

October 8 Thursday

Room A		Plenary Lecture
9:30 - 10:10	PL-4	Overview of Simandou Operations and Pelletising Test Results Shimon Ando*(Rio Tinto)
Room A		Cold bond and Briquetting
10:10 - 10:30	O-5	SNF' Organic Binders for Green Iron Agglomeration. Gilles ZAKOSEK*(SNF)
10:30 - 10:50	O-6	A Study on Ore-Coal Composite Cold Bonded Agglomerates to Blast Furnace: Binder Optimization and Thermal Behavior Kameswara Srikar Sista*(Principal Researcher, Agglomeration, R&D, Tata Steel Ltd.), Srinivas Dwarapudi
10:50 - 11:10	KeyNote 1	Development of Iron Ore Briquette Process for Low-Carbon Ironmaking SANGHAN SON*(POSCO), Minkyu Wang
11:10 - 11:30 Coffee Break		
Room A		Pellet and Composite pellet
11:30 - 11:50	O-7	The Role of Biochar and Binder in Hydrogen Reduction of Iron Ore Composite Pellets Syafinah Fong*(German Aerospace Center (DLR)), Mohammed Liaket Ali, Quentin Fradet, Nikolaus Manolikakes, Rafiandy Dwi Putra, Andreas Schedl, Uwe Riedel
11:50 - 12:10	O-8	Influence of the Addition of Biochar on the Mechanical Properties of Iron Ore – Biochar Composite Pellets Nikolaus Manolikakes*(German Biomass Research Centre), Rafiandy Dwi Putra, Mohammed Ali, Syafinah Fong
12:10 - 12:30	O-9	Improvement of Pelletizing Plant Operation Using Pellet Size Distribution Measurement Sensor Yuki Kajiyama*(KOBEL STEEL, LTD.), Tsugunori Kato, Kota Kuwana, Michihiro Nakayama
Room B		Carbon neutrality of ironmaking 1
11:30 - 11:50	O-19	Production and Evaluation of Porous Iron Whisker for Gas Reforming Catalyst in CRIP-D Process Haruka Sato*(Tohoku University), Ryota Higashi, Shohei Fujiwara, Taichi Murakami
11:50 - 12:10	O-20	Innovative Carbon Recycling Process for Producing High-Strength Carbon Agglomerates from Blast Furnace Off-Gas Yusuke Dohi*(JFE Steel Corporation), Kenta Takehara, Daisuke Igawa, Takanori Takashima, Yuki Kawashiri, Tetsuya Yamamoto, Takahide Higuchi
12:10 - 12:30	O-21	Novel Pulsed-Discharged Spouted Bed Process for the Reduction of Metal Oxide Powders Takaya Akashi, Phanuwat Khlaisongkhram*(Hosei University), Phanuwat Khlaisongkhram, Shunya Deki, Yuto Kondo, Jo Doi
12:30 - 14:00 Networking Lunch		

