejiang Li, Jianliang Zhang, Alberto N. Conejo
School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

16:15-16:35 **Effect of MgO, FeO and Basicity on Dissolution Kinetic of CaO in Blast Furnace Slag Systems**

Jasung Lee[1], Sunghee Lee[2], Youngjae Kim[1]
1. Department of Material Science & Engineering, Inha University, South Korea;
2. Low Carbon Iron and Steel Making R&D Center, POSCO, South Korea

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 You[1], Zhixiong You[1], Yuanling Zhang[3]
1. College of Material Science and Engineering, Chongqing University, China;
2. School of Automation, Chongqing University, China;
3. Baowu Group Environmental Resources Technology Co., Ltd., China

16:55-17:15 **Transient-State Three-Dimensional CFD Modelling of an Industrial-Scale Ironmaking Blast Furnace**

Jin Xie, Xiaobing Yu, Yansong Shen
School of Chemical Engineering University of New South Wales, Australia

17:15-17:35 **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, China;
2. School of Chemical Engineering, The University of Queensland, Australia

B1 Cokemaking

8:30-12:10
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Arash Tahmasebi** (University of Newcastle, Australia)
Qingbo Meng (Sinosteel Anshan Research Institute of Thermo-Energy, China)

8:30-8:55 *Keynote* **Development of High Strength Coke from Non-or-slightly Caking Coal by Pulverization and Compaction**
Sara Arakawa[1], Takashi Matsui[2], Yusuke Dohi[2], Tetsuya Yamamoto[2]
1. JFE Steel Corp., 1, Kawasaki-cho, Chuo-ku, Chiba, Japan;
2. JFE Steel Corp., 1, Kokan-cho, Fukuyama, Hiroshima, Japan

8:55-9:20 *Keynote* **Effect of Coke Quality on Tuyere Coke of 5500m^3 Blast Furnace**
Dongtao Li[1,2], Yang Liu[1,2], Xin Dai[1,2], Deying Guo[1,2], Weichun Zhu[1,2]
1. Shougang Research Institute of Technology, China;
2. Beijing Key Laboratory of Green Recyclable Process for Iron and Steel Production Technology, China

9:20-9:45 *Keynote* **Multi-scale Characterization of Coal Macerals and Development of Intelligent Coal Blending Modelling**
Shengfu Zhang[1,2], Yucen Kuang[1,2], Chenguang Bai[1,2]
1. College of Materials Science & Engineering, Chongqing University, China;
2. Chongqing Key Laboratory of Vanadium-Titanium Metallurgy & Advanced Materials, Chongqing University, China

9:45-10:05 **Reaction Mechanism of Coke Loss in Coke Dry Quenching System**
Rongguang Xu[1,2], Yuanbo Song[3], Wenbin Wang[3], Shaokui Guan[4], Hailong Huang[4]
1. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, China;
2. Research Institute of Technology, Shougang Group Co., Ltd., China;
3. Tangshan Shougang Jingtang Xishan Coking Co., Ltd., China;
4. Qian'an Zhonghua Coal Chemical Co., Ltd., China

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., China;
2. Bayuquan Branch of Angang Steel Co., Ltd., China;
3. Ansteel Iron & Steel Research Institutes, China

10:25-10:40 **Tea Break**

Chairs: **Hai Chang** (MCC Capital Engineering and Research Incorporation Limited, China)
Dongtao Li (Shougang Research Institute of Technology, China)

10:40-11:05 *Keynote* **Reactivity and Degradation Mechanism of Coke in Simulated H_2 Blast Furnace Reaction Conditions**

Behnaz Rahmatmand[1], Salman Khoshk Rish[1], Hannah Lomas[1], Lauren North[2], **Arash Tahmasebi**[1]
1. BHP Centre for Sustainable Steelmaking Research, Newcastle Institute for Energy and Resources (NIER), University of Newcastle, Australia;
2. BHP, Australia

11:05-11:30 *Keynote* **Key Structural and Property Differences Between Stamping-Charged and Top-Charged Coke**

Kejiang Li[1], Feng Zhou[1], Jianliang Zhang[1,2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Chemical Engineering, The University of Queensland, Australia

11:30-11:50 **Analysis and Consideration on Quality and Efficiency Optimization of CDQ Based on Full Lifecycle Management**

Xiushi Gan[1,2], Jian Wang[3], Haidan Wang[4], Chao Wang[1,2], Shibin Hou[3], Daichao Hu[1,2]
1. State Key Laboratory of Metallic Materials for Marine Equipment and Applications, China;
2. Ansteel Iron & Steel Research Institutes, China;
3. General Coking Plant of Angang Steel Co., Ltd., China;
4. Angang Steel Company Limited, China

11:50-12:10 **The Development Direction of Chinese Coking Industry Under the New Situation**

Lie Xu[1], **Jian Kang**[2]
1. Huatai Yongchuang (Beijing) Tech. Co., Ltd., China;
2. Anshan Huatai Environmental Energy Engineering Technology Co., Ltd., China

B2 Cokemaking

13:30-15:20
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Lauren Williamson** (CSIRO Mineral Resources, Australia)
Kejiang Li (University of Science and Technology Beijing, China)

13:30-13:55 *Keynote* **Quantifying Biochar Interactions with Coal for Coke Making**
Lauren Williamson, Richard Sakurovs, Aedita Crouch
CSIRO Mineral Resources, Queensland Centre for Advanced Technologies, Australia

13:55-14:20 *Keynote* **Quantitative Analysis and Optimisation of Coke Microstructure**
Edward Bissaker[1], David Jenkins[1], Arash Tahmesebi[1], Bishnu Lamichhane[2], Merrick Mahoney[1]
1. BHP Centre for Sustainable Steelmaking, University of Newcastle, Australia;
2. School of Information and Physical Sciences, University of Newcastle, Australia

14:20-14:40 **Research and Application of Repairing Technology of Large Blast Furnace Hearth Lining**
Fuming Zhang[1], Guoli Jia[2], Yong Zhang[3], **Manxiang Zhao**[2], Kexin Jiao[4]
1. Shougang Group Co., Ltd., China;
2. Beijing Shougang Co., Ltd, China;
3. Research Institute of Technology of Shougang Group Co., Ltd., China;
4. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

14:40-15:00 **Coal Coking Correlation Performance and Coal Blending Coking**
Qi Wang[1], Wenlin Xue[2], Huan Cheng[3], Wenjia Hu[3], **Weibo Tie**[1], Pei Wang[1]
1. College of Materials and Metallurgy, University of Science and Technology Liaoning, China;
2. Today Think Tank Energy Limited, China;
3. College of Chemical Engineering, North China University of Science and Technology, China

