









Technical Program

2026 China Symposium on Sustainable Ironmaking and Steelmaking Technology

CSST2026

November 3-5, 2026

Nanjing, Jiangsu Province, China

Organized by

The Chinese Society for Metals

Co-organized by

Shanghai University

University of Science & Technology Beijing

Conference Website: www.csst2026.com





Time Table

Tuesday, 3 November 2026

Peace Hall (2nd Floor) of International Conference Hotel Nanjing		
Plenary Lectures 8:30-12:20		
Part 1 8:30-10:20	*Chairs: Jianliang Zhang, Fumitaka Tsukihashi*	
Part 2 10:40-12:20	*Chairs: Jian Yang, Joohyun Park*	
Room A	***Room B***	***Room C***
(2nd Floor) of International Conference Hotel Nanjing		
A1 (13:30-17:15) Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency (Page 5-6) *Chairs: Jian Gong, Cong Wang*	B1 (13:30-17:15) Recycling of Metallurgical Resources in Ironmaking and Steelmaking Process (Page 9-10) *Chairs: Henrik Saxen, Ying Ren*	C1 (13:30-17:00) New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances (Page 13-14) *Chairs: Yansong Shen, Jianhua Liu*
Poster Session (Page 18-20)		

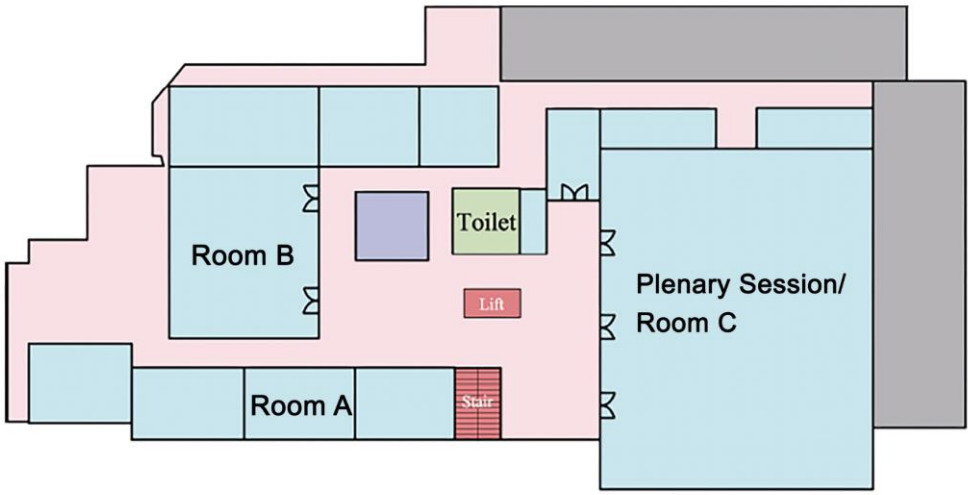
Wednesday, 4 November 2026

Room A	***Room B***	***Room C***
(2nd Floor) of International Conference Hotel Nanjing		
A2 (8:30-11:30) Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency (Page 6-7) *Chairs: Lifeng Zhang, Hiroshi Harada*	B2 (8:30-11:30) Technologies for Controlled and Reduced Emissions in Iron and Steel Production (Page 10-11) *Chairs: Tongsheng Zhang, Min Jiang*	C2 (8:30-11:30) New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances (Page 14-15) *Chairs: Fuming Zhang, Kejiang Li*
A3 (13:30-17:05) Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency (Page 7-8) *Chairs: Miaoyong Zhu, Qifeng Shu*	B3 (13:30-17:10) Technologies for Controlled and Reduced Emissions in Iron and Steel Production (Page 11-12) *Chairs: Zushu Li, Chunlin Chen*	C3 (13:30-17:20) New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances (Page 15-16) *Chairs: Youngjo Kang, Shengfu Zhang*
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Thursday, 5 November 2026

Room A	***Room B***	***Room C***
(2nd Floor) of International Conference Hotel Nanjing		
A4 (8:30-11:15) Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency (Page 8-9) *Chairs: Yongsug Chung, Wen Yang*	B4 (8:30-11:35) Metallurgical Technologies with Long-Life and Reducing in Iron and Steel Production & Comprehensive Utilization of Waste Slag in Ironmaking and Steelmaking (Page 12-13) *Chairs: Tom Honeyands, Zhiyin Deng*	C4 (8:30-11:30) New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances (Page 16-17) *Chairs: Valentina Colla, Guangsheng Wei*
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Floor Map



2nd Floor of Zijin Building, International Conference Hotel Nanjing

Plenary Session

Tuesday, 3 November 2026, GMT+8 (Beijing)
Peace Hall (2nd Floor) of International Conference Hotel Nanjing

Chairs: Jianliang Zhang, University of Science & Technology Beijing, China
Fumitaka Tsukihashi, The University of Tokyo, Japan

8:30-8:40	Opening & Welcome Address
8:40-9:05	Control Technologies of Nanoscale, Micronscale, and Large-size Inclusions in High-quality Steels **Jian Yang**, Shanghai University, China
9:05-9:30	Pathways and Initiatives to Carbon Neutral Steelmaking - From Scrap Circularity to Hydrogen-Based Production **Johannes Schenk**, Montanuniversitaet Leoben, Austria
9:30-9:55	Technical and Economic Viability of Livestock Waste Codigestion for Biogas Production **Paulo Santos Assis**, UFOP, Brazil
9:55-10:20	Sustainable production of iron and steel via electric steelmaking routes for reduction of CO2 emissions **Joohyun Park**, Hanyang University, Korea