Room A		Sinter Process
14:00 - 14:20	O-10	A Novel Inorganic Binding Technology to Improve the Permeability of the Iron Ore Sinter Bed and Increase the Strength of the Final Sinter Rafael Salomao*(São Carlos School of Engineering, University of Sao Paulo), Crislayne Gabriela Andretto, Leandro Fernandes, Isabela Santos Martinatti, Marco Tulio Lima, Andreas Sundblom, Paulo Tiba
14:20 - 14:40	O-11	Low-carbon sintering process by low melting point green pellet mixing Seongkyu Cho*(POSCO), Byung-Jun Chung, Sung-Wan Kim
14:40 - 15:00	O-12	Effect of Controlling Gas Flow Rate between Two Ignition Furnace on Sinter Yield at Double Ignition System Masaru Matsumura*(Nippon Steel Corporation)
15:00 - 15:20	KeyNote 2	Effects of Reducing Sinter Return on Sintering Performance and Sinter Quality Liming Lu*(CSIRO), Evans Tim, Kenta Takahara
15:20 - 15:40	O-13	Integrated Reduction of Sinter Plant Exhaust Gas Emissions and Solid Fuel Consumption Michaela Boeberl*(Primetals Technologies Austria GmbH), Edmund Fehringer, Salim Alfituri, Daniel Koepplmayr
Room B		Carbon neutrality of ironmaking 2
14:00 - 14:20	KeyNote 3	Direct Reduction Simulation Considering Heat and Mass Transfer in Shaft Furnace by DEM-CFD Shungo Natsui*(Tohoku University), Hiroshi Nogami, Yuta Watanabe, Koki Terui, Taihei Nouchi
14:20 - 14:40	O-22	Three Dimensional Nanoscale Analysis of Hydrogen Reduction Mechanisms in Hematite via XAFS CT and Synchrotron Nano-X ray CT Toru Takayama*(Nippon Steel Corporation), Reiko Murao, Shoji Ushio, Kazuya Fujino, Takashi Iijima, Masao Kimura, Yasuo Takeichi, Yasuhiro Niwa, Daiki Kido
14:40 - 15:00	O-23	Evaluation of the Reducibility of Low –Grade Iron Ore Pellets. Ginichiro Sato*(JFE Steel Corporation), Yuji Iwami, Tetsuya Yamamoto
15:00 - 15:20	O-24	Mechanism and Kinetics of Hematite Pellet Reduction in a Hydrogen Atmosphere Ramavatar Ramavatar*(Indian Institute of Technology Bombay), Nurni N. Viswanathan, Deepoo Kumar
15:20 - 15:40	O-25	Modelling of Hydrogen Gas –Based Iron Ore Reduction Process Using OpenFOAM Software and the Sensitivity Analysis of the Parameters Involved Kratika Jain*(Indian Institute of Technology Bombay), Snigdha Ghosh, Nurni N. Viswanathan
15:40 - 16:00 Coffee Break		
Room A		Sintering Phenomenon and Sinter Quality
16:00 - 16:20	O-14	Effects of CaO Addition on the Microstructure and Strength of Iron Ore Sinter Produced by the Composite Layer Sintering Daisuke Maruoka*(National Institute of Technology, Hachinohe College), Taisei Shima, Zhe Ma, Taichi Murakami, Shohei Fujiwara, Eiki Kasai
16:20 - 16:40	O-15	Effect of MgO Concentration and MgO Source on the Formation of Multi –Component Calcium Ferrite Miyuki Hayashi*(Institute of Science Tokyo), Tasuku Ochi, Takashi Watanabe
16:40 - 17:00	O-16	Direct Observation of Calcium Ferrite Formation Behavior Using a High-Temperature SEM Takero Adachi*(KOBE STEEL LTD., Materials Research Laboratory, Refining & Solidification Research Section), Masumi Iwasaki, Shintaro Yamazaki

- 17:00 - 17:20 **O-17** **In Situ Observation of Melting Phenomena in Iron Ore Mixtures Using Synchrotron Radiation X-rays**
Kenta Takehara*(JFE Steel Corporation), Shugo Morita, Kohei Ikeda, Taka Narumi, Hideyuki Yasuda
- 17:20 - 17:40 **O-18** **Fundamental Investigation into the Effect of Various Pre-melt Reactions on Airflow Resistance during Iron Ore Sintering**
Tejbir Singh*(The University of Newcastle), Subhasish Mitra, Siyu Cheng, Tom Honeyands

Room B **Carbon neutrality of ironmaking 3**

- 16:00 - 16:20 **O-26** **Hydrogen Reduction of Iron Ore: Insights from 3D Analysis**
Alexander Kiy*(The Australian National University), Matthew Shadwell, Tim Evans, Mark Knackstedt
- 16:20 - 16:40 **O-27** **Particle Size —Dependent Diffusion Limitations during Hydrogen Reduction of Magnetite Fines at 700 Deg C**
Pritesh Garg*(Luleå University of Technology), Hesham Ahmed, Charlotte Andersson, Jan-Olov Wikström, Sandeep Kumar, Daniel Marjavaara, Susanne Rostmark
- 16:40 - 17:00 **O-28** **Microwave-Assisted Dehydration and Carbothermic Reduction of Iron-Bearing Sludge for Secondary Iron Recovery.**
Tsubasa Tokunaga*(Graduate School of Engineering, Kyushu University), Tatsuya Kon, Kotaro Tanaka, Ko-ichiro Ohno
- 17:00 - 17:20 **O-29** **Particle-Resolved CFD Modeling of Biochar-Iron Ore Composite Pellets in a Fixed Bed**
Quentin Fradet*(German Aerospace Center (DLR)), Mohammed Liaket Ali, Rutvi Shah, Syafinah Fong, Uwe Riedel
- 17:20 - 17:40 **O-30** **Modeling Reduction Kinetics of Iron Ore/Biochar Composite Pellets during Heating and Hydrogen Reduction**
Mohammed Liaket Ali*(German Aerospace Center (DLR)), Syafinah Fong, Quentin Fradet, Nikolaus Manolikakes, Rafiandy Dwi Putra, Andreas Schedl, Uwe Riedel

19:00 - 21:00 **Banquet at ANA Crowne Plaza Toyama**