15:00-15:20 **Properly Optimizing the 1/3 Coke Coal Ratio is the Key to Achieving Economic and Efficient Coke Production**
Luying Xiao[1,2], Qingbin Yang[3], **Huan Cheng**[4], Fei Liao[4], Yinghua Liang[4], Yuting Hao[4]
1. College of Metallurgy and Energy, North China University of Science and Technology, China;
2. College of Science, North China University of Science and Technology, China;
3. Hebei Coal & Coking Technology Innovation Center, Tangshan Shougang Jingtang Xishan Coking Co., Ltd., China;
4. College of Chemical Engineering, North China University of Science and Technology, China

15:20-15:35 **Tea Break**

B2 Blast Furnace Ironmaking - Maintenance and Campaign Life

15:35-17:25
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Haibin Zuo** (University of Science and Technology Beijing, China)
Shengfu Zhang (Chongqing University, China)

15:35-16:00 *Keynote* **Analysis of Solid Flow and Stress Field in Hydrogen-Enriched Blast Furnace Operation**
Dereje Degefa Geleta, Joonho Lee
Department of Materials Science and Engineering, Korea University, South Korea

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, China

16:25-16:45 **Blast Furnace Longevity and Low-Carbon Energy-Saving Technology**
Zhifeng Hao
Baotou Andexinai New Material Co., Ltd., China

16:45-17:05 **Improvement of Production Index of Baosteel No. 4 BF after Mid-term Maintenance**
Yulong Song
Ironmaking Plant, Baoshan Iron & Steel Co., Ltd., China

17:05-17:25 **Investigation of The Damaged Hot Blast Furnace Shell in 5500m^3 Blast Furnace**
Jian Sun[1,3], Fuming Zhang[2], Kai Wang[2], Yong Zhang[1,3], Jianlong Wu[1,3], Wei Wang[1,3]
1. Shougang Group Research Institute of Technology, China;
2. Shougang Group Co., Ltd., China;
3. Beijing Key Laboratory of Green Recyclable Process for Iron & Steel Production Technology, China

B3 Blast Furnace Ironmaking - Maintenance and Campaign Life

8:30-12:05
Thursday, 28 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Tomas Da Rocha Leonardo** (POSTECH, South Korea)
Xin Jiang (Northeastern University, China)

8:30-8:55 *Keynote* **Mechanical Properties and Reduction Behavior of Self-Reducing Briquettes with Biomass Treated in Different Temperatures**

Paula Maria Gomes Cunha Leão[1], Taís Birchal Zicker[1], Nícolas Henrique Alves Ferreira[1], Augusta Cerceau Isaac Neta[1], José Domingos Ardisson[2], **Maurício Covcevich Bagatini**[1]
1. Laboratory of Ironmaking Processes, Department of Metallurgical and Materials Engineering, Federal University of Minas Gerais (UFMG), Brazil;
2. Laboratory of Mössbauer Spectroscopy, Department of Nanotechnology, Nuclear Technology Development Center (CDTN/CNEN), Brazi

8:55-9:20 *Keynote* **Typical Problems and Countermeasures Faced by the Application of Biomass in Blast Furnace Ironmaking**

Dalong Guo[1], Kangzheng Meng[2], **Rufei Wei**[2], **Hongming Long**[2]
1. Beijing Beike Guowei Manufacturing Technology Co., Ltd., China;
2. School of Metallurgical Engineering, Anhui University of Technology, China

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., China

9:40-10:00 **The Application of Carbon Composite Bricks in the Blast Furnace Hearth and Bottom**

Minghuan Li[1], **Yifei Wang**[2]
1. Henan Winna Industrial Group Co., Ltd., China;
2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

10:00-10:20 **Development of Mathematical Optimization Models of Blast Furnace System**

Yan Zhang[1,2], Haiyan Zheng[1,2], Zhen Wang[1,2], Weiling Zhang[2], Xin Jiang[1,2], Qiangjian Gao[1,2], Fengman Shen[1,2]
1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, China;
2. School of Metallurgy, Northeastern University, China

10:20-10:35 **Tea Break**

Chairs: **Jialong Yang** (Anhui University of Technology, China)
Wei Wang (Wuhan University of Science and Technology, China)

10:35-11:00 ***Keynote*** **Application of High-MgO Pellets as Blast Furnace Iron-containing Burden**

Leonardo Tomas da Rocha[1], Seongkyu Cho[1,3], Dohyeon Kim[1], Hwanjae Kim[2], Jung Ah Kim[3], Sunghee Lee[3], Sung-Mo Jung[1]
1. Graduate Institute of Ferrous & Eco Materials Technology (GIFT), POSTECH, South Korea;
2. POSCO Ironmaking Department, South Korea;
3. POSCO Ironmaking Research Group - Technical Research Laboratories, South Korea

11:00-11:25 ***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**

Qingbo Meng[1,2], Zhiyong Zhang[2], Xiuli Xu[1], Lidong Gao[2], Yu Jiang[1]
1. Sinosteel Anshan Research Institute of Thermo-Energy Co., Ltd., China;
2. Henan Iron and Steel Group Co., Ltd., China

11:25-11:45 **Research and Application of Intelligent Precast Linings for Main Trough of Blast Furnace**

Shengli Tong[1], **Peilin Li**[1], Zhanmin Wang[2], Minghui Li[3], Haining Jia[4], Bing Chang[1]
1. Jiangsu Baoyirui New Materials Co., Ltd., China;
2. Sinosteel Luonai Materials Technology Co., Ltd., China;
3. Anhui University of Technology, China;
4. Baosteel Zhanjiang Iron & Steel Co., Ltd., China

11:45-12:05 **The Relationship Between Tuyere Materials and Blast Furnace Conditions**

Yuansheng Wang[1], Qingxi Zhang[2], Junfang Bao[3], Huawei Zheng[2], Zhao Song[2], Chen Gong[2]
1. R&D Center of Wuhan Iron & Steel Co., Ltd., Baosteel Central Research Institute, China;
2. Iron Plant, Wuhan Iron & Steel Co., Ltd., China;
3. Research Institute of Baoshan Iron and Steel Co., Ltd., China

B4 CO_2 Reduction and Energy Saving

13:30-15:20
Thursday, 28 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Alfredo Sarkis** (Ineral Development Center, VALE S.A., Brasil)
Mao Chen (Pangang Group Research Institute Co., Ltd., China)

13:30-13:55 ***Keynote*** **Construction of the Carbon-loop Metallurgy Technical Route for Iron & Steel Making Process**
Hengdi Ye, **Feng Yang**
Zhongye Changtian International Engineering Co., Ltd., China

