Contribution ID: **357** Type: **Oral**

Real laboratory ‘H2Stahl’for hydrogen-based direct reduction

Tuesday 7 October 2025 14:50 (20 minutes)

In the Real laboratory ‘H2Stahl’a Direct Reduction test plant will be engineered, build-up and investigated. The actual status of this project shall be presented to the audience.
The German research project is being carried out by the coordinator VDEh-Betriebsforschungsinstitut GmbH (BFI) in Düsseldorf in close co-operation with thyssenkrupp Steel Europe AG in Duisburg. The test plant will be developed and build by TS Elino GmbH, Düren.
The basic engineering for the construction of this direct reduction test plant, including HAZOP, with a throughput of nominal 100 kg/h DRI has been successfully completed and the core components were ordered already for manufacturing. This means that the build-up of the test plant, as well as special investigations which are carried out in the BFI’s technical centre, are on schedule. The plant has a height of nearly 24 meter and will use hydrogen from the H2-electroysis plant of the Carbon2Chem-centre in Duisburg. Feed gases such as hydrogen, coke oven gas as well as high and low quality iron ore materials will be tested. The Real laboratory ‘H2Stahl’is making a decisive contribution to the transformation of the steel industry in Germany.
The basis for supporting industrial, climate-neutral steel production has thus been laid. The direct reduction trial plant will be a part of a test center consisting of hydrogen electrolysis, direct reduction and smelter, which will map future steel production and answer essential technical questions on the safe, economic and trouble-free operation of large-scale industrial plants.
The presentation will give an overview of planning and build-up of the Direct Reduction test plant and shows the innovative plant construction for following direct reduction trials. An outlook on the commissioning as well as on further activities will be given.

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Session Classification: Hydrogen-Based Direct Reduction (H-DRI)

Track Classification: Hydrogen-based Steelmaking