10:20-10:40 Break

Chairs: Jian Yang, Shanghai University, China
Joohyun Park, Hanyang University, Korea

10:40-11:05	Accelerating Low-Cost Green Ironmaking: Emerging R&D Methods, Progress, and Challenges **Yansong Shen**, University of New South Wales, Australia
11:05-11:30	Development of innovative decarburization technologies in JFE Steel **Naoki KIKUCHI**, JFE Steel Corporation, Japan
11:30-11:55	Re-thinking the processing of Magnetite Ores **Geoffrey Brooks**, Swinburne University of Technology, Australia
11:55-12:20	Recent Advances in Hydrogen Metallurgy and Low-Carbon Ironmaking Technologies **Jianliang Zhang**, University of Science & Technology Beijing, China

A1 Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency

Tuesday, 3 November 2026, GMT+8 (Beijing) Room A (2nd Floor) of International Conference Hotel Nanjing	
Chairs: Jian Gong, Shougang Group, China Cong Wang, Northeastern University, China	
13:30-13:50	*Keynote* Application Effects of Electromagnetic Technologies in Continuous Casting Process **Lifeng Zhang**, North China University of Technology, China
13:50-14:10	*Keynote* Effect of wettability on the coagulation of inclusions and bubbles and the adhesion of inclusions to the inner wall in the pouring nozzle **Hiroshi Harada**, Nagoya University, Japan
14:10-14:25	Study on the Evolution and Control Technologies of Hydrogen Content in Rail Steel Across the Entire Manufacturing Process **Chaojun Guo**, HBIS HanSteel, China
14:25-14:40	Effects of Small Size HBI on EAF Performance **Haley Hoover**, Midrex Technologies Inc., USA
14:40-14:55	Solidification characteristics and hot cracking behavior of high-manganese steel for LNG cryogenic storage tanks **Yang He**, University of Science and Technology Beijing, China
14:55-15:10	RESEARCH STATUS AND PROSPECTS OF ARTIFICIAL INTELLIGENCE-BASED SCRAP STEEL INTELLIGENT GRADING SYSTEMS **Dongwei Zhao**, Yonyou Network Technology Co., Ltd., China
15:10-15:25	Effect of permanent magnet arrayed magnetic field on the solidification process of Cr-Mo alloyed steel **Jie Zeng**, Central South University, China
15:25-15:35 Break	
15:35-15:55	*Keynote* Development and Application of RH-SPI Powder Injection Technology for Desulfurization **Miaoyong Zhu**, Northeastern University, China
15:55-16:15	*Keynote* Sustainable continuous casting by improving steel quality **Qifeng Shu**, University of Oulu, Finland

16:15-16:30	Research on Sulfur Content Prediction and Process Parameter Optimization for Multi-Process KR-BOF-LF Route **Mingmei Zhu**, Chongqing University, China
16:30-16:45	Analysis of Factors Affecting Accurate Measurement of Converter Sublance and Its Improvement **Bing Sun**, Handan Iron & Steel Group Co.,Ltd., China
16:45-17:00	A Strategic Technology for Decision Support in Coal Blend Management Based on Machine Learning and Mathematical Optimization **Denilson Gomes Campos**, Federal University of Ouro Preto, Brazil
17:00-17:15	Maintenance Management and Planning for Infrastructure in Temporarily Paralyzed Mines: A Case Study **Irce Fernandes Gomes Guimarães**, Federal University of Ouro Preto (UFOP), Brazil

A2 Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency

Wednesday, 4 November 2026, GMT+8 (Beijing) **Room A (2nd Floor) of International Conference Hotel Nanjing**	
Chairs: Lifeng Zhang, North China University of Technology, China Hiroshi Harada, Nagoya University, Japan	
8:30-8:50	*Keynote* The steelmaking technology and future development for non-oriented silicon steel **Jian Gong**, Shougang Group, China
8:50-9:10	*Keynote* Effect of refining slag composition dissolution on dissolution rate of inclusions in-situ observed using confocal scanning laser microscope **Ying Ren**, University of Science and Technology Beijing, China
9:10-9:25	Fundamental research on evolution of Al-Ti-Si oxides in solid Fe-Al-Ti-Si alloy during isothermal heating **Minggang Li**, Central South University, China
9:25-9:40	Thermal boundary condition reconstruction of a steel slab in an industrial reheating furnace using an inverse method **Ramin Khademi**, Akademi University, Finland
9:40-9:55	Experimental assessment of the potential of Thin Slab Casting and Rolling technologies for the production of high-quality steel grades under low-grade scrap green steelmaking conditions **Robert Littringer**, Montanuniversitaet Leoben, Austria
9:55-10:10	Building Information Modeling Application for Sustainable Design Using Light Steel Framing Parametric Templates in the Brazilian Context **Irce Fernandes Gomes Guimarães**, Federal University of Ouro Preto (UFOP), Brazil

10:10-10:35 Break	
10:35-10:55	*Keynote* Intelligent RH decarbonization models and application **Jianhua Liu**, University of Science and Technology Beijing, China
10:55-11:15	*Keynote* Collaborative Metallurgical Engineering: Beyond Low-Carbon Steel toward Structural Transformation in China–Africa–Latin America Cooperation **Dulce Maria Pereira**, Universidade Federal de Ouro Preto (UFOP) / Universidade Federal do Maranhão(UFMA), Brazil
11:15-11:30	Physical-Statistical Model of Particle Interaction Applied to the Optimization of Coal Mixtures for Coking **Dimas Coura**, Federal University of Ouro Preto, Brazil