13:55-14:20 ***Keynote*** **Resource Utilization of Steel Slag of Sha Steel Based on Carbon Sequestration**
Zuoqiao Zhu[1], Junjie Ma[1], Haiwei Yao[1], Rui Mao[2]
1. Shagang Iron & Steel Research Institute of Jiangsu Province, China;
2. Shagang Steel of Jiangsu Province, China

14:20-14:40 **Study of Alternative Generation of Energy in Belt Conveyors (Chute) for Iron Ore**
Alfredo Sarkis
Mineral Development Center, VALE S.A., Brasil

14:40-15:00 **Different Options of Stove Modernization using Innovative Top Combustion Stove of Kalugin Design**
Anton Subbotin, Sergey Ivlev, Boris Prokofyev, Marina Kalugina, Yury Murzin
KALUGIN JSC, Russia

15:00-15:20 **Application of Energy-saving Technical Standard of Oxygen-enriched Combustion in Iron-making**
Guanjun Chen[1], Maolin Sun[2], Shiliang Chu[3], Pengfei Ji[3], Weibin Duan[2]
1. Shougang Research Institute of Technology, China;
2. Beijing Shougang Co., Ltd., China;
3. Shougang Jingtang United Iron & Steel Limited Corp., China

15:20-15:35 **Tea Break**

B4 Young Scholar Presentation

15:35-17:35
Thursday, 28 August 2025, GMT+8 (Beijing)
Room B
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Lili Jiang** (Lanzhou University of Technology, China)
Lulu Jiao (University of Science and Technology Beijing, China)

15:35-15:55 **Interfacial Behavior in the Reduction Process of Iron Ore Pellet by CH_4-H_2**
Yushan Bu[1], Kejiang Li[1], Jianliang Zhang[1,2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Chemical Engineering, The University of Queensland, Australia

15:55-16:15 **An Investigation on Deep-Bed Sintering with Hydrogen-Rich Gas Injection: Synergistic Roles of Steam and Oxygen-Enriched Conditions**
Rui Wang[1,2], Junjie Zeng[1,2], Chao Fang[1,2], Wangping Wu[1,2], Yuxiao Xue[1,2], Xuewei Lv[1,2], Jian Xu[1,2]
1. College of Materials Science and Engineering, Chongqing University, China;
2. Chongqing Key Laboratory of Vanadium-Titanium Metallurgy and New Materials, Chongqing University, China

16:15-16:35 **Impact of Fuel Combustion Reactivity on CO Emissions and Combustion Efficiency in Sintering: A Numerical Simulation Study**
Zhen Li[1], Zhengjian Liu[1], Jianliang Zhang[1], Yaozu Wang[2,3]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Intelligence Science and Technology, University of Science and Technology Beijing, China;
3. Institute of Artificial Intelligence, University of Science and Technology Beijing, China

16:35-16:55 **Progress of Hydrogen Based Direct Reduction Process**
Qianqian Duan[1], Guanghui Li[1], Jun Luo[2]
1. School of Minerals Processing & Bioengineering, Central South University, China;
2. College of Chemistry and Chemical Engineering, Central South University, China

16:55-17:15 **How Defect Evolution in Iron Oxides Modulates Iron Morphology**
Qinghui Wu, Shuai Wang, Jian Xu
College of Materials Science and Engineering, Chongqing University, China

17:15-17:35 **Development and Application of Key Technology of Copper-Steel Composite Cooling Stave**
Songjian Shan[1], Jianliang Zhang[1], Yanbing Zong[1], Ziping Guo[2], Dongdong Liu[2], Xiaodong Ji[2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. Heibei Wanfeng Metallurgical Equipment Co., Ltd., China

C1 Blast Furnace Ironmaking - Process and Operation

8:30-12:05
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Tom Honeyands** (The University of Newcastle, Australia)
Fuming Zhang (Shougang Group Co., Ltd., China)

8:30-8:55 ***Keynote*** **A Method for Determining the Blast Furnace Minimum Coke Rate**
D. (Frank) Huang, Marcelo Andrade, Dave White
ArcelorMittal USA Research LLC, USA

8:55-9:20 ***Keynote*** **Research and Application of Clean, High-Efficiency and High Blast Temperature**
Fuming Zhang[1], Fuchao Li[2], Naiyao Li[3], Jian Sun[4], Guanpeng Li[2], Kunbao Yin[2]
1. Shougang Group Co., Ltd., China;
2. Zhengzhou Annec Industrial Co., Ltd., China;
3. Beijing Shougang International Engineering Technology Co., Ltd., China;
4. Technical Research Institute of Shougang Group Co., Ltd., China

9:20-9:40 **Spotlight on Na_2O and K_2O Behaviour in Blast Furnace Operation**
Maarten Geerdes[1], Peter Warren[2]
1. Geerdes Advies, The Netherlands;
2. Binding Solutions Ltd., UK

9:40-10:00 **Overview on the Behavior of Sodium Silicate Compound in Blast Furnace Process Environment**
Marcus Botelho[1], Fábio Silva[1], Augusto de Sa[1], **Vinícius Oliveira**[1], Qingshi Song[2], Honggang Wang[2], Haibin Zuo[3], Wenguo Liu[3]
1. Ferrous Technology Center (CTF), VALE S.A., Brasil;
2. VALE Metals Co., Ltd., China;
3. State Key Laboratory of Advanced Metallurgy, University of Science of Technology Beijing, China

10:00-10:20 **Development and Application of High-Performance Molded Carbon Blocks for Large Blast Furnace**
Tongsheng Wang
Wisdri Wupeng (Handan) New Lining Material Co., Ltd., China

10:20-10:35 **Tea Break**

Chairs: **Jianwei Zhu** (Ansteel Iron & Steel Research Institutes, China)
Zhongping Zou (CISDI Engineering Co., Ltd., China)

10:35-11:00 ***Keynote*** **Blast Furnace Modelling and Applications: Review and Outlook**
Yansong Shen
School of Chemical Engineering, University of New South Wales, Australia

11:00-11:25 ***Keynote*** **Theory and Practice of High Lump Ratio Operation in Blast Furnace**
Yangsheng Song[1], Qi Wang[2]
1. Technical Marketing and R&D, Iron Ore, Rio Tinto, Australia;
2. School of Materials and Metallurgy, University of Science and Technology Liaoning, China

11:25-11:45 **Influence of Harmful Elements on the Metallurgical Properties of V-Ti Burden for Blast Furnace**
Xiaosen Dong[1,2], Kui Zheng[1], Peng Hu[1,2], Jian Xu[2], Hongen Xie[1]
1. State Key Laboratory of Vanadium and Titanium Resources Comprehensive Utilization, Pangang Group Research Institute Co., Ltd., China;
2. College of Materials Science and Engineering, Chongqing University, China

