

Target Group

- Maintenance and operating staff
- Supervisors responsible for plant and unit operations
- Managers responsible for decisions on metallurgy, energy, purchasing and environmental protection
- IT and measurement staff

The participants will learn about modern processes and methods in blast furnace iron making and will particularly benefit from detailed discussions.

Speakers

- Dr.-Ing. Alexander Babich
Department of Ferrous Metallurgy, RWTH Aachen
- Dr.-Ing. Luc Bol,
Tata Steel Europe, Ijmuiden
- Dr.-Ing. Heinz-Peter Eisen
Hüttenwerke Krupp Mannesmann, Duisburg
- Dr.-Ing. Joachim Janz
ArcelorMittal Bremen
- Dr.-Ing. Michael Joksch,
ThyssenKrupp Steel Europe AG, Duisburg
- Dipl.-Ing. Peter Liszio,
KBS Schwelgern, Duisburg
- Dr.-Ing. Hans Bodo Längen
Steel Institute VDEh, Düsseldorf
- Dr.-Ing. Volker Ritz,
Research Centre of Iron Ore Beneficiation and
Metallurgical Testing of Burden Materials, Liebenburg
- Univ. Prof. Dr. Johannes Schenk,
Montanuniversität Leoben
- Dr.-Ing. Peter Schmöle
ThyssenKrupp Steel Europe AG, Duisburg
- Prof. Dr.-Ing. Dieter Senk
Department of Ferrous Metallurgy, RWTH Aachen
- Prof. Dr.-Ing. Gunnar Still
ThyssenKrupp Steel Europe AG, Duisburg

Organisation

The SYMPOSIUM is organised by the Steel Academy at Steel Institute VDEh. Since 1970 the Steel Academy is specialised in metallurgy and materials technology topics. Since 2000 the Steel Academy organises international symposia such as ELECTRICAL ENGINEERING OF ARC FURNACES, CONTINUOUS CASTING and REFRACTORIES TECHNOLOGY.

Remarks

Please send us your registration including:

Surname, Given Name, Job Title, Company, Department, Mailing Address, Postal Code, City, Country, Telephone and Fax Number, e-mail

as soon as possible, because the number of participants is limited.

Registration Fee: € 990* and € 1190 resp. (VAT-free)

* for employees of member companies of the Steel Institute VDEh

Special Note

After the confirmation, the Steel Academy automatically makes a room booking for the participants at the **NH Hotel Düsseldorf City** from 5 – 8 March for a special total rate of Euro 564 €. This price includes full board, starting with dinner on Monday and ending with lunch on Thursday. Please advise at your registration, if you do not need a reservation or whether you would like to stay longer in the hotel.

Registration and further information

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Stahl-Akademie
im Stahl-Zentrum



1st International Seminar

Iron Making in Blast Furnace Plants

5 – 8 March 2012

Directed by

Prof. Dr.-Ing. Dieter Senk

Dr.-Ing. Peter Schmöle

Supported by

Blast Furnace Committee of the
Steel Institute VDEh



Photo: ThyssenKrupp Steel Europe

Venue:

NH Hotel Düsseldorf City

Kölner Str. 186-188

40227 Düsseldorf

GERMANY

Fon +49 (0)211 239586-706

Programme

Monday, March 5, 2012

- 16:00 **Welcome and Introduction of Participants**
Steel Academy / Steel Institute VDEh
- 16:30 **Introduction to the Course**
Prof. Dr.-Ing. Dieter Senk /
Dr.-Ing. Peter Schmöle
Learning and teaching goals; methods
- 17:15 **Crash-Course: Materials Chemistry**
Prof. Dr.-Ing. Dieter Senk
Thermodynamical equilibria; phase diagrams;
system Fe-C-O₂
- 19:00 Common Dinner

Tuesday, March 6, 2012

- 09:00 **Production of Iron and Steel**
Dr.-Ing. Hans Bodo Lungen
Worldwide demand; resources of raw materials;
survey about production; routes of iron and steel
making; history of iron making
- 09:45 **Types and Characteristics of Iron Ore**
Dr.-Ing. Volker Ritz
Resources and reserves; types and grades of ore
- 10:30 Break
- 11:00 **Preparation of Ore: Agglomeration**
Prof. Dr.-Ing. Dieter Senk
Sintering, pelletizing, mixing
- 12:00 **Coke Making**
Dipl.-Ing. Peter Liszio
Coal grades and preparation, coke production and
properties
- 13:00 Lunch

Programme

- 14:30 **Chemical and Physical Processes in the
Blast Furnace**
Dr.-Ing. Peter Schmöle
Heating, reduction, reactions of sinter and ore with
gases; slag formation; gas flow; flow of liquid;
cohesive zone, dead man
- 16:00 Break
- 16:30 **Application of Reductant Matter**
Prof. Dr. Senk / Dr.-Ing. Alexander Babich
Coke, coal, plastics, oil and gases; gasification
mechanisms and rates; injection technology
- 18:00 End of the second day
- 19:30 Common Dinner

Wednesday, March 7, 2012

- 09:00 **Use of Reducing Agents and Oxygen**
Dr.-Ing. Peter Schmöle
Use of reduction matter; PCI: effect on productivity and
energy consumption
- 09:45 **Blast Furnace Operation Practice**
Dr.-Ing. Luc Bol
Capacity, main design, selection of geometrical
parameters; charging, hot blast preparation, tapping;
lining and cooling system
(including break)
- 11:45 **Quality of Hot Metal and Slag**
Dr.-Ing. Joachim Janz
Amount and interaction of chemical elements,
temperature, homogeneity
- 12:30 Lunch
- 14:00 **Departure to the Plant Visit at
Hüttenwerke Krupp Mannesmann, Duisburg**
Dr.-Ing. Heinz-Peter Eisen
- 19:00 Common Dinner

Programme

Thursday, March 8, 2012

- 09:00 **Energy Network in Integrated Iron and
Steel Plants**
Dr.-Ing. Michael Joksch
Cleaning, mixture, storage; coupling of energy sources
and sinks
- 09:45 **Measurement, Control, Automation**
Prof. Dr. Johannes Schenk
Locations of measurement, types of probes; time
constants and reading frequencies; data mining
- 10:30 Break
- 11:00 **Direct Reduction and Smelting Reduction**
Prof. Dr. Johannes Schenk
Midrex, HyL III, rotary hearth, fluidized bed; Corex,
Finex, Hismelt
- 11:45 **Modelling and Simulation**
Dipl.-Ing. Alexander Babich
Options, limits; programs in use and development
- 12:30 **Environmental Protection**
Prof. Dr.-Ing. Gunnar Still
Requirements, measures
- 13:15 **Final Discussion**
- 13:30 **Common Lunch and
End of Seminar**