A3 Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency

Wednesday, 4 November 2026, GMT+8 (Beijing)
Room A (2nd Floor) of International Conference Hotel Nanjing

Chairs: Miaoyong Zhu, Northeastern University, China
Qifeng Shu, University of Oulu, Finland

13:30-13:50	*Keynote* Recycling Welding Fluxes: Key Scientific Issues, Engineering Challenges and Pilot Demonstrations **Cong Wang**, Northeastern University, China
13:50-14:10	*Keynote* Thermodynamic Evaluation of Resulfurized Steel Grades **Wagner Viana Bielefeldt**, Federal University of Rio Grande do Sul, Brazil
14:10-14:25	Effect of magnesium deoxidation on the evolution of non-metallic inclusions in austenitic stainless steel **MINKWAN CHANG**, Hanyang University, Korea
14:25-14:40	Experimental validation of evolution versus equilibrium of (Ti,Nb)N inclusions in Fe-18Cr-2Mo alloy **Weichen Xie**, The University of Tokyo, Japan
14:40-14:55	Modeling of inclusions collision coupled quantity and composition **Jujin Wang**, North China University of Technology, China

14:55-15:10	Development of a Direct Alloying Process Using Mn Ore for Medium Mn Steel Production **Sripushpa Kakara**, Tohoku University, Japan
15:10-15:35 Break	
15:35-15:55	*Keynote* Key Technologies for High-quality Continuous Casting Billets of Long Profile **Jiongming Zhang**, University of Science and Technology Beijing, China
15:55-16:15	*Keynote* Research on Control Technology of Internal Intermediate Cracks in ultra Thick Continuous Casting Slabs for Low-alloy High-strength Steel **Longyun Xu**, Hunan Valin Xiangtan Iron and Steel Co. Ltd., China
16:15-16:35	*Keynote* Modelling on motion and dissolution of Al2O3 inclusions in argon-stirred ladles **Haojian Duan**, University of Science and Technology Beijing, China
16:35-16:50	Desulfurization Behavior of Stainless Steel by CaO-SiO2-Al2O3-Cr2O3-CaF2-MgO Slag System **Dongmin Park**, Hanyang University, Korea
16:50-17:05	Technological innovation and decarbonization in brazilian metallurgy and steelmaking **LAURA ELIZA FERREIRA SILVA**, Universidade Federal de Ouro Preto, Brazil

A4 Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency

Thursday, 5 November 2026, GMT+8 (Beijing) **Room A (2nd Floor) of International Conference Hotel Nanjing**	
Chairs: Yongsug Chung, Tech University of Korea, Korea Wen Yang, University of Science and Technology Beijing, China	
8:30-8:50	*Keynote* Wettability study between liquid slags and refractories during a splash process of the converter **Yongsug Chung**, Tech University of Korea, Korea
8:50-9:10	*Keynote* Multiphase Simulation of Equiaxed Grain Formation and Macrosegregation in a Bearing Steel Ingot **Haijie Zhang**, North China University of Technology, China
9:10-9:25	Effect of atomization gas on cleanliness of steel powders manufactured by vacuum induction melting gas atomization (VIGA) process **Yao Su**, Hanyang University, Korea

9:25-9:40	Strengthening Mechanism of High Strength Low-alloy Steel by Strip Casting Process **Cheng Lu**, Institute of Research of Iron and Steel, Shasteel, China
9:40-9:55	Biomass Green Reduction and Multi-element Synergistic Recovery of High-titanium Magnetite **Mingyuan Rao**, Northeastern University, China
9:55-10:10	Modeling the Precipitation and Growth of TiN Inclusions during Solidification of Ti-microalloyed High-Strength Steels **Haoyu Wang**, North China University of Science and Technology, China
10:10-10:35 Break	
10:35-10:55	*Keynote* The influence mechanism of inclusion crystallization behavior on its deformation characteristics **Wen Yang**, University of Science and Technology Beijing, China
10:55-11:15	*Keynote* Reaction and Corrosion Behaviors of MgO-ZrO2 Refractories During Refining of High-Ti Steel **Zhiyin Deng**, Northeastern University, China

B1 Recycling of Metallurgical Resources in Ironmaking and Steelmaking Process

Tuesday, 3 November 2026, GMT+8 (Beijing)
Room B (2nd Floor) of International Conference Hotel Nanjing

Chairs: Henrik Saxen, Abo Akademi University, Finland
Ying Ren, University of Science and Technology Beijing, China

13:30-13:50	*Keynote* Co-Production of High-Quality Steel and Cement Clinker in EAFs Through Slag Engineering **Zushu Li**, The University of Warwick, UK
13:50-14:10	*Keynote* Reduction of CO2 Emissions from Blast Furnace with Carbon Recycling Methane **Naoto Nakamura**, JFE Steel Corporation, Japan
14:10-14:25	Research on Key Technologies for Efficient Treatment of Steel Slag to Promote Internal Recycling **Lei Rao**, Maanshan Iron and Steel Company Limited, China
14:25-14:40	Segregation of a phosphorus rich phase during differential solidification of BOS slag under different cooling rates **Tuyen Nguyen**, School of Engineering, the University of Newcastle, Australia

