Online Seminar / Live Stream

# Iron ores

## Characteristics – agglomeration – use

3 – 4 February 2026

8.30 a.m. to 1.30 p.m. CET


## Chairman

Dr.-Ing. Hans Bodo Lüngen

## Online Seminar Concept

Technical quality
The Steel Academy attaches great importance to the audio-visual quality of its online seminars. This seminar will be broadcast as a live-stream from Steel Academy's film studio in Dusseldorf – with high quality camera, microphone and lighting. In the picture will be shown the speaker and his presentation.


photo: R. Chaigneau during an online lecture at Steel Academy's film studio

**Online seminar - how does it work?**

- 2 days before seminar's starting you receive an e-mail with a link and a password
- the link leads you to the streaming platform www.vimeo.com
- you log in with a password

⇨ we recommend using earphones, LAN or good WLAN

**Schedule**

2 days, 5 hours from 8.30 a.m. to 1.30 p.m. CET Berlin time

**Seminar handouts**

Before seminar's starting the participant can download the presentations as a pdf

## Content

- Types, characteristics and chemical compositions of iron ores
- Resources and deposits of iron ores
- Thermodynamics and kinetic fundamentals of iron ore reduction
- Sintering of iron ores
- Pelletizing of iron ores
- The blast furnace process
- Various blast furnace operation modes round the world
- Iron ores for direct reduction and hydrogen-based reduction

## Organisation

Steel Academy / Steel Institute VDEh
Mr Peter Schmieding
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## Target Groups

- Mining staff
- Blast furnace staff
- Direct reduction staff
- Raw material and purchasing staff
- Supervisors responsible on metallurgy, raw materials, purchasing and energy

## Registration Fee

€ 540,00* // € 590,00 VAT-free

* for employees of member companies and individual members of the Steel Institute VDEh. Scientific staff of universities gets a 50 % discount. Also 50 % off for each additional participant from the same company. Cancellation free of charge is not possible after receiving of the log-in data.

+++ as part of the VDEh youth development sponsorship young engineers (up to 30 years) of member companies receive a 50% discount +++

# PROGRAMME

## Tuesday, 3 February 2026

8.30 a.m. **Introduction to the seminar**
P. Schmieding / Hans Bodo Lüngen

8.45 a.m. **Resources and deposits of iron ores**
Hans Bodo Lüngen
Worldwide resources in North and South America, Australia, Europe, Asia and Afrika / Typical iron ore types in these regions

9.30 a.m. questions and answers

9.45 a.m. **Types, characteristics and chemical compositions of iron ores**
Rénard Chaigneau
Iron ore types / Beneficiation / Iron ores' characterisation / Challenges for the sintering process

10.45 a.m. questions and answers

11.00 a.m. **Thermodynamics and kinetic fundamentals of iron ore reduction**
Karl-Hermann Tacke
Phases, reactions, equilibria / Effects of temperature, particle size, porosity, gas properties and other parameters of reduction kinetics

12.00 a.m. questions and answers

12.15 p.m. **Sintering of iron ores**
Rongshan Lin
Sintering process / Process modelling / Operation control / Sinter productivity / Sinter mineralogy / Sinter quality parameters

1.15 p.m. questions and answers

1.30 p.m. **end of 1st day**

## Wednesday, 4 February 2026

8.30 a.m. **Pelletizing of iron ores**
Willemijn Husslage-van Kaam
Pelletizing process / Pellet plant technologies / Binding mechanism / Firing temperature and pressure strength / Quality and requirements on pellets

9.45 a.m. questions and answers

10.00 a.m. **The blast furnace process**
Peter Schmöle
Blast furnace operation / Process diagrams / Heat and mass balances / Gas flow / Flow of liquids / Cohesive zone / Deadman / Coke quality

11.15 a.m. questions and answers

11.30 a.m. **Various blast furnace operation modes round the world**
Hans Bodo Lüngen / Peter Schmöle
Blast furnace layouts: Inner volume, campaign life / Special regional features / Single blast furnace highlights: Productivities, ore burden compositions and injection of auxiliary reductants in global comparison

12.15 p.m. questions and answers

12.30 p.m. **Iron ores for direct reduction and for hydrogen-based direct reduction**
Rénard Chaigneau
Direct reduction process / Pellets are the natural choice for conventional direct reduction – also for efficient hydrogen-based reduction?

1.30 p.m. questions and answers

**=> afterwards: end of seminar**

## SPEAKERS

Dr. ir. Rénard Chaigneau, Baffinland Iron Mines Europe B.V., Amsterdam ■ Willemijn Husslage-van Kaam, Rio Tinto, London ■ Dr.-Ing. Hans Bodo Lüngen, Neuss ■ Dr.-Ing. Rongshan Lin, Dillingen ■ Prof. Dr.-Ing. Peter Schmöle, schmoele Consulting, Dortmund ■ Prof. Dr.-Ing. Karl-Hermann Tacke, TU Berlin ■ Organisation : Peter Schmieding, Steel Academy, Steel Institute VDEh