

# 16th Japan-China Symposium on Science and Technology of Iron and Steelmaking

Toward the strongest countries for iron and steelmaking technology

10-11 June 2024 at Seagaia Convention Center, Miyazaki, Japan

## Program

### Tentative Schedule

9 June 2024

17:00-20:00 **Registration**

18:00-20:00 **Welcome party**

10 June 2024

9:00 **Registration**

10:00 **Opening remarks**

Kunihiko Nakashima, Kyushu University, Japan

Jian Yang, Shanghai University, China

Chairperson Tetsuya Nagasaka, Tohoku University

Chairperson Zhiling Tian, The Chinese Society for Metals

10:10 **Fundamental research on molten slags and fluxes since 1980's from the viewpoint of one ferrous metallurgist [keynote]**

Kazuki Morita, The University of Tokyo, Japan

10:40 **The green transformation in the Chinese ironmaking industry [keynote]**

Jianliang ZHANG, University of Science and Technology Beijing, China

11:10 **Carbon neutrality initiatives in Japanese steel industry [Keynote]**

Kenichi Higuchi, Nippon Steel Corporation, Japan

11:40 **Business digitization to digital business, build a data-driven smart factory--practice and prospect of digital transformation of steel enterprise [Keynote]**

Can XU, CISDI Information Technology (Chongqing) Co., Ltd., China

12:10-13:30 **Lunch**

Chairperson Hiroyuki Matsuura, The University of Tokyo

Chairperson Jianliang Zhang, University of Science and Technology Beijing

13:30 **HyCROF's carbon reduction concept and technological progress**

Haifa XU, Baosteel Central Research Institute, China

13:50 **Multi-mode microwave furnace study on rapid dephosphorization of high-phosphate iron ore with magnetite addition**

Ko-ichiro Ohno, Kyushu University, Japan

14:10 **Development of clean technology in hot rolling sludge and its Application**

Guangyu MA, Angang Steel Co., Ltd, China

14:30 **Effective recycle of steel slag through valorization of iron and phosphorus**

Xu GAO, Central South University, China

14:50 **Metallurgical process engineering research and development in China**

Anjun XU, University of Science and Technology Beijing, China

15:10-15:30 **Coffee break**

Chairperson Kazuki Morita, The University of Tokyo

Chairperson Jian Yang, Shanghai University

15:30 **Thermodynamics and kinetics of dephosphorization in double slag steelmaking process with low CO<sub>2</sub> emission**

Jian YANG, Shanghai University, China

15:50 **Utilization of external force for liquid metal treatment**

IWAI Kazuhiko, Hokkaido University, Japan

16:10 **Electrical conductivity measurement of molten slags by van der Pauw-Ohta method**

Noritaka SAITO, Kyushu University, Japan

16:10 **Closing remarks for first day and announcement**

18:00 **Banquet**

11 June 2024

Chairperson Noritaka Saito, Kyushu University

Chairperson Lifeng Zhang, North China University of Technology

9:00 **Interfacial reactions between Al<sub>2</sub>O<sub>3</sub>-based refractories and molten steels with different Mn content**

Yutata Kawakami, Kobe Steel, LTD, Japan

9:20 **Efficient production in AOD process by proper switching for blowing gas**

Shuji Hashimoto, Daido Steel Co., Ltd., Japan

- 9:40 **Experimental and theoretical study on desulfurization mechanism of the molten steel through slags**  
Lifeng ZHANG, North China University of Technology, China
- 10:00 **Optimal control of inclusions for improved castability of high carbon chromium bearing steel**  
Min JIANG, University of Science and Technology Beijing, China
- 10:20-11:40 **Coffee break**
- Chairperson Hiroshi Fukaya, Nippon Tohoku University  
Chairperson Min Jiang, University of Science and Technology Beijing
- 10:40 **Evolution behavior and aggregation characteristics of rare earth inclusions in high-quality steel**  
Bo ZHANG, Northeastern University, China
- 11:00 **Elucidation of non-metallic inclusion evolution mechanism during solidification of molten steel**  
Hiroyuki Matsuura, The University of Tokyo, Japan
- 11:20 **Investigation of inclusion refinement in molten steel by Mg addition**  
Kazuki Nishinaka, JFE Steel Corporation, Japan
- 11:40-13:00 **Lunch**
- Chairperson Hideyuki Yasuda, Kyoto University  
Chairperson Miaoyong Zhu, Northeastern University
- 13:00 **Formation mechanism and control technology for slab surface cracks of micro-alloyed steel during continuous casting and hot charging**  
Miaoyong ZHU, Northeastern University, China
- 13:20 **Control technology and equipment development for hot charging cracks in micro alloyed steel plate**  
Chenxi JI, Shougang Group Co., Ltd., China
- 13:40 **Ferrite-austenite transformation during/after solidification in steels observed by time-resolved tomography and X-ray diffractometry**  
Hideyuki Yasuda, Kyoto University, Japan
- 14:00 **Application of fluorescence imaging for visualization of metallurgical phenomena**  
Hiroyuki Shibata, Tohoku University, Japan
- 14:20 **Closing remarks**  
Hideyuki Yasuda, Kyoto University, Japan

**Plant Tour**  
(for Chinese Delegation)

Tentative Schedule

12 June 2024

Time

9:00	Departure	From Seagaia Convention Center
	3hr. ↓	By Bus
12:00		Communication Center at Oita Works, Nippon Steel Corporation
12:10	1hr.	Lunch
13:10	10min.	Change Clothes
14:50	100min.	PT : Blast Furnace⇒Hot Strip Mill
15:00	10min.	Change Clothes
	20min.	↓
15:20		Oita
15:44	1hr.50min.	↓ By Bus
17:35		Kokura

June 13,2024

Time

9:00	Departure	Kokura
	20min.	↓ By Bus
9:20		General Center at Yahata Works, Nippon Steel Corporation
9:30	10min.	Change Clothes
11:10	100min.	PT : Iron making⇒Hot Strip Mill⇒Cold Rolling Plating Plant
11:20	10min.	Change Clothes
	20min.	↓
11:40		Kokura
		↓ By Bus
		Fukuoka Airport