14:40-14:55	The practice of solid waste recycling and flux economic replacement in steelmaking production **Chao Li**, Angang Steel Company Limited, China
14:55-15:10	Selective Recovery of Fe and Ni from Stainless Steel Scrap via the Carbonyl Process: Kinetic Analysis **SangHyun Jeon**, Inha University, Korea
15:10-15:25	Analysis of Low-Carbon Resource Recovery Pathways for Steel Mill Gas **Yunling Cao**, PIONEER, China
15:25-15:35 Break	
15:35-15:55	*Keynote* Defining Critical Tramp Element Thresholds for Sustainable Scrap-Based EAF Steel Production: Implications for Surface Hot Shortness and Circular Resource Use **Joonho Lee**, Korea University, Korea
15:55-16:15	*Keynote* Low-Carbon Iron Production: Opportunities and Recent Practices **Xue Feng Dong**, University of Wollongong, Australia
16:15-16:30	Efficient recovery and utilization of medium- and low-temperature waste heat and carbon reduction potential assessment in iron and steel industry based on process transformation **Fan Jiang**, Northeastern University, China
16:30-16:45	Zinc Circulation and Furnace Wall Accretion in High-Zinc Vanadium–Titanium Blast Furnaces **Wen Li**, Chongqing University, China
16:45-17:00	Comprehensive Evaluation of Steel-Chemical Co-production Pathways in China Based on the TOPSIS Model **Chengxi Wang**, Northeastern University, China
17:00-17:15	Mechano-Electrical Properties and Influencing Mechanisms of Solid Waste-Based Supercapacitor **Wenjing Sun**, Northeastern University, China

B2 Technologies for Controlled and Reduced Emissions in Iron and Steel Production

Wednesday, 4 November 2026, GMT+8 (Beijing)
Room B (2nd Floor) of International Conference Hotel Nanjing

Chairs: Tongsheng Zhang, Shanghai University, China
Min Jiang, University of Science and Technology Beijing, China

8:30-8:50	*Keynote* Simulation of static and dynamic operation of the direct reduction furnace **Henrik Saxen**, Abo Akademi University, Finland
8:50-9:10	*Keynote* Current Progress on Electric Smelting Furnace Research at University of Newcastle **Tom Honeyands**, The University of Newcastle, Australia
9:10-9:25	Overview of CSIRO green ironmaking R&D **Chunlin Chen**, CSIRO Mineral Resources, Australia
9:25-9:40	Enhancing machinability of high-sulfur free-cutting steel via adding Ti instead of Pb **Xiaoyong Gao**, Yanshan University, China
9:40-9:55	Transient CFD Analysis and Closed-Loop Stabilization of DRI Metallization during Hydrogen-Rich Transition in a Shaft Furnace **Yandong Zhai**, Åbo Akademi University, Finland
9:55-10:10	Energy Efficiency and Use of Hydrogen in Preheating and Reheating **Kevin CAI**, Linde GmbH, Germany
10:10-10:35 Break	
10:35-10:55	*Keynote* Comments about Technologies to be used in Ironmaking and Steelmaking to reduce GHG **Paulo Santos Assis**, UFOP and HUST, Brazil
10:55-11:15	*Keynote* Mechanisms and Kinetics of Phase Evolution during Solidification of Cr-Containing Stainless Steel Slags **Gibeom Kim and Il Sohn**, Yonsei University, Korea
11:15-11:30	Study on the high-temperature stability mechanism of calcium adsorbent modified with Ca2Fe2O5 perovskite structure **Shuoyang Liang**, Soochow University, China

B3 Technologies for Controlled and Reduced Emissions in Iron and Steel Production

Wednesday, 4 November 2026, GMT+8 (Beijing)
Room B (2nd Floor) of International Conference Hotel Nanjing

Chairs: Zushu Li, The University of Warwick, UK
Chunlin Chen, CSIRO Mineral Resources, Australia

13:30-13:50	*Keynote* Reactivity and Degradation of Coke in Simulated Top Gas Recycling Oxygen Blast Furnace Conditions **Arash Tahmasebi**, University of Newcastle, Australia
13:50-14:05	Research on a Mechanism-Model-Based Method for Energy Consumption Simulation and Diagnosis of Electric Arc Furnaces **Qiqi Li**, Northeastern University, China
14:05-14:20	Improving water circularity and sustainability in the steel industry through physical and chemical modelling and simulations **Valentina Colla**, Scuola Superiore Sant'Anna, Italy
14:20-14:35	Digital twins and Economic Model Predictive Control for CCUS optimization from steelworks off gases **Ismael Matino**, Scuola Superiore Sant'Anna, Italy
14:35-14:50	Application Research on "Near-Zero Residual Oxygen" Combustion Control Technology for Heating Furnaces **Jinjun Zhou**, Maanshan Iron & Steel Company Limited, China
14:50-15:05	Study and Practice on Resource Utilization of Coke Oven By-products **Hua Zhao**, Ansteel Iron & Steel Research Institutes, China
15:05-15:20	Fe1-xO to γ-Fe reaction in Fe-Si-Al-O system above 1200°C in stagnant gas in the presence of solid carbon **Nathan Barrett**, The University of Newcastle, Australia
15:20-15:35 Break	
15:35-15:55	*Keynote* Phosphorus in iron and steelmaking – an Australian perspective for Pilbara iron ores **Ray Longbottom**, University of Wollongong, Australia
15:55-16:10	Waste Heat Characterization and Recovery Strategies in Hot Strip Mill Downstream Processes **Ismael Matino**, Scuola Superiore Sant'Anna, Italy
16:10-16:25	Solid-State Iron Ore Reduction in a Shaft Furnace Modelled as a Series of Plug Flow Reactors and Effect of Hydrogen Addition **Mengqing Zhao**, The University of Western Australia, Australia
16:25-16:40	Industrial Test of Biomass Charcoal Injection in Blast Furnace of WISCO Limited **Shanshan Yu**, Wuhan Iron and Steel Co., Ltd., China
16:40-16:55	Effect of mineralogy on iron ore reduction in NH3 atmosphere at different temperatures **Kaijie Li**, The University of Western Australia, Australia