11:45-12:05 **Research and Application of Longevity Technology in High Heat Load Areas of Blast Furnace**
Yingjie Cao, Siqing Qi, Chunlong Wang, **Yanbiao Chen**
Capital Engineering & Research Incorporation Ltd., China

C2 Blast Furnace Ironmaking - Process and Operation

13:30-17:30
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Maarten Geerdes** (Geerdes Advies, The Netherlands)
Ping Du (Jiangsu Shagang Group, China)

13:30-13:55 ***Keynote*** **Towards Lower Coke Rates in Blast Furnaces**
Maarten Geerdes[1], Ron Molenaar[2], **Dimas Andrade**[3]
1. Geerdes Advies, The Netherlands;
2. Rolino, The Netherlands;
3. Danieli-Corus, The Netherlands

13:55-14:20 ***Keynote*** **Shagang 5800 m^3 Blast Furnace Optimization with Plate Cooling System**
Ping Du[1], Hongchao Wei[1], Ming Lei[1], Maarten Geerdes[2], Dimas Andrade[2]
1. Jiangsu Shagang Group, China;
2. Danieli-Corus, The Netherlands

14:20-14:45 ***Keynote*** **Consideration on Carbon Saturation R in Hot Metal of Blast Furnace**
Xiaohan Xu
Beijing Real Nonmetallic Materials Co., Ltd., China

14:45-15:05 **Blast Furnace Pressure Variability: Cohesive Zone Effects and Gas Flow Dynamics**
Roberto Abreu[1], Dimas Andrade[1], **Maarten Geerdes**[2]
1. Danieli-Corus, The Netherlands;
2. Geerdes Advies, The Netherlands

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 Meng[1], Keliang Pang[1], Fujun Liu[2], Minmin Sun[1], Youzhi Zheng[1], Zhiyuan Gu[1], Haotian Wu[1], Chaoran Wan[1]
1. Ansteel Beijing Research Institute Co., Ltd., China;
2. Ansteel Iron & Steel Research Institute, China

15:25-15:40 **Tea Break**

Chairs: **Yongxiang Yang** (Delft University of Technology, The Netherlands)
Xuesong Zhang (Shougang Research Institute of Technology, China)

15:40-16:05 *Keynote* **Academic – Industry Cooperation in Fundamental Research on Ironmaking for the Dutch Steelmaking Industry in the 21st Century**

Yongxiang Yang[1], Neslihan Dogan[1], Jan van der Stel[2]
1. Department of Materials Science and Engineering, Delft University of Technology, The Netherlands;
2. Research and Development, Tata Steel, The Netherlands

16:05-16:30 *Keynote* **Qisunny Methodology: A Powerful Tool of Evaluating Ore-Coke Coupling Metallurgical Performance and Linking up with BF Process**

Qi Wang[1], Yangsheng Song[2], Tingle Li[1], Tim Evans[2]
1. School of Materials and Metallurgy, University of Science and Technology Liaoning, China;
2. Technical Marketing, Rio Tinto Iron Ore, Australia

16:30-16:50 **Behavior of Iron Species during Reductive Soda-Ash Roasting of Bayan Obo Tailings**

Zhong Ai[1], Guanghui Li[1], Mingjun Rao[1], Zhao Yang[1,2], Guoying Yan[2], Dan Wu[2], Zhongshuai Jia[2]
1. School of Minerals Processing & Bioengineering, Central South University, China;
2. Mining Research Institute of Baotou Steel (Group) Corp., China

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, China

17:10-17:30 **Numerical Simulation Study on the Effects of Different Blowing Temperatures and Volumes on Pulverized Coal Combustion**

Lili Jiang[1], Chunlin Yang[1], Xiaoxu Ma[1], Bin Yang[2], Jianfa Jing[1], Zhengbiao Hu[1]
1. School of Materials Science and Engineering, Lanzhou University of Technology, China;
2. Gansu Jiu Steel Group Hongxing Iron & Steel Co., Ltd., China

C3 Blast Furnace Ironmaking - Process and Operation

8:30-10:20
Thursday, 28 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Dennis Lu** (ArcelorMittal Global RDEC & RDSF, USA)
Jian Pan (Central South University, China)

8:30-8:55 *Keynote* **Iron Ore-Petcoke Briquettes Development for Blast Furnace Application**

Beatriz Fausta Gandra[1], Arthur Felipe Lino Oliveira[1], Gerson Evaristo de Paula Junior[1], Maurício Covcevich Bagatini[2], Eduardo Osório[3]
1. Usinas Siderúrgicas de Minas Gerais S/A - Usiminas, Ironmaking Research and Development Team, Research and Development Center, Brazil;
2. Federal University of Minas Gerais (UFMG), Laboratory of Ironmaking Processes, Department of Metallurgical and Materials Engineering, Brazil;
3. Federal University of Rio Grande do Sul (UFRGS), Iron and Steel Making Laboratory (Lasid/PPGE3M), Brazil

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 Zhang[1], Jiating Rao[2], Cheng Pan[2], **Jian Xu**[1]
1. College of Materials Science and Engineering, Chongqing University, China;
2. Pangang Group Research Institute Co., Ltd., China

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., China

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, China;
2. Ansteel Iron & Steel Research Institutes, China;
3. Coking Plant of Angang Steel Co., Ltd., China;
4. Manufacturing Management Department of Angang Steel Co., Ltd., China

10:00-10:20 **Co-gasification Characteristics of Coke Blended with Hydro-char and Pyro-char from Bamboo**

Minmin Sun[1], Keliang Pang[1], Kejiang Li[2], Youzhi Zheng[1], Xinyang Meng[1], Jianliang Zhang[2]
1. Ansteel Beijing Research Institute Co., Ltd., China;
2. School of Metallurgy and Ecological Engineering, University of Science and Technology Beijing, China

15:20-15:35 **Tea Break**

C3 Direct Reduction and Smelting Reduction

10:35-12:05
Thursday, 28 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Xiaodong Ma** (The University of Queensland, Australia)
Mingjun Rao (Central South University, China)

10:35-11:00 ***Keynote*** **Electrical Conductivity Measurement Relevant to DRI Smelting Slags**
Xuefan Zhou[1], Zhiming Shi[1], Ruwan Brell[2], Sheng Chew[2], Tim Evans[1], **Xiaodong Ma**[1]
1. Julius Kruttschnitt Mineral Research Centre, Sustainable Minerals Institute, The University of Queensland, Australia;
2. Future Technologies, BlueScope, Australia

