International Seminar

Refractory Technology
Refractory Materials and Slags in Metallurgy

22 to 25 November 2015, Cologne

TARGET GROUP
Maintenance and operating personnel, supervisors responsible for plant and unit operations, and managers responsible for decisions on refractory problems will learn about new materials and installation methods. Refractory installers, third party inspectors, and contract maintenance personnel will particularly benefit from detailed discussions on new installation techniques and materials.

CONTENT
Basics on chemical and mineralogical composition of refractory material and slag / Testing and evaluation of refractory materials in the laboratory / Dolomite refractories in the steel industry / Synthetic alumina raw material and high alumina cement / Insulating materials for the steel industry / The world of monolithics / Machines for processing and delivering refractory concretes and sprayable refractories / Lime- and dolomite products for steelmaking / Blast furnace process and slags / Oxygen steel making process / Secondary metallurgy / Synthetic slags / Basic bricks for the steel industry / Production and use of Blast furnace slags and steel slags

SUPPORTED BY
Joint Refractories Committee of the Steel Institute VDEh

DIRECTED BY
Dipl.-Geol. J., Hartenstein, Subject “Refractories Materials”
Dr.-Ing. H. Lachmund, Subject “Slags”

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PRICE
EUR 1.262* (EUR 990* registration fee VAT-free plus EUR 272 conference package)
EUR 1.462 (EUR 1.190 registration fee VAT-free plus EUR 272 conference package)
* for employees of member companies and individual members of the Steel Institute VDEh

The conference package includes food and beverages during the seminar.

A free withdrawal from the seminar is possible until 2 weeks prior to the start. Then, 25% of the seminar fee must be paid. The total registration amount will be charged for no show or cancellation from the first day of the event. The participant also has to bear the cancellation costs of the seminar hotel.

VENUE / SEMINAR HOTEL
art’otel Cologne
Holzmarkt 4, 50676 Cologne, GERMANY
Tel +49 221 80103-0
www.artotels.com

Once we have confirmed your place on the seminar the Steel Academy will automatically make a room booking for the participants at the art’otel Cologne from 22-25 Nov. 2015 for a special rate of EUR 109/night incl. breakfast. The hotel room bill will be settled by you upon departure. Please advise at registration, if you do not need a reservation or whether you would like to stay longer in the hotel.
PROGRAMME

Sunday, November 22, 2015
17:30 Introduction into Refractories
19:00 Common Dinner

Monday, November 23, 2015
08:30 Basics on Chemical and Mineralogical Composition of Refractory Material and Slag
Andreas Buhr
Terms used for material description / Compositions, properties and reaction between refractory material and slag / Methods used for mineralogical investigation / Wear model of refractory material
10:00 Break
10:30 Testing and Evaluation of Refractory Materials in the Laboratory in Terms of the Application in Service
Olaf Krause
Sampling / Mechanical properties / Thermal properties / Porosity / Thermal conductivity / Corrosion / Standardisation
11:30 Shaped Refractory Products Based on Alumina
Werner Schönwelski
Fireclay and high alumina / Fired bricks / Carbon containing bricks / Raw materials and additives / Shaping and heat treatment of brick products / Applications in iron and steel industry
12:30 Lunch
13:30 Synthetic Alumina Raw Material and High Alumina Cement
Andreas Buhr
Production, properties and application of tabular alumina / White fused alumina / Spinel / Various matrix alumina and cement / Raw material concept for refractory castables / New developments
15:30 Break
16:00 Dolomite Refractories in the Steel Industry
Johannes Hartenstein
Dolomite and dolomite carbon refractories / Fired and carbon bonded bricks / Properties and relevant testing methods / Use of bricks in converters and ladles / Operating experiences & future developments.
17:00 Insulating Materials for the Steel Industry
Patrick Tassot
Review of the main raw materials for the insulation / Main products / Review on the main regeneration on refractory ceramic fibres / Case studies
18:30 Common Dinner

Tuesday, November 24, 2015
08:30 The World of Monolithics
Patrick Tassot
Introduction / Main raw materials used / Cements, main binders, other additives / Dense alumina based monolithics / Anchors, ways of installation / Drying of monolithics / Typical application / New developments
10:00 Break
10:30 Machines for Processing and Delivering Refractory Concretes and Sprayable Refractories
Martin Breitmann
Types of machines, function and way of application
11:45 Refractory Installations - important aspects to consider
Rüdiger Rasch
Personal resources / Planning of installations / Practical aspects on site / Safety and environmental protection. The presentation describes general aspects important for refractory installations using examples from the pig iron industry.
12:30 Lunch
13:30 Basic Bricks for the Steel Industry
Gerald Buchebner
Raw materials for basic bricks: production and classification / Magnesia carbon bricks: characterisation, production / Magnesia and magnesia-chrome bricks in steel plant application
15:30 Coffee Break
16:00 Blast Furnace Process and Slags
Peter Eisen
Metallurgical tasks of the blast furnace and the BF slag / Composition and properties of the BF slags / Changes in slag composition on the way from the blast furnace to the runner
17:30 Secondary Metallurgy
Helmut Lachmund
Formation of ladle top slags / Slag composition as a function of process route and targets for secondary metallurgy / Metal-slag reaction / Interactions between ladle top slags and refractory mate-rial / Characteristics of ladle top slags and desoxidation-products during casting
18:30 Common Dinner

Wednesday, November 25, 2015
08:30 Oxygen Steel Making Process
Helmut Lachmund
Development of the LD process / Metallurgical fundamentals of the oxygen top-blowing-process: refining reactions and evolution of bath and slag composition, slag formation, lime magnesia-wustite saturation / Interactions: steelmaking slag and refractory material
09:30 Break
10:00 Lime- and Dolomite Products for Steelmaking
Matthias Blöser
The whole range of lime based products and special-products: production and use
11:00 Synthetic Slags
Jost Günther
Raw materials: types + composition / Production, properties, use of synthetic slag / Melting products / Sintered products / Wet slag for-mers / Mixed products / Alkaline slag / CA slag / Labeling / REACH
12:00 Lunch
13:00 Production and Use of Blast Furnace Slags and Steel Slags
Heribert Motz
Definition and slag types / Cooling methods / Properties of slags / Use as building materials and fertiliser / Technical standardisation and environmental behaviour / Statistics on production and use
14:00 Closing Remarks / Discussion