16:55-17:10	Energy and carbon flow transition in hydrogen-based direct reduction iron electric arc furnace steelmaking **Meng Li**, Åbo Akademi University, Finland

B4 Metallurgical Technologies with Long-Life and Reducing in Iron and Steel Production & Comprehensive Utilization of Waste Slag in Ironmaking and Steelmaking

Thursday, 5 November 2026, GMT+8 (Beijing)
Room B (2nd Floor) of International Conference Hotel Nanjing

Chairs: Tom Honeyands, The University of Newcastle, Australia
Zhiyin Deng, Northeastern University, China

8:30-8:50	*Keynote* Cleanliness of IF Steel Slabs during Ladle Exchange: Evaluation and Control **Xiaoxuan Deng**, Shougang Group, China
8:50-9:05	Role of Water Vapor in Carburization, Morphological Evolution, and Swelling of Iron Ore Pellets during H2–CO Reduction **Ahmadreza Mohammadian Soodmand**, University of Oulu, Finland
9:05-9:20	Research on the Failure Mechanism and Microstructure Evolution of Cast Iron Cooling Staves in Blast Furnaces **Jian Sun**, Shougang Group, China
9:20-9:35	Synthesis of LiFePO4 from steelmaking slag as an alternative phosphorus source **Wenfeng GU**, Tohoku University, Japan
9:35-9:50	Preparation of Iron-Bearing Solid Waste Cold-Bonded Briquettes with Double-layer **Sheng Liu**, Chongqing University, China
9:50-10:05	Carbon-Regulated Sulfur Removal and Chlorine Retention during MgCl2-Assisted Roasting of Electrolytic Manganese Residue **Mengchuan Li**, Central South University, China
10:05-10:20	In-Situ Cemented Backfill Curing Condition Estimation using The Twin Curing Apparatus **Yue Zhao**, North China Institute of Science and Technology, China
10:20-10:35 Break	

10:35-10:50	Processing of metallurgical slag in a blast furnace **Oleksii Merkulov Liekexie A**, Suzhou SICUI Welding Technology Research Institute Co,.Ltd., China / Iron and Steel Institute National academy of sciences of Ukraine, Ukraine
10:50-11:05	Aluminum-Dross-Assisted Smelting Reduction of Steel Slag for Reductive Dephosphorization and Iron Recovery **Xi Lu**, Central South University, China
11:05-11:20	Utilization of chromite ore processing residue in the sintering process: Effect of FeCr2O4 on the wetting behavior of calcium ferrite melt **Ju Xu**, Wuhan University of Science and Technology, China
11:20-11:35	Valorization of Steelmaking By-Products for Sustainable Production: Pig Iron and Mold Powder **HOSSAM AHMED MOHMED**, CENTRAL METALLURGICAL RESEARCH AND DEVELOPMENT INSTITUTE, CMRDI, EGYPY

C1 New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances

Tuesday, 3 November 2026, GMT+8 (Beijing)
Room C (2nd Floor) of International Conference Hotel Nanjing

Chairs: Yansong Shen, University of New South Wales, Australia
Jianhua Liu, University of Science and Technology Beijing, China

13:30-13:50	*Keynote* Low-Carbon Blast Furnace Ironmaking with Low-Grade Iron Ores: Chinese Industrial Practice **Zhengjian Liu**, University of Science and Technology Beijing, China
13:50-14:10	*Keynote* Innovation and Progress on Blast Furnace Ironmaking Technology at Shougang **Fuming Zhang**, Shougang Group Co., Ltd., China
14:10-14:25	Innovative Strategies for Effective Removal and Harm Reduction of Nitrogen Based on EAF Steelmaking Process **Shaoyan Hu**, Soochow University, China
14:25-14:40	An Improved CFD Study of Direct Reduction Shaft Furnace for Low-Carbon Ironmaking **Rui Hong**, UNSW, Australia

14:40-14:55	Numerical Study on Hydrogen Reduction of Iron Oxide Pellets in a Shaft Furnace with Selective Gas Recycling **Chenxi Zhao**, Northeastern University, China
14:55-15:10	Reduction studies of low-grade banded hematite quartz **Anil Kumar**, IIT Roorkee, India
15:10-15:35 Break	
15:35-15:55	*Keynote* Qisunny Methodology: Emergent Physicochemical Rules and Metallurgical Performance of Ore-Coke-CO-H2 System **Qi Wang**, University of Science and Technology Liaoning, China
15:55-16:15	*Keynote* Design and Application Research of New Copper-based Cooling Stave **Qiong Huang**, Shantou Huaxing Metallurgical Equipment Co., Ltd., China
16:15-16:30	Complementary Trade-off in Phosphorus Enrichment Capacity between Melting Slag and Tapping Slag during EAF Continuous Slag Discharge Process: The Influence of Basicity **Han Sun**, Shanghai University, China
16:30-16:45	Geopolymers: a sustainable alternative for the mining and metallurgical industry **Davi Vieira**, UFOP Universidade Federal de Ouro Preto, Brazil
16:45-17:00	Removal of inclusions in high-purity FeSi alloy using crystalline silicon debris as Si source **Guangyu Chen**, Ningxia University, China

C2 New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances

Wednesday, 4 November 2026, GMT+8 (Beijing) **Room C (2nd Floor) of International Conference Hotel Nanjing**	
Chairs: Fuming Zhang, Shougang Group Co., Ltd., China Kejiang Li, University of Science and Technology Beijing, China	
8:30-8:50	*Keynote* Study on the degradation of iron ore briquette during reduction **Youngjo Kang**, Dong-A University, Korea
8:50-9:10	*Keynote* Exploration of the Optimal Pellet Proportion in Blast Furnace Burden **Weidong Zhang**, Shougang Group Co., Ltd., China

