

Focus

Development and application of alternative ironmaking processes to provide virgin iron units to the electric arc furnace (EAF) sector or hot metal-to-steelmaking vessels, or to process waste oxides in both blast furnace-based and EAF steel plants.

About the Program

International in scope and participation, this symposium is associated with a high level of activity in research, process and project development, plant construction, and start-up of direct reduction and alternative ironmaking processes.

Who Should Attend

Those engaged in the production, sale, and use of direct reduced iron, pig iron and scrap; managers and engineers from electric furnace and blast furnace-based steel companies; suppliers of iron ore, coal and natural gas; and steel company, engineering company, academic and research institute personnel engaged in ironmaking process development.

Registration

Advance registration by 23 January 2023: Member US\$895, Non-member US\$1,140. Registration after 23 January 2023: Member US\$995, Non-member US\$1,240. Registration includes a welcome reception on Monday evening, breakfast and lunch Tuesday and Wednesday, a reception on Tuesday evening, and online access to presenter approved presentations.

Hotel Accommodations

A block of rooms has been reserved at the Wyndham Lake Buena Vista Disney Springs Resort Area. Please call the hotel at +1.800.624.4109 by 13 February 2023 to secure the AIST discount rate of US\$169 per night for single/double occupancy plus US\$20 resort fee.

Professional Development Hours

This course may qualify for up to 15 Professional Development Hour (PDH) credits. Each attendee will receive a certificate listing the quantity of PDH credits earned for the course. This course is not approved for PDH credit in New York, Florida, North Carolina and Oklahoma.

Attention Non-Members

Non-member registration fees include membership in AIST through 31 December 2024. Membership is not automatic. A completed membership application must be returned to AIST.

Organized By

AIST's Direct Reduced Iron Technology Committee.

Organizing Committee

Jan Van der Stel, Tata Steel Europe
Joe Poveromo, RMI Global Consulting
José Noldin, Companhia Siderurgica Nacional LLC (CSN)
Angelo Manenti, Metal Consulting LLC
Thomas Battle, Extractive Metallurgy Consultants
Koji Saito, Nippon Steel Research Institute
Mitren Sukhram, Hatch Associates Ltd.
Zane Voss, CIX Inc.



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AIST Members
US\$895 Before
US\$995 After
23 January

Non-Members
US\$1,140 Before
US\$1,240 After
23 January



SCAN FOR MORE
INFORMATION



Scrap Supplements & Alternative Ironmaking 9

6-8 March 2023

Wyndham Lake Buena Vista Disney Springs Resort Area
Orlando, Fla., USA

AIST.org

Monday, 6 March 2023

2-4 p.m. Registration

5-6 p.m. Reception

Tuesday, 7 March 2023

7 a.m. Registration and Breakfast

8 a.m. Overview of Direct Reduction and Alternative Ironmaking Processes and Products, *Joseph Poveromo, RMI Global Consulting*

8:30 a.m. Producing DRI From Zinc-Contaminated Steelmaking Byproduct Dusts, *Daniel Stewart, ArcelorMittal Global R&D – East Chicago*

9 a.m. The Alterna Flash Iron-Fines Reduction (FIFR) Process: A New H₂-Based DRI Process for Unpelletized Iron Ore Concentrate and Iron Oxide Fines, *Lee Nigg, Alterna Materials*

9:30 a.m. Break

10 a.m. Grid Interactive Steelmaking With Hydrogen (GISH), *Yuri Korobeinikov, Arizona State University*

10:30 a.m. Hydrogen DRI: The Effect of Carbon Content on Melting Behavior

11 a.m. Comparison of DRI Strength From Reduction in CO vs. H₂-Dominant Gas-Based Reduction, *Grant Kenny, Carnegie Mellon University*

11:30 a.m. Distribution Behavior of Phosphorus and Metallization of Iron Oxide in Carbothermic Reduction of High-Phosphorus Iron Ore, *Sungmo Jung, Pohang University of Science and Technology*

Noon Lunch

1 p.m. Development of Adiabatic Countercurrent Moving Bed for Shaft Furnace Simulator, *Moritoshi Mizutani, Nippon Steel & Sumitomo Metal Co.*

1:30 p.m. Melting of HBI/DRI Scrap in an AC Electric Arc Furnace: A CFD Study, *Orlando Ugarte, Purdue University Northwest*

2 p.m. Coupled CFD and DEM Simulation of Iron Ore Pellet Flow Jamming in a DRI Feed Hopper, *Tyamo Okosun, Purdue University Northwest*

2:30 p.m. Break

3 p.m. The ENERGIRON Technology: The Perfect Fit Between Decarbonization and Direct Reduction, *Joel Morales, Tenova HYL*

3:30 p.m. MIDREX Flex: Moving From Natural Gas to Hydrogen, *Will Friesinger, Midrex Technologies Inc.*

4 p.m. HYFOR – Hydrogen-Based Fine Ore Reduction – From an Idea to a Pilot Plant, *Thomas Wolfinger, KI-MET GmbH*

5 p.m. Reception

Wednesday, 8 March 2023

7 a.m. Breakfast

8 a.m. Electric Furnace Smelting for Alternative Hot Metal Production, *Craig Garlick and Khadijeh Paymooni, University of Newcastle*

8:30 a.m. Ironmaking Using Raw Sustainable Biomass and Microwave Energy, *David Leigh, Rio Tinto*

9 a.m. Use of Dry Reforming Catalyst to Increase Reducing Gas Production by Supplementing Green Hydrogen Into Feed/Fuel Thus Reducing Both Fuel Requirement and CO₂ Emissions, *Gary Bennington, Unicat Technologies Inc.*

9:30 a.m. Break

10 a.m. Approaches to Find the Lowest Cost and Most Reliable Decarbonization Pathway

10:30 a.m. Magnum Mining's Plans for a Green Pig Iron Plant in the U.S., *Neil Goodman, Magnum Mining and Exploration*

11 a.m. Several Applications of Advanced Electric Smelting Furnace Technology for Low-Emission Electric Steelmaking, *Sa Ge, Hatch*

11:30 a.m. Operational Experience at the Hlsarna Pilot Plant, *Johan van Boggelen, Tata Steel IJmuiden*

Noon Lunch

1 p.m. Maritime Regulation and the HBI-C-Flex Project: Enabling International Shipment of Hot Briquetted Iron (HBI) in the Long Term, *Chris Barrington, International Iron Metallics Association (IIMA)*

1:30 p.m. The Future of Defossilization – Through the Looking Glass, *Sara Hornby, Global Strategic Solutions Inc.*

2 p.m. Ore-Based Metallics – Scrap Substitute, Supplement or Necessity?, *Jeremy Jones, CIX Inc.*

2:30 p.m. Break

3 p.m. Circularity and Fossil-Free Reduction of Metal Oxides

3:30 p.m. Understanding of Rising and Failure of Gas-Based Direct Reduction Processes, *Iakov Gordon, Hatch*

4 p.m. Conference Adjourn

**SCAN FOR PRESENTATION ABSTRACTS
AND AN UP-TO-DATE SCHEDULE**



Presentations and times subject to change.