11:00-11:25 ***Keynote*** **Bottlenecks and Solutions for Gas-Based Direct Reduction Development in China**
Yonglong Jin
Institute of Strategy Research, HBIS, China

11:25-11:45 **Tecnored – A Sustainable Low-Carbon Technology for the Steelmaking Industry**
Manoel Vítor Borel Gonçalves, Anderson Agra, Clarissa Figueiró, Christian Manera, Lucas Fialho, Guilherme Gonçalves, Ronald Oliveira, Stephen Potter
Tecnored SA, Brazil

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, China

C4 Direct Reduction and Smelting Reduction

13:30-15:20
Thursday, 28 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Youngjae Kim** (Inha University, South Korea)
Haiyan Zheng (Northeastern University, China)

13:30-13:55 *Keynote* **Computational Study of a Direct Reduction Furnace with Hydrogen-rich Feed Gas**
Henrik Saxén[1], Yandong Zhai[1], Carl Haikarainen[1], Marwa Mortadi[1], Lei Shao[2]
1. Process and Systems Engineering, Åbo Akademi University, Finland;
2. School of Metallurgy, Northeastern University, China

13:55-14:20 *Keynote* **Phase Transformations in the Reduction on Sillico-Ferrite of Calcium and Aluminum**
Haiwei An[1], Hao Guo[1], **Xin Jiang**[2], Yanbo Feng[1], Degang Wang[1], Fengman Shen[2]
1. Capital Engineering & Research Incorporation Limited, China;
2. Northeastern University, China

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 Medeiros[1,2], Jose Adilson de Castro[2]
1. Companhia Siderúrgica Nacional (CSN), Brazil;
2. Graduate Program on Metallurgical Engineering, Federal Fluminense University, Brazil

14:40-15:00 **A Three-interface Shrinking Core Model for Reduction of Hematite by Hydrogen at Moderate Temperature**
Devendra Nama[1], Sujan Hazra[2], Samik Nag[2], and Rahul Sarkar[1]
1. Department of Materials Science and Engineering, Indian Institute of Technology Kanpur, India;
2. Ironmaking Research Group, Tata Steel Limited, India

15:00-15:20 **Process Simulation of Direct Reduced Iron Production with Carbon Dioxide Capture via Calcium Looping**
Chuanbao Luan[1], Haichuan Xu[2], Pengjun Cui[1], Liang Zeng[1]
1. School of Chemical Engineering and Technology, Tianjin University, China;
2. Linyi Steel Industry Collaborative Innovation Center, China

15:20-15:35 **Tea Break**

C4 Young Scholar Presentation

15:35-17:35
Thursday, 28 August 2025, GMT+8 (Beijing)
Room C
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Giulio Medeiros** (Companhia Siderúrgica Nacional (CSN), Brazil)
Yifan Chai (Inner Mongolia University of Science and Technology, China)

15:35-15:55 **Application of Energy Saving Smelting Technology with Scrap Steel in No.6 Blast Furnace of WISCO**
Qingxi Zhang, **Shanshan Yu**, Xiangcai Li, Yongbo Li, Shuai Zhao
Wuhan Iron and Steel Co., Ltd., China

15:55-16:15 **3D Numerical Modelling of Heat and Mass Transfer for Sustainable Ironmaking in the Blast Furnace**
Ayush Badaya, Govind S Gupta
Department of Materials Engineering Indian Institute of Science (IISc), India

16:15-16:35 **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, Finland;
2. State Key Laboratory of Advanced Special Steel, Shanghai Key Laboratory of Advanced Ferrometallurgy, School of Materials Science and Engineering, Shanghai University, China

16:35-16:55 **Numerical Study on the Injection of Pre-reduced Iron Ore Fines into a Blast Furnace**
Ting Shi, Yuting Zhuo, Yansong Shen
School of Chemical Engineering, University of New South Wales, Australia

16:55-17:15 **Molecular Insights into Bituminous Coal Pyrolysis: Bridging TG-MS Experiments and ReaxFF MD Simulations**
Zhen Sun[1], Kejiang Li[1], Jianliang Zhang[1,2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Chemical Engineering, The University of Queensland, Australia

17:15-17:35 **A New Methodology for Multi- criteria Assessment of Coke's Metallurgical Behavior**
Feng Zhou[1], Xiangyu He[1], Kejiang Li[1], Jianliang Zhang[1,2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Chemical Engineering, The University of Queensland, Australia

D1 Hydrogen (H_2)-based Ironmaking

8:30-12:10
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room D
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Ko-ichiro Ohno** (Kyushu University, Japan)
Yansong Shen (University of New South Wales, Australia)

8:30-8:55 *Keynote* **Effect of H_2 Mixed Gas on the Swelling Behavior of Iron Ore Pellets**
Ko-ichiro Ohno[1], Tatsuya Kon[1], Keisuke Fujihara[1], Yoshiko Nakahara[2], Kota Moriya[2], Sumito Ozawa[2]
1. Dept. of Materials, Graduate School of Eng., Kyushu University, Japan;
2. Research Dept. of Carbon Neutral Process, JFE Steel Corporation, Japan

8:55-9:20 *Keynote* **Practice Analysis of COG-Based Shaft Furnace Process**
Fengman Shen[1,2], Yan Zhang[1], Shuo Wang[1], Xiangyang Pan[1], Weiling Zhang[1], Haiyan Zheng[1,2], Xin Jiang[1,2], Jianqiang Gao[1,2]
1. Key Laboratory for Ecological Metallurgy of Multimetallic Mineral (Ministry of Education), Northeastern University, China;
2. School of Metallurgy, Northeastern University, China

9:20-9:40 **Anglo American Premium Iron Ore Characterizations for High-Efficiency Blast Furnace and DRI Operations**
David Lin[1], Italian Mashego[2], Jacques Muller[2], Phindile Mbele[2]
1. Anglo American, Marketing, Singapore;
2. Anglo American, Technical Solutions - Value in Use, South Africa

9:40-10:00 **Low Temperature Reduction Disintegration Mechanism of Self-Fluxing Pellets in a Hydrogen Reduction Shaft Furnace**
Koki Momma, Taichi Murakami
Graduate School of Environmental Studies, Tohoku University, Japan

10:00-10:20 **Study on Characteristics and Kinetic Analysis of Direct Reduction of Pellet Powder with Ammonia**
Li Li, Hongwu Li, Yuejun Liu, Jianting Lin, Xianchun Li
School of Chemical Engineering, University of Science and Technology Liaoning, China

10:20-10:35 **Tea Break**

Chairs: **Pasquale Cavaliere** (University of Salent, Italy)
Peimin Guo (Central Iron and Steel Research Institute Co., Ltd., China)