9:10-9:25	Integrated Process Modelling for Low-Carbon Ironmaking and Steelmaking: From Physics-Based Simulation to Machine Learning Surrogates **Xiaobing Yu**, UNSW, Australia
9:25-9:40	Industrial Study on Low-Carbon Substitution of Biomass Char Injection in a Super-Large Blast Furnace **Nan Zhang**, Henan Advanced Iron and Steel Materials Industry Research Institute, China
9:40-9:55	Softening–Melting–Dripping Behavior of Segregated High-Pellet Burdens **Xi Zhang**, Chongqing University, China
9:55-10:10	Feasibility Study on Low-Carbon Coking with Microwave Preheating of Coking Coal **Hua Zhao**, Ansteel Iron & Steel Research Institutes, China
10:10-10:25	Heterogeneous reduction behavior of iron oxides in CO/H2 atmospheres revealed by multiscale characterization **Yuzhao Wang**, University of Oulu Nano and Molecular Systems Research Unit, Finland
10:25-10:35 Break	
10:35-10:55	*Keynote* The impact of different charges in electric-based ironmaking and steelmaking: a simulation investigation **Valentina Colla**, Scuola Superiore Sant'Anna, Italy
10:55-11:15	*Keynote* Degradation Behavior of Coke Structure and Properties under Blast Furnace Conditions and Coke Quality Evaluation Methods **Shengfu Zhang**, Chongqing University, China
11:15-11:30	Research on the Application of Pretreatment and Carbon Capture Technologies for Blast Furnace Gas **Jinsong Li**, Research Institute of Technology of Shougang Group Co., Ltd., China

C3 New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances

Wednesday, 4 November 2026, GMT+8 (Beijing)
Room C (2nd Floor) of International Conference Hotel Nanjing

Chairs: Youngjo Kang, Dong-A University, Korea
Shengfu Zhang, Chongqing University, China

13:30-13:50	*Keynote* Study of the potential of corymbia bark for energy and biochar production **Ricardo Barros**, ArcelorMittal, Brazil
13:50-14:10	*Keynote* Multi-view feasibility study of the innovative co-injection of H2 and coal in blast furnaces for viable net-zero ironmaking **Yiran Liu**, University of Western Australia, Australia
14:10-14:25	Reactive CFD-DEM modelling of particle-scale gas-solid flows in an industrial ironmaking blast furnace **Haoyong Kan**, The University of New South Wales, Australia
14:25-14:40	Effect of Hydrogen Addition on the Wetting Behavior between Blast Furnace Slag and Coke **Hyeonwoo Shin**, Dong-A University, Korea
14:40-14:55	Whole-Process Coupling Modeling and Energy–Carbon–Cost Analysis of the Pelletizing–Shaft Furnace Direct Reduction–Electric Arc Furnace Steelmaking Route **Xiangyuan Fu**, University of Science and Technology Beijing, China
14:55-15:10	Synergizing Attention-Guided Graph Convolutions with Transfer–Incremental Learning for Interactive Many-Objective Performance–Efficiency–Emission Balancing on Smelting Reduction vessel **Deyue Qin**, Northeastern University, China
15:10-15:35 Break	
15:35-15:55	*Keynote* Multidimensional Measurement and Control of Molten Slag for Carbon-Neutral Steelmaking **Noritaka Saito**, Kyushu University, Japan
15:55-16:15	*Keynote* Novel techniques and processes for the preparation of green and low-carbon blast furnace burden **Zhiyun Ji**, Central South University, China
16:15-16:35	*Keynote* How Steel contributes to addressing the Triple Planetary Crisis **Jean-Pierre BIRAT**, IF Steelman, France
16:35-16:50	Degradation Behavior of MgO-C with Antioxidants in CO/CO2 environment during BOF **Giwon Kim**, Tech University of Korea, Korea
16:50-17:05	Distribution Behavior of Impurity Elements During the Smelting of H2-Reduced DRI **Mahmoud Soliman Abdelgawwad Abdelgalil**, Central South University, China
17:05-17:20	Study on titanium extraction via ammonia reduction-nitriding and low-temperature chlorination of titanium concentrate **Zhixiong You**, Chongqing University, China

C4 New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon Peak and Carbon Neutrality Circumstances

Thursday, 5 November 2026, GMT+8 (Beijing)
Room C (2nd Floor) of International Conference Hotel Nanjing

Chairs: Valentina Colla, Scuola Superiore Sant'Anna, Italy
Guangsheng Wei, University of Science and Technology Beijing, China

