

The 4th ISIJ-VDEh-Jernkontoret Joint Symposium
14-15 April 2026 at Sakura Hall, Tohoku University, Miyagi, Japan

Program

Tentative Schedule

14 April 2026

Session 0 (Opening Plenary)

Theme: National Steel Industries Facing the Next Technological Transition

09:00 **Steel Production in Sweden: Navigating the Next Technological Transition**

Christer Ryman (Jernkontoret)

09:30 **Status of Steel Industry and Technological Progress of Iron and Steelmaking in Japan**

Kenichi Higuchi (Nippon Steel)

10:00 **The German Steel Industry and Its Various Ways of Transformation**

Peter Schmieding (Steel Institute VDEh)

10:30-10:45 (15 min) **Coffee break**

Session 1

Theme: Hydrogen Ironmaking and Carbon Circulation in Blast Furnaces

10:45 **Melt Dripping Control in H₂ Blast Furnaces: From Carburization Chemistry to DripVis-H₂BF**

Ko-ichiro Ohno (Kyushu University)

11:00 **Impact on biocarbon supply scenarios from fossil free steelmaking operations**

Erland Nylund (Swerim)

11:30 **Evaluation of Optimal Carbon-Recycling Reducing Agents to Reduce CO₂ Emissions in Blast Furnaces**

Yuki Iwai (JFE Steel)

11:45 **Reduction of Coke Consumption by Optimal Placement of Coarse Coke Breeze at Kakogawa Sinter Plant**

Kisato Koga (Kobe Steel)

12:00-13:15 (75 min) **Lunch**

Session 2

Theme: DRI / H-DRI Melting and Fundamentals in Iron and Steelmaking

13:15 **Effects of SiO₂ and Al₂O₃ on the Composition Region of Silico-ferrite of Calcium and Aluminum series at 1240oC in Air**

Miyuki Hayashi (Institute of Science Tokyo)

13:30 **Melting, Smelting, and Carburization Behavior of Direct Reduced Iron**

Xianfeng Hu (Swerim)

14:00 **Process conditions in EAF to facilitate rapid H-DRI melting**

Jonas Svantesson (SSAB)

14:30 **EAF Slag Chemistry Based on Residual Oxides in H-DRI**

Amanda Vickerfält (Swerim)

15:00-15:20 (20 min) **Coffee break**

Session 3

Theme: Advances in Steel Refining

15:20 **High temperature thermophysical properties of molten iron and steelmaking slags relevant for metallurgical processes**

Matheus R. Bellé (TU Bergakademie Freiberg)

15:35 **Phosphorus partition in high-basicity BOF slags – Effects of slag composition from laboratory to industrial scale**

Lukas Neubert (TU Bergakademie Freiberg)

15:50 **Fundamental Study on Tilting Deslagging Behavior Using Laboratory Scale BOF**

Teppeï Tamura (Nippon Steel)

16:05 **The Development of Fluoride-Free Slag in VLF**

Yoshinori Sumi (Daido Steel)

16:20 **Impurities in recycling steels – Challenges and potentials for steel grades with higher tolerances**

Ulrich Krupp (RWTH Aachen)

16:50 **Challenges of the transformation of Al-free steel grades with highest demands on cleanliness**

Barbara Ebel-Wolf (Saarstahl)

19:00 **Banquet**

15 April 2026

Session 4A

Theme: Casting and Solidification Fundamentals

09:00 **Advancing Electromagnetic Stirring in EAF and Slab Casting: Efficiency, Quality, and Sustainability**

Martin Sedén (ABB)

09:30 **Measurement of final solidification position using a Crater end sensor in continuous casting and improvement of center segregation by optimizing soft reduction conditions**

Keigo Toishi (JFE Steel)

09:45 **Enhancing the Quality of High-Carbon Chromium Bearing Steel via Central Segregation Control through Soft Reduction**

Yoshiaki Koto (Aichi Steel)

10:00 **Transformation of the Reheating Process of Steel Slabs**

Jan Erik Menzler (RWTH Aachen)

10:30-10:50 (20 min) **Coffee break**

Session 4B

Theme: Clean Steel and Inclusion Control

10:50 **Fluorescence-assisted In Situ Observation of Inclusion Formation and Solute Concentration Fields during Solidification Using a Model Solution**

Sakiko Kawanishi (Kyoto University)

11:05 **Water Model Experiments of Adhesion of Particles on Air Column Formed by Swirl Flow in Entry Nozzle of Casting Process**

Hiroshi Harada (Nagoya University)

11:20 **Predicting the risk of surface defects in continuous casting using advanced measurements and artificial intelligence**

Jill Sundberg (Swerim)

11:50 **Initial laboratory-scale evaluation of BaCO₃/BaO as a tracer for mold flux originating non-metallic inclusions**

Daniel Haster Olsson (Uddeholms)

12:20-13:30 (70 min) **Lunch**

Session 5

Theme: Resource Circulation, Electrolysis, and EAF Slag Utilization

13:30 **Topological separation of mineral phases in oxide melts toward recovery of valuable elements**

Yu-ichi Uchida (NIT)

13:45 **Dephosphorization of iron ore containing phosphorus**

Hirokazu Konishi (Suzuka CT)

14:00 **VOLTERON – Update on roadmap for low temperature iron electrolysis**

Frank Schaub (ArcelorMittal Bremen)

14:30 **Refining of EAF Slags**

David Algermissen (FEhS)

15:00 **Aspects related to valorization of future electric arc furnace slags as supplementary cementitious materials**

Anton Andersson (LTU)

15:30-15:50 (20 min) **Coffee break**

Session 6

Theme: Process Phenomena, Recycling, and Novel Steelmaking Routes

15:50 **Forming Behavior of Fine Particulate Matters during Iron Ore Sintering Process**

Daisuke Maruoka (Hachinohe CT)

16:05 **Adhesion Suppression Techniques for Scrap in Hot Metal**

Keita Ouchi (Kobe Steel)

16:20 **Trivalent chromium coated steel for packaging as a replacement for TFS (tin-free steel)**

Hans van der Weijde (Tata Steel NL)

16:50 **Solid-state alloy production from steelmaking waste**

Christopher Hulme (KTH)

17:20 **Evaluation of Contact Angle and Wettability of Calcium Sulfide against Molten Iron at 1873K**

Takanori Yoshioka (Sanyo Special Steel)