10:35-11:00 *Keynote* **GOD Control in Multi-Stage Hydrogen Reduction of Limonite Ore**

Seong-Jin Kim[1], Dohyeon Kim[1], Seongkyu Cho[2], Leonardo Tomas da Rocha[1], Sung-Mo Jung[1]
1. Graduate Institute of Ferrous and Eco Materials Technology (GIFT), Pohang University of Science & Technology (POSTECH), South Korea;
2. Ironmaking Research Group, POSCO Technical Research Labs, South Korea

11:00-11:25 *Keynote* **Hydrogen-Based Shaft Furnace Pellets Preparation and High-Efficiency Reduction Technology**

Chenmei Tang, **Jian Pan**, Deqing Zhu, Zhengqi Guo, Congcong Yang, Siwei Li
School of Minerals Processing and Bioengineering, Central South University, China

11:25-11:50 *Keynote* **Digital Twin Comparison of CO and Hydrogen for Direct Reduced Iron Production**

Pasquale Cavaliere
University of Salento, Italy

11:50-12:10 **Hydrogen-Rich Fuels Injection Effects on Furnace Pressure Drop in 5500m^3 Blast Furnace**

Xiangfeng Cheng[1], Jirigele Qinggele[1], Fuming Zhang[2], Guilin Wang[1], Chong Shao[1]
1. Shougang Research Institute of Technology, China;
2. Chief Engineer Office of Shougang Group Co., Ltd., China

D2 Hydrogen (H_2)-based Ironmaking

13:30-17:30
Wednesday, 27 August 2025, GMT+8 (Beijing)
Room D
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Zulfiadi Zulhan** (Institut Teknologi Bandung, Indonesia)
Deqing Zhu (Central South University, China)

13:30-13:55 ***Keynote*** **Findings from Laboratory-Scale Electric Smelting Furnace Experiments**
Tom Honeyands[1], Craig Garlick[1], Tejbir Singh[1], Khadijeh Paymooni[1], Nathan Barrett[1], Tuyen Nguyen[1], Damien O'Dea[2]
1. BHP Centre for Sustainable Steelmaking Research, The University of Newcastle, Australia;
2. BHP Marketing Sustainability, Australia

13:55-14:20 ***Keynote*** **Fundamental and Practical Aspects of Hydrogen Reduction of Iron Ore**
Liming Lu
CSIRO Mineral Resources, 1 Technology Court, Australia

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 Pena[3], Victor Padula[4]
1. VALE S.A., Iron Ore Technical Manager of Mineral Technology, Brazil;
2. VALE S.A., Iron Ore Mineral Processing Department Team, Brazil;
3. VALE S.A., Iron Ore General Management of Development of Technical Solutions for Mineral Processing, Brazil;
4. VALE S.A., Iron Ore Mineral Processing Department Director, Brazil

14:40-15:00 **UNSW Shen Lab Blast Furnace Modelling: Advanced CFD Blast Furnace Model and Platform Application - High Ratio of Pellet Operation**
Ziguang Zhao, Xiaobing Yu, Yansong Shen
Process Modelling and Optimisation of Reacting Flow, School of Chemical Engineering, University of New South Wales, Australia

15:00-15:20 **Blast Furnace Smelting with Injection of Coal Gasification Products**
Oleksii Merkulov[1,2]
1. Suzhou SITRI Welding Technology Research Institute Co., Ltd., China;
2. Iron and Steel Institute National Academy of Sciences of Ukraine, Ukraine

15:20-15:35 **Tea Break**

Chairs: **Feng Wang** (Central Iron and Steel Research Institute Co., Ltd., China)
Jian Xu (Chongqing University, China)

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

16:00-16:25 *Keynote* **DRI Carbon Content Control Measures for Hydrogen-Based Shaft Furnace Based on Experiment and Numerical Simulation**

Shaofeng Lu[1], Yaozu Wang[2,3], Jianliang Zhang[1], Qiang Cheng[1], Jiaqi Li[4], **Zhengjian Liu**[1]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Intelligence Science and Technology, University of Science and Technology Beijing, China;
3. Institute of Artificial Intelligence, University of Science and Technology Beijing, China;
4. School of Advanced Engineering, University of Science and Technology Beijing, China

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 Group Co., Ltd., China

16:50-17:10 **Effect of Agglomeration Structure on the Direct Reduction of Iron Oxides**

Pasquale Cavaliere
University of Salento, Italy

17:10-17:30 **Ab Initio Molecular Dynamics with Enhanced Sampling for Reduction Mechanism of FeO Surfaces**

Chunhe Jiang[1], Kejiang Li[2], Jianliang Zhang[2,3]
1. Technical Support Center for Prevention and Control of Disastrous Accidents in Metal Smelting, University of Science and Technology Beijing, China;
2. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
3. School of Chemical Engineering, The University of Queensland, Australia

D3 Hydrogen (H_2)-based Ironmaking

8:30-12:05
Thursday, 28 August 2025, GMT+8 (Beijing)
Room D
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Ahmed Abdelrahim** (University of Oulu, Finland)
Zhengjian Liu (University of Science and Technology Beijing, China)

8:30-8:55 ***Keynote*** **Influence of Hydrogen Injection on Basic Iron Ore Sinter Reduction at Blast Furnace Wall Conditions**
Ahmed Abdelrahim[1], Aki Koskela[1], Mikko Iljana[1], Carmen van der Kroon[2], Timo Fabritius[1]
1. Process Metallurgy Research Unit, University of Oulu, Finland;
2. Tata Steel Europe, The Netherlands

8:55-9:20 ***Keynote*** **Comprehensive Utilization Strategies and Research Progress of Nickeliferous Laterite Resources**
Jing Chen, Yuqi Zhong, Jing Wang, Jinliang Xiong, Xinyue Wu, **Mingjun Rao**
School of Minerals Processing & Bioengineering, Central South University, China

9:20-9:40 **Experimental Study on Biochar Gasification by Carbon Dioxide to Produce Reducing Gas for Smelting**
Wei Wang, Jirigele Qinggele, Xiaoran Song
Research Institute of Technology, Shougang Group Corporation, China

9:40-10:00 **Carburization Kinetics of the Fe by CO-H_2 Gas Mixture at 1073K**
Dahan Jo[1], Youngjae Kim[1], Hyuk Kim[2]
1. Department of Material Science & Engineering, Inha University, South Korea;
2. R&D Strategy Planning Group, Hyundai Steel, South Korea

10:00-10:20 **H_2 Reducibility and Sticking Behaviour of Australian Ores in H_2 Fluidized Bed Reduction**
Rou Wang[1], Matt Cole[2], Priscilla Tremain[2], Tom Honeyands[1]
1. BHP Centre for Sustainable Steelmaking Research, School of Engineering, The University of Newcastle, Australia;
2. Priority Research Centre for Frontier Energy Technologies & Utilisation, The University of Newcastle, Australia