8:30-8:50	*Keynote* Deep melt purification technology for recycled steel **Guangsheng Wei**, University of Science and Technology Beijing, China
8:50-9:10	*Keynote* Molten CaCl2-Based Carbothermal ironmaking **Xiao Yang**, Westlake University, China
9:10-9:30	*Keynote* Challenges on sustainable EAF steelmaking in China **Alberto N. Conejo**, University of Science and Technology Beijing, China
9:30-9:45	Technical Practice and Technological Breakthroughs in High-Grade Steel Plate Production via the Electric Furnace Route at Baosteel Zhanjiang Iron and Steel Co., Ltd. **Bohan Tian**, Baoshan Iron & Steel Co., Ltd., China
9:45-10:00	Numerical Simulation of Ammonia-Coal Composite Injection in Blast Furnace Ironmaking **Yuzhe Sun**, University of Science and Technology Beijing, China
10:00-10:15	Reduction and Magnetic Separation of Ludwigite Ore Using Agricultural Straw as Green Reductant **Xuyang Wang**, Northeastern University, China
10:15-10:35 Break	
10:35-10:55	*Keynote* Master alloys and Stainless Steels via Hydrogen Reduction of Blended Oxides **Jie Qi**, Hong Kong University of Science and Technology (Guangzhou), China
10:55-11:15	*Keynote* Preparation Technology and Industrial Application of Fluxed Pellets Using Ultra-fine Magnetite-Hematite Mixed Iron Concentrate **Mingshun Zhou**, Iron and steel research institute of Angang Group, China
11:15-11:30	Mechanism of Reduction Atmosphere on Defect Evolution of Wüstite and Iron Whisker Growth **Lin Wang**, Chongqing University, China

Poster Session

Date: Nov. 3 to the morning of Nov. 5

Place: 2nd Floor of Zijin Building, International Conference Hotel Nanjing

Metallurgical Technologies for Steels with Enhanced-Quality, High Performance and High Efficiency	
P-1	Application of Acoustic Fiber Technology in Intelligent Monitoring and Environmental Emission Reduction of Coking Conveyor Belt **Guang Yang**,Wuhan Pingmei Wugang Joint Coking Co.,Ltd,China
P-2	The design concept of the high-flow RH multi-functional top lance **Yonge Ding**, Baosteel Engineering & Technology Group Ltd.,Co.,China
P-3	STUDY OF THE INFLUENCE OF %MgO CONTENT IN CaO-SiO2-Al2O3 SLAG ON THE DENSITY OF NON-METALLIC INCLUSIONS IN STEEL **Nelson de Freitas Costa**, Universidade Federal do Rio Grande do Sul,Brazil
P-4	Investigation on the Spatial Distribution of TiN Inclusions in 439Ti-Stabilized Ferritic Stainless Steel Slabs **Mukesh Kumar Yadav**, IIT Bombay, India
P-5	Monolithic refractories for the steel industry: a study of case **GABRIELA ARAUJO**, UFOP SCHOOL OF MINES, Brazil
P-6	The Evolution of World Steelmaking: from Traditional Blast Furnaces to Green Steelmaking **GABRIELA ARAUJO**,UFOP SCHOOL OF MINES, Brazil
P-7	Working state analysis and structure optimization of blast furnace copper cooling stave with numerical simulation **Wang Zeng**, University of Science and Technology Beijing, China
Recycling of Metallurgical Resources in Ironmaking and Steelmaking Process	
P-8	Recovery of Iron Ore Ultrafines by Physical Methods: A Systematic Review with Emphasis on Magnetic Separation **Natália Pimenta**, Universidade Federal de Ouro Preto, Brazil
P-9	ANALYSIS: RECYCLING OF METALLURGICAL RESOURCES IN THE BRAZILIAN STEEL INDUSTRY **Luiz Filipe Silva e Souza Leite**, Ouro Preto School of Mines by Ouro Preto Federal University, Brazil

P-10	Effect of oxygen partial pressure and composition on the surface tension of liquid Cu-based alloys **Minseo Cho**, Korea University, Republic of Korea
P-11	Reduction Mechanism and Carbon Evolution Behavior of NiO Using Polyethylene-Based Reductants **Mohyun Cho**, Korea university, Korea, Republic of Korea
P-12	Meta-analysis of Iron Ore and Industrial Residues Injection in Blast Furnace Toward Sustainable Ironmaking **Vanderson Eney de Matos**, Samarco, Brazil
P-13	Technological Characterization of Ultrafine Iron Ore Tailings for Application as a Circular Co-product in the Steelmaking **Vanderson Eney de Matos**, Samarco, Brazil
Technologies for Controlled and Reduced Emissions in Iron and Steel Production	
P-14	Technological Integration and Innovation of a High-Parameter Reheat CDQ Waste Heat Power Generation Project **LIN LI**, Beijing JC Energy & Environment Engineering Co., Ltd, China
P-15	High-Efficiency Power Generation from Metallurgical Waste Heat in SG: Key Technologies and Future Prospects **Liyun WU**, Beijing Shougang International Engineering & Technology Co. Ltd, China
P-16	Study on Sintering Ore Blending of Nanjing Iron and Steel Based on Optimization of Basic Properties of Iron Ore Fines **Heming Ju**, Nanjing Iron & Steel Co.,Ltd., China
P-17	Technological Innovation of Green & Low-Carbon Cycle Utilization of Metallurgical Resources in SG Jingtang **Liyun WU**, Beijing Shougang International Engineering & Technology Co. Ltd, BSIET, China
P-18	Developments For a Cleaner Steel Industry: A Brief Review Inside the Progress for Decarbonization in Steelmaking **Heitor Ramos**, UFOP - Universidade Federal de Ouro Preto, Brazil
P-19	Study of the Potential Application of Macaúba Palm’s Biomass as an Energy Source in the Steel Industry **GABRIELA ARAUJO**, UFOP SCHOOL OF MINES, Brazil
P-20	High-TiO2 Slag Optimization for V-Ti Magnetite Smelting: Burden Behavior & Industrial practices **Kaihui Ma**, Pangang Group Research Institute Co., Ltd., China
New Technologies & Processes in the Fields of Ironmaking and Steelmaking under the Carbon	