10:20-10:35 **Tea Break**

Chairs: **Nathan Barrett** (The University of Newcastle, Australia)
Yaowei Yu (Shanghai University, China)

10:35-11:00 ***Keynote*** **Softening and Melting Behaviour of Ferrous Burdens in Gas Compositions Representative of Hydrogen Enriched Blast Furnace Operation**

Nathan Barrett[1], Evan Copland[1], Damien O'Dea[2], Tom Honeyands[1]
1. BHP Centre for Sustainable Steelmaking Research, School of Engineering, The University of Newcastle, Australia;
2. BHP, Australia

11:00-11:25 ***Keynote*** **Emission Abatement Potential of DRI Shaft Furnace Integrated with ESF-BOF Process Route**

Khadijeh Paymooni[1], Craig Garlick[1], Damien O'Dea[2], Andrew Gadd[2], **Tom Honeyands**[1]
1. BHP Centre for Sustainable Steelmaking Research, The University of Newcastle, Australia;
2. BHP Marketing Sustainability, Australia

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 Edmond[1], Rainer Klock[2], Hauke Bartusch[3], Bartosz Smaha[4]
1. Primetals Technologies Ltd., UK;
2. Thyssenkrupp AT.PRO tec GmbH, Germany;
3. VDEh-Betriebsforschungsinstitut GmbH, Germany;
4. Thyssenkrupp Steel Europe AG, Germany

11:45-12:05 **CFD Study of Hydrogen Injection through Tuyeres into Ironmaking Blast Furnaces**

Yuting Zhuo
University of New South Wales, Australia

D4 Hydrogen (H_2)-based Ironmaking

13:30-15:20
Thursday, 28 August 2025, GMT+8 (Beijing)
Room D
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Leili Tafaghodi** (McMaster Universit, Canada)
Lei Guo (University of Science and Technology Beijing, China)

13:30-13:55 *Keynote* **An Innovative Hydrogen Reduction Method for Manufacturing Advanced Iron-Based Materials**
Min Gan
School of Minerals Processing & Bioengineering, Central South University, China

13:50-14:15 *Keynote* **Hydrogen-Based Direct Reduction of Industrial Hematite Pellets: An Experimental Investigation and Reaction Modeling**
Leili Tafaghodi
McMaster University, Canada

14:15-14:40 *Keynote* **Progress of Fuel Injection Technology in Blast Furnace Ironmaking: A Review**
Dingwen Wu[1], Jianliang Zhang[1], **Runsheng Xu**[1], Suqin Li[1], Yuan Xin[2], Xian Jia[2], Baoliang Li[2]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. Iron Former Management Center, Jingye Iron and Steel Company Limited, China

14:40-15:00 **Effects of Hydrogen-Rich Gas Injection on Blast Furnace Smelting and Existing Problems Discussion**
Shuhui Zhang, Qing Lv, Ran Liu, Chenchen Lan, Yana Qie, Jianpeng Li
College of Metallurgy and Energy, North China University of Science and Technology, China

15:00-15:20 **Study on the Sticking Phenomenon in Fluidized Ironmaking and Gas-Based Shaft Furnace Ironmaking Processes**
Lei Guo, Kaidi Mu, Haojie Zheng, Zhancheng Guo
State Key Laboratory of Advanced Metallurgy, University of Science and Technology Beijing, China

15:20-15:35 **Tea Break**

D4 Biomass Metallurgy

15:35-17:35
Thursday, 28 August 2025, GMT+8 (Beijing)
Room D
Convention Hall No. 5 (1st Floor) of Beijing International Convention Center

Chairs: **Oleksii Merkulov** (Iron and Steel Institute of National Academy of Sciences of Ukraine, Ukraine)
Runsheng Xu (University of Science and Technology Beijing, China)

15:35-15:55 **A Novel Technology of Co-Injecting Hydrogen and Biomass (CoHB) in Blast Furnaces for a Sustainable Carbon-neutral Ironmaking**
Ming Jiang Gan, Yiran Liu, Yansong Shen
School of Chemical Engineering, University of New South Wales, Australia

15:55-16:15 **Improving Carburization Efficiency Using Biomass Gasification**
Yubin Lee[1], Dongsoo Lee[1], Jisoo Lim[1], Dahan Cho[2], Youngjae Kim[2], Jong Oh Jo[1]
1. Hydrogen Reduction Technology Department Team, R&D Center, Hyundai Steel, South Korea;
2. Inha University, Materials Science & Engineering, South Korea

16:15-16:35 **Low-Temperature Hydrothermal Carbonization/Liquefaction of Biomass for Co-Production of Biochar & Biocrude**
Zhigang Que, Charles Chunbao Xu
School of Energy and Environment, City University of Hong Kong, Hong Kong, China

16:35-16:55 **How Hydrogen Injection Impacts Raceway Reacting Flow in an Ironmaking Blast Furnace: An Industrial-scale CFD-DEM Study**
Panxing Kang, Dan Xu, Yansong Shen
School of Chemical Engineering, University of New South Wales, Australia

16:55-17:15 **Study of Mass Flow and Carbon Reduction Potential in Low-Carbon Blast Furnace with Biomass-CO_2 Syngas Injection**
Jianliang Zhang, **Lian Ye**, Runsheng Xu
School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China

17:15-17:35 **Analysis of Optimised Blending of Bio-char and Coal Composite Injection and the Effect of CO_2 Reduction**
Han Dang[1], Runsheng Xu[1], Jianliang Zhang[1,2], Jinyin Zhang[1]
1. School of Metallurgical and Ecological Engineering, University of Science and Technology Beijing, China;
2. School of Chemical Engineering, The University of Queensland, Australia

Poster Sessions

Number	Abstract Title	All Authors and Companies
P-1	Study on Properties of Tamping Coke in Heilongjiang Province	Xiuli Xu[1], Chaojun Yang[2], Yu Jiang[1], Zubin Xiao[2], **Linghui Meng**[1] 1. Sinosteel Anshan Research Institute of Thermal Energy Co., Ltd., China; 2. Jianlong Xilin Iron and Steel Co., Ltd., China
P-2	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 Chen**[1,3], Tao Jiang[2], Jing Wen[2], Jie Liu[1,3], Hui Zhang[1,3], Libing Xu[1,3], Xun Jin[1,3], 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
P-3	Experimental Research on Influencing Factors of Metal-slag Melting Separation after Titanomagnetite Prereduction	**Lin Li**[1], Fuming Zhang[2], Canpeng Zhu[1], Henglin Zhao[1], Song Lin[1] 1. Beijing JC Energy & Environment Engineering Co., Ltd., China; 2. Chief Engineer Office, Shougang Group Co., Ltd., China
P-4	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
P-5	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
P-6	Study on Testing Method of High Temperature Performance and Optimization of Additive Parameters of Sintering Flux	**Hui Zhang**[1,2], Zhibin Li[3], Shuai Liu[3], Jie Liu[2], Lixiang Duan[2], Xun Jin[2] 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