Peak and Carbon Neutrality Circumstances	
P-21	Innovative Pathways for Replacing Coke with Coal: Application of Lump Anthracite as Sintering Fuel and Direct Charge in Blast Furnace Ironmaking **Yingjie Fan**, University of science and technology Beijing, China
P-22	Practice and Progress in Green and Low-Carbon Smelting Technologies of SG Jingtang **Wancai HE**, Beijing Shougang International Engineering & Technology Co. Ltd, China
P-23	Exploration of Sustainable Steel Metallurgy Technology **Gao Shimin**, Dezhou Economic and Information Technology Bureau, Province, China
P-24	Studies of Phenomena that Promote the Formation of Scaffold in Blast Furnaces **Guilherme Russo**, Fundação de Apoio ao Instituto de Pesquisas Tecnológicas de São Paulo, Brazil
P-25	Effect of Ni, Co, and Mn Doping on Hydrogen Reduction Behavior of Hydrothermally Synthesized Magnetite Nanoparticles **Saeid Khesali Azadi**, University of Oulu, Finland
P-26	Low-Carbon Reductant Injection in Blast Furnace Ironmaking: A Systematic Review and Meta-Analysis **Marcelo Carlos Ribeiro**, Federal University of Ouro Preto, Brazil
P-27	A Review on Hydrogen-Based Direct Reduction Integrated with an Electric Smelting Furnace (ESF) for Low-Carbon Steelmaking **A. Hussein**, Central South University, China
P-30	Prediction and Traceability of Blast Furnace Gas Utilization Based on Big Data **Xuan Ding**, University of Science and Technology Beijing, China
P-31	Material and Energy Flow Analysis of a Novel Hydrogen-Based Two-Step Smelting Reduction Ironmaking Process **Xu Liu**, University of Science and Technology Beijing, China
P-32	Numerical simulation the influence of operating parameter on reduction behavior and gas residence time in a hydrogen-rich reduction shaft furnace **Saiyu Wu**, University of Science and Technology Beijing, China
Comprehensive Utilization of Waste Slag in Ironmaking and Steelmaking	
P-33	Experimental Study on Coal-Based Direct Reduction and Electric Furnace Melting Separation of Oxidized Pellets Prepared from Copper Tailings **Jingyi Zhao**, Central South University, China

P-34	REUSE OF ULTRAFINE IRON ORE TAILINGS FROM SAMARCO: BIBLIOGRAPHIC REVIEW AND ANALYSIS OF THE EVOLUTION OF TECHNOLOGICAL ALTERNATIVES **Cristina Amâncio Moreira Elaine**, Universidade Federal de Ouro Preto, Brazil
P-35	FROM SLAG TO SCHOOL: ENVIRONMENTAL EDUCATION INTEGRATED WITH THE STEEL INDUSTRY SUPPLY CHAIN IN SETE LAGOAS, MINAS GERAIS, BRAZIL **Márcia Crsitina Ribeiro Oliveira**, Prefeitura Municipal de Caetanópolis, Brazil

Important Notice to Participants

Welcome to Nanjing to attend 2026 China Symposium on Sustainable Ironmaking and Steelmaking Technology (CSST 2026). For the convenience of your stay in Nanjing, the following information has been provided for your reference.

Official Language

The official language of the conference is English.

Registration

1. Registration:

Time: 2 November, 14:00-20:00

Location: First Floor of Zijin Building, International Conference Hotel Nanjing

Time: 3-4 November, 07:30-16:00

Location: Second Floor of Zijin Building, International Conference Hotel Nanjing

Address: No. 2 Sifang Cheng, Xuanwu District, Nanjing, Jiangsu Province, China

Tel.: +86-25-84430888

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

- Name Badge
- Conference Proceedings USB
- Technical Program Book
- Ticket for Banquet on 3 November
- Meal Voucher for Nov. 3 to the morning of Nov. 5

**Notes: 1. Please wear your name badge to attend meetings and take your tickets for lunch, supper and banquet.*

2. Please sign your name to finish your registration procedure.

Conference Venue and Time

No.	Activity	Time	Venue
1	Plenary Session	Nov. 3	Peace Hall (2nd Floor of Zijin Building), International Conference Hotel Nanjing
2	Parallel Sessions	Nov. 3 to the morning of Nov. 5	Room A, B and C (2nd Floor of Zijin Building) of International Conference Hotel Nanjing

3	Exhibition and Poster Sessions	Nov. 3 to the morning of Nov. 5	2nd Floor of Zijin Building, International Conference Hotel Nanjing

Paper Presentations

Please kindly read the Technical Program of CSST 2026 and pay attention to your presentation time. Time for plenary papers is 25 minutes including discussions, for keynote papers at parallel sessions is 20 minutes including discussions, for contributed papers at parallel sessions is 15 minutes including discussions.

**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 3- morning 5 November at the 2nd Floor of Zijin Building, International Conference Hotel Nanjing. If you have been noticed to give a poster presentation at CSST 2026, please stay at the 2nd Floor of Zijin Building, International Conference Hotel Nanjing to answer the participants' questions during tea break.

Meals

- *Breakfast* | ***Location:*** At your staying hotel

- *Banquet (3 November)* | ***Location:*** At Peace Hall (2nd Floor of Zijin Building), International Conference Hotel Nanjing

- Conference *Lunch:* (*3-5 November*) | ***Location:*** At Mei & Mei Garden Restaurant (1st Floor) of International Conference Hotel Nanjing

- Conference *Supper:* (*2 and 4 November*) | ***Location:*** At Mei & Mei Garden Restaurant (1st Floor) of International Conference Hotel Nanjing

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 author 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

The Chinese Society for Metals

Ms. Fang Liu Cell phone: 13810162102

Mr. Xin Zhao Cell phone: 13439682609