Number	Abstract Title	All Authors and Companies
P-7	Brief Analysis of Hydrogen Production Scheme Using Waste Heat of BFG	**Jia Li** WISDRI Engineering & Research Incorporation Limited, China
P-8	Carbonization Time Effect on Coke Strength and Microscopic Structure	**Xin Dai**[1], 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
P-9	Research on the Efficient Utilization Technology of Iron-Zinc Dust and Sludge of Shougang Co., Ltd.	**Xiaobo Yu**[1,2], Manxiang Zhao[2], Zhiqiang Yang[3], Mingyuan Gu[3] Lei Liu[2], Shengli Wu[4] 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
P-10	Fundamental and Technology of Super-High Bed Homogeneous Sintering for Iron Ores	**Liangping Xu**, Guanghui Li, Tao Jiang Central South University, China
P-11	Consideration and Discussion on the Application of Ammonia in Direct Reduction Ironmaking	**Yuejun Liu**, Xianchun Li, Shaoyan Wang, Li Li University of Science and Technology Liaoning, China
P-12	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
P-13	Research and Development, Application of Large-scale, Green, Efficient and Intelligent Coke Dry Quenching (CDQ) Technology	**Henglin Zhao**[1], Qingbin Yang[2,3], Song Lin[1], Canpeng Zhu[1], Hairu Xu[1] 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

Number	Abstract Title	All Authors and Companies
P-14	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
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Important Notice to Participants

Welcome to Beijing to attend The 10th International Congress on the Science and Technology of Ironmaking (ICSTI2025). For the convenience of your stay in Beijing, the following information has been provided for your reference.

Official Language

The official language of the conference is English. English to Chinese simultaneous interpretation will be provided. More details of Instructions for Cloud Simultaneous Interpreting could be found on-site.

Registration

1. Registration:

Time: 14:00-20:00, 25 August

Location: First Floor of Beijing Continental Grand Hotel

Time: 07:30-16:00, 26 August

Location: Second Floor of Beijing International Convention Center (BICC)

Time: 08:00-16:00, 27-28 August

Location: First Floor of Beijing International Convention Center (BICC)

Address: No.8 Beichen Dong Road, Chaoyang District, Beijing P. R. China 100101

Tel.: +86 10 84985588

2. Fee (On-site Registration):

Registration Fee	CNY 5500	Regular Participant
	CNY 3000	Student Participant
	CNY 1500	Accompanying Person
Additional Conference Proceedings USB	CNY 700/Copy	Payment on-site
Plant Tour	CNY 350	

Note: 1. The receipt will be given at the registration desk.

2. Students are requested to submit the copy of their student ID.

3. The following materials will be provided at registration desk:

- Name Badge
- Conference Proceedings USB
- Technical Program Book
- Ticket for Welcome Reception on 25 August
- Ticket for Banquet on 26 August

- Lunch and Supper Tickets for 26-28 August
- Plant Tour and Lunch Tickets for 29 August (Only for delegates who have paid the fee for the plant tour)

Notes: 1. Please wear your name badge to attend meetings and take your tickets for lunch, welcome reception and conference dinner.
2. Please sign your name to finish your registration procedure.
3. Please hand over your poster when you register.

Conference Venue and Time

No.	Activity	Time	Venue
1	Plenary Sessions	26 August	Convention Hall No. 2 (2nd Floor) of BICC
2	Parallel Sessions	27-28 August	Room A, B, C and D Convention Hall No. 5 (1st Floor) of BICC
3	Exhibition and Poster Sessions	26-28 August	Convention Hall No. 4 (1st Floor) of BICC

Paper Presentations

Please kindly read the Technical Program of ICSTI2025 and pay attention to your presentation time. Time for plenary papers is 35 minutes including 5 minutes' discussion, for keynote papers at parallel sessions is 25 minutes including 5 minutes' discussion and for contributed papers at parallel sessions is 20 minutes including 5 minutes' discussion.

Notes: Please leave the business card or the short resume of presenter's at the registration desk for the introduction by the session chairmen.

Exhibition and Poster Presentations

The Exhibition and Poster Sessions will be opened on 26-28 August at the Convention Hall No. 4 (1st Floor) of BICC. If you have been noticed to give a poster presentation at ICSTI2025, please stay at the Convention Hall No. 4 (1st Floor) of BICC to answer the participants' questions during tea break.
The excellent poster winners will be given in the Banquet in the evening of 26 August.

Meals

- Breakfast | **Location:** At your staying hotel
- Welcome Reception (18:00-20:00, 25 August) | **Location:** At Grand Ballroom (2nd Floor) of Beijing Continental Grand Hotel
- Banquet (18:00-20:00, 26 August) | **Location:** At Convention Hall No.1 (2nd Floor) of Beijing International Convention Center (BICC)
- Conference Lunch (12:00-13:30, 26-28 August) | **Location:** At Grand Ballroom (2nd Floor) of Beijing Continental Grand Hotel
- Conference Supper (18:00-20:00, 26-28 August) | **Location:** At Grand Ballroom (2nd Floor) of Beijing Continental Grand Hotel

Plant Tour (8:00-11:30, 29 August)

8:00	Get on the shuttle bus at the gate of Beijing Continental Grand Hotel
8:00-9:00	Taking the shuttle bus
9:00-10:20	Visiting Big Air Shougang, No. 3 Blast Furnace Site and 'Tao' Building
10:20-11:30	Come back to the hotel
11:30-13:00	Lunch

Conference Policies

Badges

All attendees must wear registration badges at all times during the conference to ensure admission to events included in the paid fee such as technical sessions, exhibition, receptions, conference dinner, etc.

Photography Notice

By registering for this conference, all attendees acknowledge that they may be photographed by conference personnel while at events and that those photos may be used for promotional purposes.

Audio/Video Recording Policy

Recording of sessions (audio, video, still photography, etc.) intended for personal use, distribution, publication, or copyright without the express written consent of CSM and the individual authors is strictly prohibited.

Cell Phone Use

In consideration of attendees and presenters, we kindly request that you minimize disturbances by setting all cell phones and other devices on "silent" while in meeting rooms.

Conference Secretariat

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